Los Angeles World Airports (LAWA) has prepared this project-level draft environmental impact report (Draft EIR) for the South Airfield Improvement Project (SAIP), pursuant to the California Environmental Quality Act (CEQA). The SAIP is a project component of the LAX Master Plan Program approved by the Los Angeles City Council in December of 2004. The LAX Master Plan was the subject of a certified, program-level environmental impact report (LAX Master Plan Final EIR) and an approved environmental impact statement (LAX Master Plan Final EIS), which were prepared by LAWA and the Federal Aviation Administration, respectively.

The SAIP Draft EIR is “tiered” from the LAX Master Plan Final EIR. This means that this Draft EIR builds on the work contained in the LAX Master Plan Final EIR, and provides additional project-level information and analysis as necessary for the public and decision makers to evaluate the SAIP under CEQA. CEQA encourages public agencies to tier environmental analyses for individual projects from program-level environmental impact reports to eliminate repetitive discussions and to focus the later EIR (such as this Draft EIR) on issues that may not have been fully addressed at a project-level of detail.

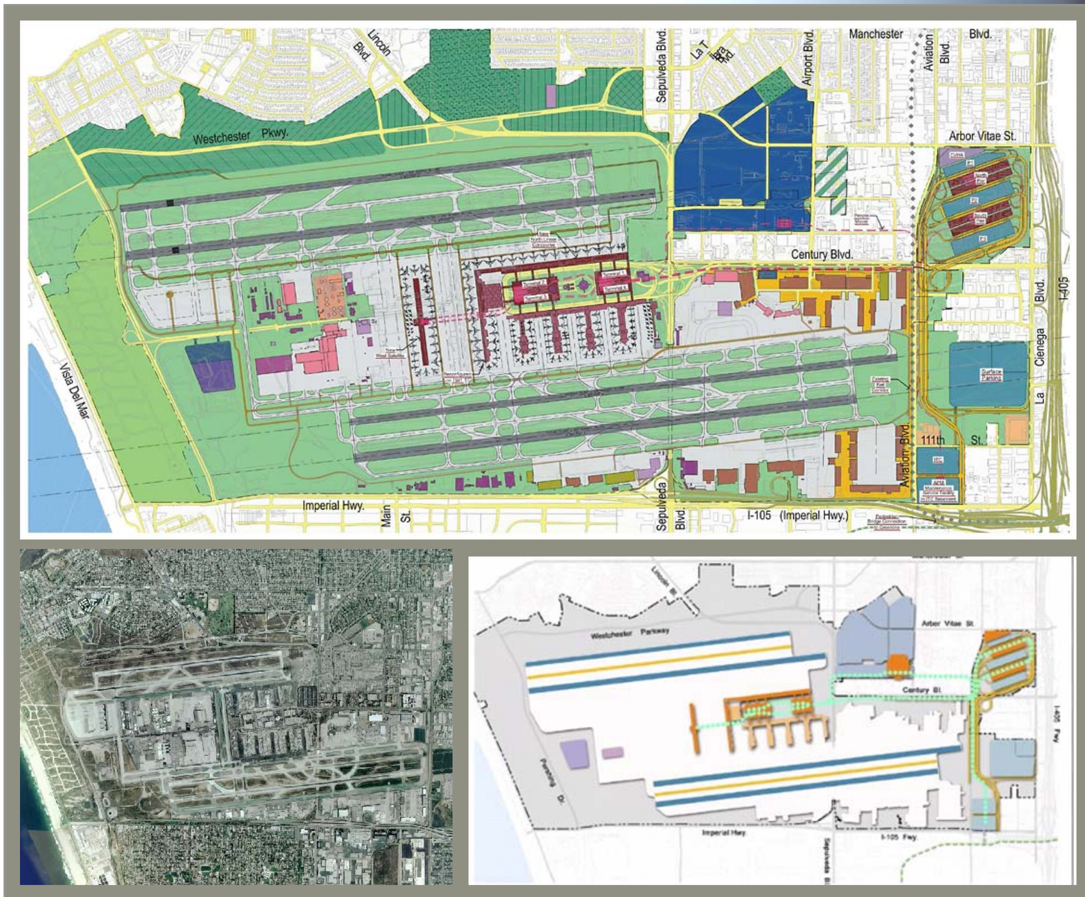
The LAX Master Plan Final EIR dealt with many of the specific issues associated with the SAIP. Accordingly, as contemplated by CEQA, this “tiered” Draft EIR supplements the information and analysis provided in the LAX Master Plan EIR with further detailed information and analysis at the project level. For this reason, the considerable information about the SAIP that is contained in the LAX Master Plan EIR is not repeated in this Draft EIR. To aid the reader, however, an effort has been made to provide a brief summary for each of the areas covered in the LAX Master Plan Final EIR, and the location where the reader can locate the prior treatment of those areas.

This Draft EIR is prepared in accordance with all requirements of CEQA. This Draft EIR incorporates and responds to comments received on the Notice of Preparation for the EIR. LAWA will accept comments on this Draft EIR during the 45-day public comment period, which expires on September 15, 2005. LAWA will then prepare responses to all comments received on issues pertinent to the Draft EIR during the comment period and will publish a Final EIR containing those responses plus any necessary modifications to the Draft EIR. LAWA, the Los Angeles Board of Airport Commissioners and the Los Angeles City Council will use the Final EIR to inform their decisions on the SAIP, as CEQA requires.

Volume II: Table of Contents

Appendix A Conceptual Drainage Plan

This page intentionally left blank.



Los Angeles International Airport
Conceptual Drainage Plan

Los Angeles
World Airports

June 2005

This page intentionally left blank.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF APPENDICES

EXECUTIVE SUMMARY

The Los Angeles International Airport (LAX) Master Plan is a modernization plan that will guide the future development of the airport through 2015. In order to evaluate the impacts of the proposed Master Plan improvements, the Federal Aviation Administration (FAA) and the City of Los Angeles, Los Angeles World Airports (LAWA) prepared a Final Environmental Impact Study (EIS) and Environmental Impact Report (EIR), respectively, in compliance with the National Environmental Policy Act (NEPA) and the California Environmental Quality Act (CEQA). These documents assessed the impacts of four build alternatives as well as the No Action/No Project Alternative. Of these alternatives, in December 2004, the City Council of the City of Los Angeles approved Alternative D, depicted in Figure ES-1. The Final EIS and Final EIR determined that the Master Plan alternatives would have potential impacts to hydrology and water quality. Accordingly, LAWA included a commitment to prepare a hydrology and water quality plan in the Master Plan, entitled HWQ-1, in order to address potential impacts.

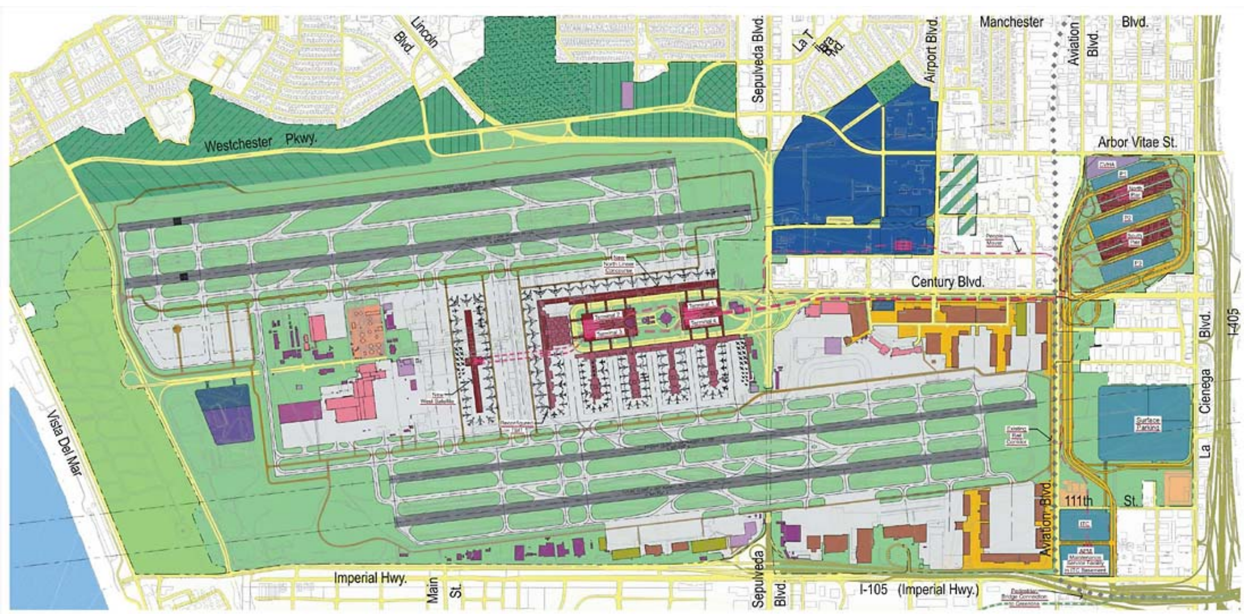


Figure ES-1
LAX Master Plan Alternative D

The Conceptual Drainage Plan presented herein provides an overview of drainage and water quality conditions, capacities, constraints, regulatory framework, and analysis methodologies, and identifies options for addressing the LAX Master Plan Alternative D impacts. The Conceptual Drainage Plan provides the basis by which detailed drainage improvement plans shall be designed in conjunction with site engineering specific to each LAX Master Plan improvement project.

For purposes of evaluating drainage and water quality in this Conceptual Drainage Plan, the LAX project area consists of two major watersheds: Santa Monica Bay and Dominguez Channel. The Santa Monica Bay Watershed is further divided into five sub-areas, Argo,, Imperial, Pershing, Culver, and Vista Del Mar sub-areas, which discharge to the Pacific Ocean (Santa Monica Bay, Dockweiler Beach). The Dominguez Channel Watershed is comprised of two sub-areas, Dominguez Channel North and Dominguez Channel South, which discharge into Dominguez Channel, and eventually reaches the Los Angeles Harbor.

Evaluation of drainage or permanent water quality features in this Conceptual Drainage Plan is limited to the Argo, Imperial, Pershing, Dominguez Channel North, and Dominguez Channel South sub-areas and not conducted for the Culver and Vista Del Mar sub-areas, located within the Santa Monica Bay watershed. The Culver sub-area is located in the northwest corner of LAX while the Vista Del Mar sub-area is located at the westernmost portion of LAX, west of Pershing Drive. No Master Plan development is proposed that would drain to the Culver sub-area. Limited construction associated with the relocation of navigational aids is proposed in the Vista Del Mar sub-area; the Conceptual Drainage Plan includes measures to address this activity. Figure ES-2 provides an overview of the LAX Watershed and shows the five primary sub-areas in which major development projects requiring drainage improvements and water quality BMPs will occur.

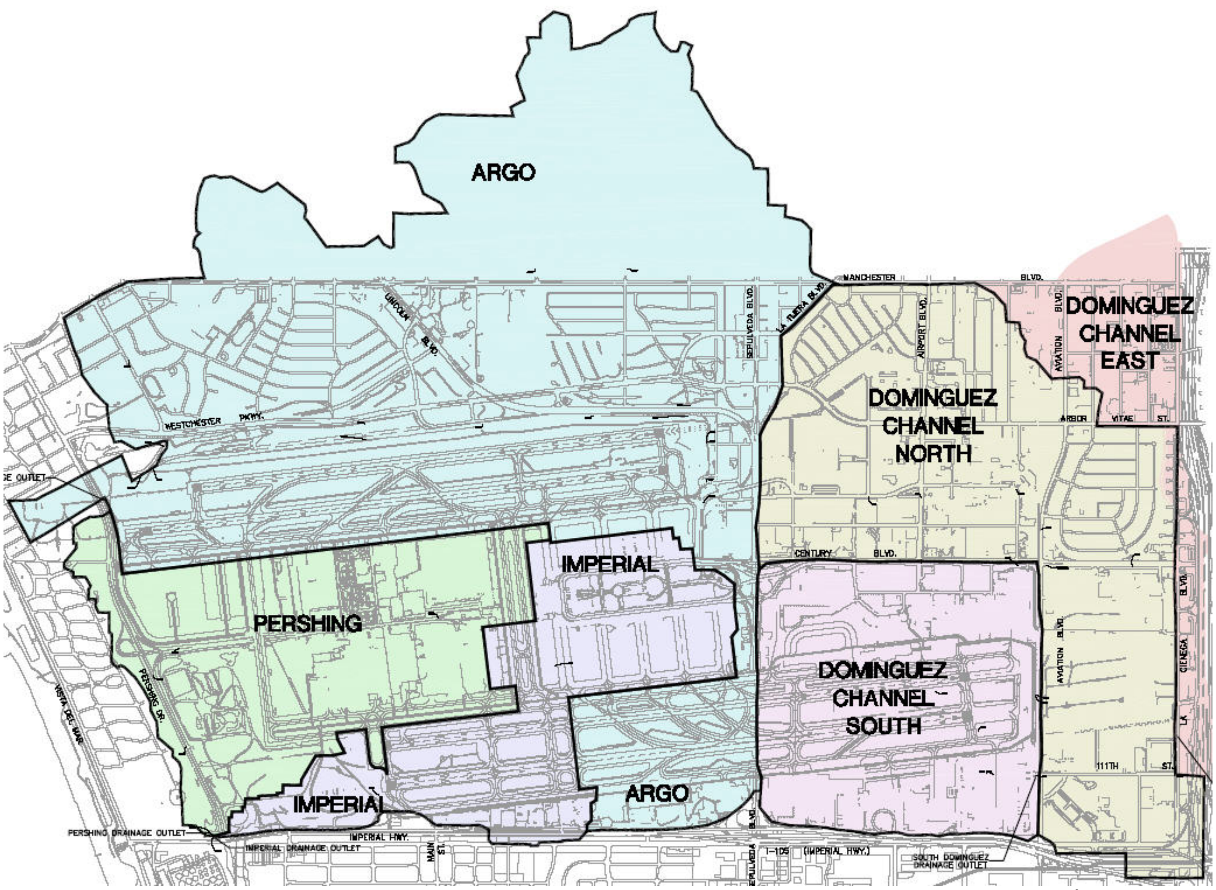


Figure ES-2
LAX Watersheds

DRAINAGE

As part of Master Plan Commitment HWQ-1, sufficient infrastructure must be provided to convey stormwater runoff associated with LAX Master Plan related improvements. Drainage recommendations were developed by assessing the capacity of the existing drainage system, assessing drainage characteristics for the future condition, verifying required levels of protection and then proposing appropriate recommendations.

Drainage conditions were modeled using the updated Los Angeles County Department of Public Works (LACDPW) Modified Rational Method (MORA). Previously prepared hydrology calculations were updated to account for new LACDPW methods and criteria. Utilization of the new methods resulted in a reduction of existing stormwater flows. The largest decrease was attributed to a more refined method in determining the design rainfall for each site.

Based on Federal (FAA), LACDPW and City of Los Angeles design criteria, it was determined that the appropriate project design criteria will have a minimum threshold equivalent to a 10-year capacity. Using this criteria along with the modified existing MORA runs and a factor of safety, the existing storm drains were rated with 50-year, 25-year, 10-year, or less than 10-year capacities. Storm drains that could not achieve a capacity greater than or equal to 10 were considered deficient and further analysis was performed.

Hydraulic system constraints exist for the project site as LAX discharges into the LACDPW system. The combined peak allowable outflow for the Pershing and Imperial systems is 1145 cubic feet per second (cfs). The peak allowable outflow for North and South Dominguez is 1080 and 600 cfs, respectively.

Pipe size increases and the addition of new storm drain lines were used to increase the pipe capacities to meet the required level of flood protection. The redirection of flows into oversized systems was also investigated in order to keep the cost of pipe re-sizing/ replacing to a minimum.

In the Argo sub-area, the drainage system under portions of both the South Runway complex and the North Runway complex requires improvements as well as a few sections at the outer limits of the sub-areas. Overall, approximately 12,650 linear feet (LF) of pipe are required for this area.

In the Pershing sub-area, the drainage system in an area west of the existing airport terminals requires improvements for approximately 6400 LF of pipe.

In the Dominguez North Channel sub-area, there is a small section along 96th street and Airport Boulevard. that requires improvements, including approximately 2,100 LF of new storm drain.

In the Dominguez Channel South sub-area, due to restrictive drains under the North and South Runways, more pipe or reinforced concrete boxes (RCBs) need to be replaced than in any other area. Approximately 15,900 LF of new storm drain is required.

The proposed storm drain improvements represent a conceptual drainage plan that will provide the required level of protection from flooding within the airport property following the development of Alternative D projects. The plan provides the basis by which detailed drainage improvement plans shall be designed in conjuction with site engineering specific to each Master Plan project. Detailed project designs shall provide equivalent or better protection.

WATER QUALITY

The Conceptual Drainage Plan provides an overview of relevant storm water regulations affecting the planned Master Plan improvements, the methodology used in evaluation of the required Best Management Practices (BMPs), as well as the recommended BMP options and sizing requirements which will be implemented as part of the Master Plan development projects within the LAX Master Plan project limits. The information presented is a preliminary step in planning the type of BMPs and sizing requirements and as an indication of various options that may be feasible for implementation during various phases of project development. Project specific requirements, such as exact number of BMPs, footprints and other details, are not discussed in this document. Specific BMP requirements will be assessed in the future phases of the project and with availability of more detailed project information.

As each Master Plan project progresses through advanced planning and design, a project-specific Standard Urban Stormwater Mitigation Plan (SUSMP) will be prepared based on the detailed site engineering. The BMPs identified will be similar to and/or provide equivalent performance to those shown in this Conceptual Drainage Plan.

Water quality methodology and criteria used in the evaluations presented in the Conceptual Drainage Plan take into consideration:

- Sizing of treatment BMPs to meet LACDPW SUSMP and Municipal Separate Storm Sewer System (MS4) permit requirements
- Source control BMPs to meet the MS4 permit requirements
- Source control and treatment control BMPs to meet City of Los Angeles (Stormwater Management Division) Program Development BMP requirements
- Satisfying Total Maximum Daily Load (TMDL) requirements, once implemented
- Construction and Industrial Storm Water Pollution Prevention Plan (SWPPP) requirements meeting the State and MS4 permit requirements
- BMP costs and maintenance requirements

Figure ES-3 presents an overview of storm water permitting requirements, which encompass Federal, State, and local requirements.

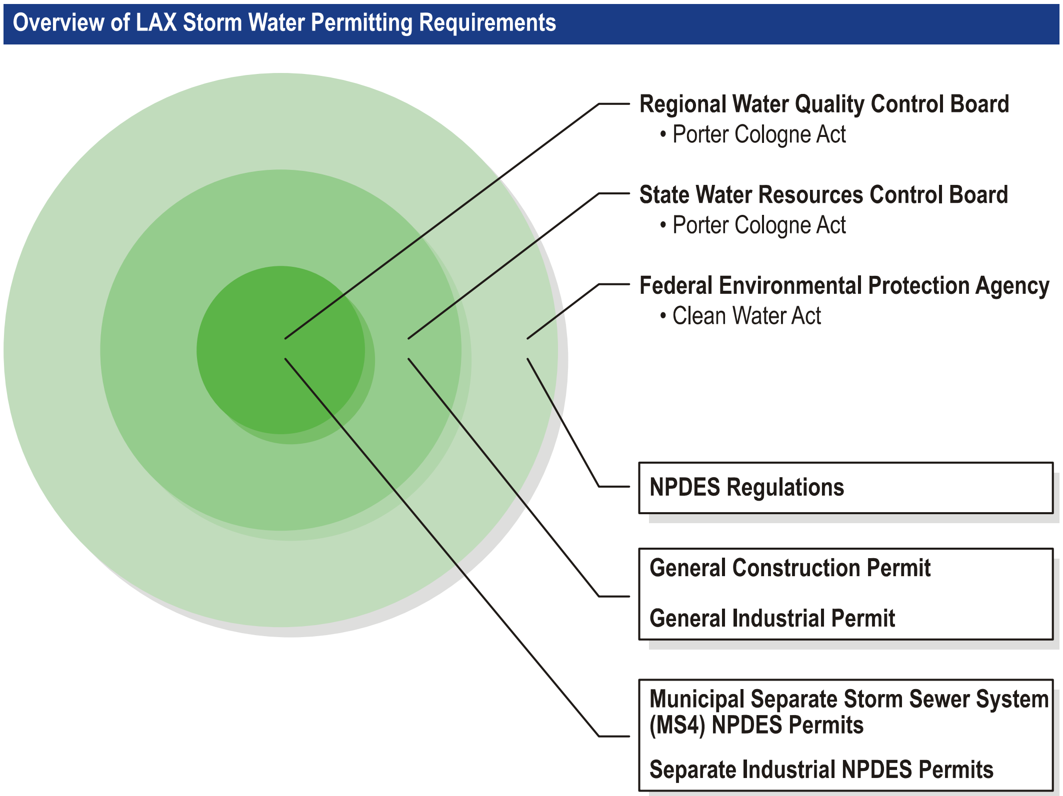


Figure ES-3
Overview of LAX Storm Water Permitting Requirements

The recommended BMP options include both pollution prevention or source control options and treatment control options. The main objective for selection of the BMPs for the LAX Master Plan area is to incorporate systems capable of potentially minimizing the surface water quality impacts to the maximum extent practicable (MEP) level (i.e., meeting MS4 permit and SUSMP requirements) and demonstrating that implementation of BMPs can prevent a net increase in pollutant loads to surface waters as required by Master Plan Committment HWQ-1. Treatment control BMPs may mitigate identified impacts on a site-specific basis. Source control BMPs are baseline measures used to address design phase elements, routine and good housekeeping measures, and construction and industrial activities including spill control mitigation. Furthermore, the Conceptual Drainage Plan provides general recommendations for implementation of measures to satisfy the General Construction and Industrial Permit requirements. These recommendations include requirements for measures and controls that utilize best available technology (BAT) and best conventional pollutant control technology (BCT) to reduce pollutants.

Figure ES-4 summarizes the process for selecting treatment control BMP options.

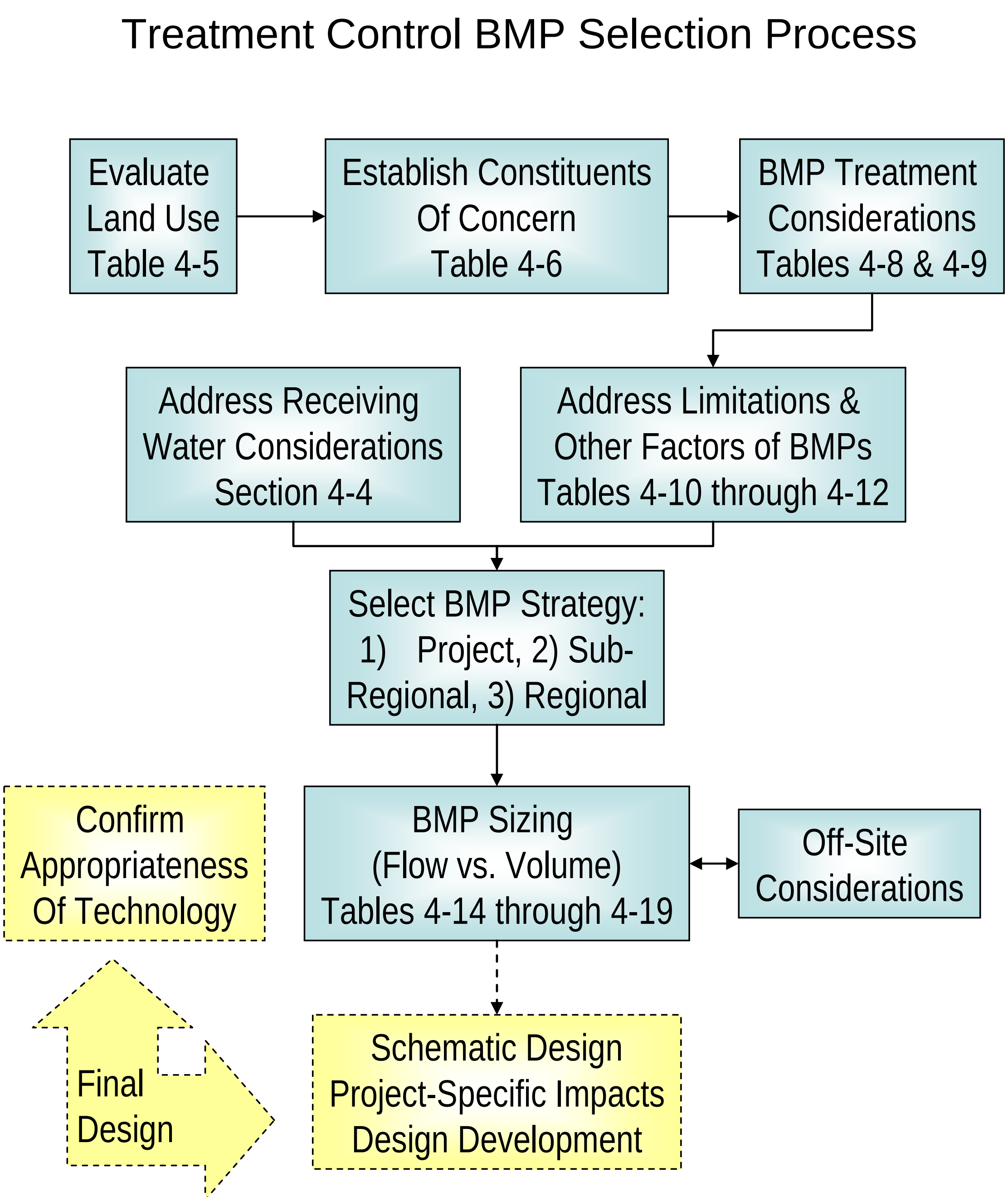


Figure ES-4
Treatment Control BMP Selection Process

The LAX Master Plan assumes ultimate build-out of the preferred alternative, Alternative D, by the year 2015. This construction is proposed to occur in three phases, each of which is comprised of several projects located throughout the site. Accordingly, the BMP strategy will need to consider the phased implementation of the Master Plan projects. As such, various categories of BMP options are recommended to effectively minimize water quality impacts throughout the phases of construction:

- Project-Specific BMPs (such as drainage inserts) are intended to provide coverage for specific projects, meeting on-site requirements as well as serving as interim measures until sub-regional or regional BMPs are installed.
- Sub-Regional BMPs (such as bioretention, vegetated swales and water quality inlets/media filters) maximize opportunities for mitigation by meeting the needs of several projects.
- Regional BMPs (such as detention-infiltration), serve the largest tributary area and are designed to address the needs of larger portions of the airport and, if appropriate, off-site needs as well.

Recommended treatment control BMP options are summarized in Table ES-1.

Specific project phasing for Alternative D is also discussed herein. It should be noted that project-specific BMPs are recommended for implementation only if the recommended sub-regional and regional BMPs are not feasible for the project area due to site constraints. These BMPs are proposed to address the pollutants of concern to the MEP level and to the no-net-pollutant increase standard included in Master Plan Commitment HWQ-1.

A pollutant load analysis for LAX Master Plan Alternative D was conducted based on incorporation of recommended Conceptual Drainage Plan BMPs. This load analysis is included in Appendix C. The analysis concludes that when incorporating recommended BMPs into the Alternative D site plan, there is no net increase in estimated average annual pollutant loads to the Santa Monica Bay and Dominguez Channel sub-areas.

In order to provide a preliminary evaluation of treatment control BMPs, recent costs were reviewed and used to evaluate the BMPs. The assessment included life-cycle costs, which can serve as the first step in selecting and planning of the most cost-effective technologies. These costs are provided mainly for comparison of the BMPs and provide a basis for preliminary evaluation of BMP costs based on the water quality volumes estimated in this study.

Source control (or pollution prevention) BMPs were recommended for specific LAX Master Plan projects to provide further mitigation and control some pollutants not controlled by a specific treatment control BMP. The Conceptual Drainage Plan presents a summary of some basic pollution prevention options that may be implemented by LAWA.

LAWA will identify and implement construction phase BMPs through a specific Storm Water Pollution Prevention Plan (SWPPP) for each Master Plan project within the LAX project area, and FAA will identify and implement construction BMPs for the relocation of navigational aids within the Los Angeles/El Segundo Dunes.

TABLE ES-1
RECOMMENDED TREATMENT CONTROL BMP OPTIONS

Site Location	Predominant Land Use(s)	Project-Specific BMPs	Sub-Regional BMPs	Regional BMPs [A]
Dominguez Channel North Sub-Area				
GTC	Parking/Terminal	Drain Inserts	Bioretention	N/A
Parking Lot E	Parking	Drain Inserts	Vegetated Swales / Bioretention	N/A
ITC	Parking	Drain Inserts	Bioretention (roof)	N/A
RAC	Parking	Drain Inserts	Vegetated Swales / Bioretention	N/A
Dominguez Channel South Sub-Area				
Runway	Airport	Drain Inserts	Vegetated Swales	N/A
Aprons	Airport	Drain Inserts / Water Quality Inlets [B]	Media Filters [B]	N/A
Argo Sub-Area				
Airport, Non-Runway	Airport	Drain Inserts / Water Quality Inlets [B]	Media Filters [B]	Detention-Infiltration [C]
Runways	Airport	Drain Inserts	Vegetated Swales	Detention-Infiltration [C]
Off-site	All	N/A	N/A	Detention-Infiltration [C]
Pershing Sub-Area				
Total Pershing	Airport, O/S, Parking	Drain Inserts / Water Quality Inlets [B]	Media Filters [B]	Extended Detention / Retention [D]
Imperial Sub-Area				
Runway	Airport	Drain Inserts	Vegetated Swales	N/A
Non-Runway	Airport, Comm., O/S	Drain Inserts / Water Quality Inlets [B]	Vegetated Swales / Bioretention / Media Filters [B]	Extended Detention / Retention [D]

Notes

A. If regional BMP is not constructed, project-specific BMPs must be used at least on a temporary basis until sub-regional and/or regional BMPs are constructed.

B. Proposed measures include water quality inlets and/or media filters as well as expanded use of the existing water quality inlets. It should be noted that water quality inlets are recommended to be used only in areas where traffic, fueling and maintenance operations may result in high concentrations of oil/petroleum hydrocarbons in storm water and in particular where other BMPs are not feasible.

C. Use of Argo Drain for linear detention/infiltration basin.

D. Use of existing water quality retention basin and proposed extended detention basin, both of which would be hydraulically connected.

Source: Psomas 2004.

SECTION 1.0
INTRODUCTION

1.1 BACKGROUND AND PROJECT DESCRIPTION

The Los Angeles International Airport (LAX) Master Plan is a modernization plan that will guide future development through 2015. A vicinity map of LAX is shown in Figure 1-1.

With implementation of the Master Plan, both the north and south airfields will be reconfigured by increasing the separation between the runways and by adding a parallel taxiway between them. The existing Central Terminal Area (CTA) parking structures will be demolished and replaced with new passenger terminals and baggage screening facilities. The north terminals and gates will be demolished and replaced with a linear terminal. Private and commercial vehicles will access the airport through a new Ground Transportation Center (GTC) bounded by Century Boulevard, Aviation Boulevard, Arbor Vitae Street, and La Cienega Boulevard. Additional parking will be available in an expanded Lot 'E'. Short-term parking and connection to the Green Line will be located at a new Intermodal Transportation Center (ITC) at the northeast corner of Imperial Highway and Aviation Boulevard. The ITC, GTC, and CTA would be connected by an Automated People Mover (APM).

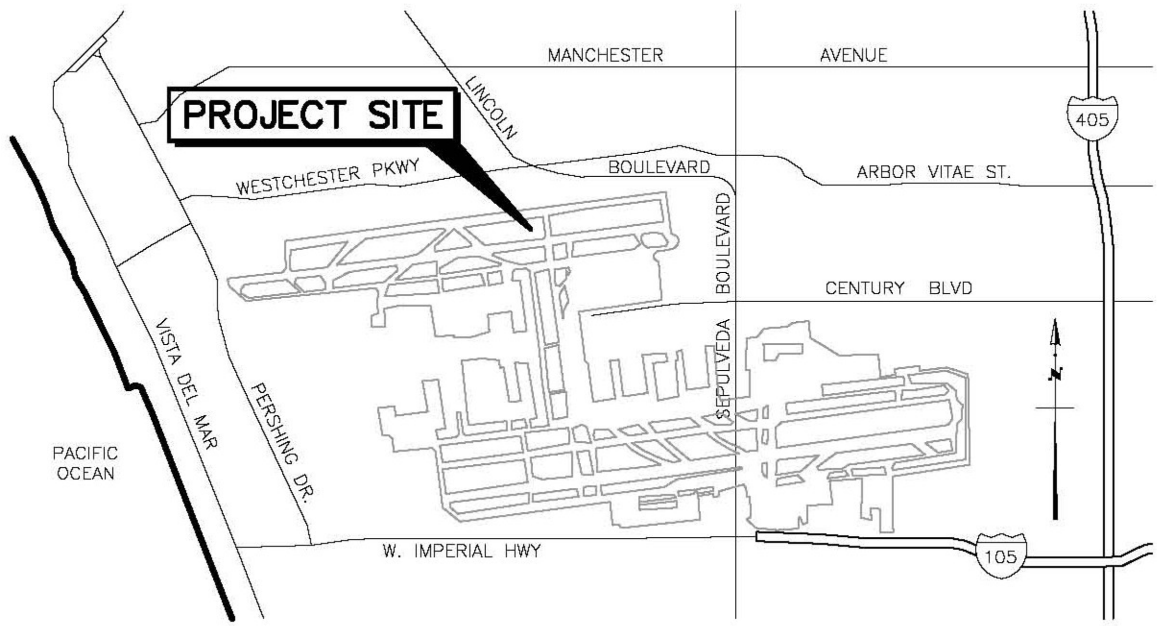


Figure 1-1
Vicinity Map of LAX

Additional features of the Master Plan include the construction of a new Consolidated Rental Car Facility (RAC) in the general location of existing long-term parking lots C and D, a new employee parking garage on the west side of the airport, a new terminal located west of the existing Tom Bradley International Terminal (TBIT), new and replacement cargo, maintenance and ancillary facilities, baggage tunnels, and access roads.

In addition to these improvements, the 340-acre LAX Northside area will be developed with up to 4.5 million square feet of office, business park, hotel, retail, and golf course uses, subject to a limitation on the total number of daily vehicle trips generated.

In order to evaluate the impacts of the proposed Master Plan improvements, FAA and LAWA prepared a Final Environmental Impact Statement (EIS) and Final Environmental Impact Report (EIR), respectively, in compliance with the National Environmental Policy Act (NEPA) and California Environmental Quality Act (CEQA). These documents assessed impacts of four build alternatives as well as the No Action/No Project Alternative. The documents determined that the Master Plan alternatives would have potential impacts to hydrology and water quality. Accordingly, LAWA included a commitment to prepare a hydrology and water quality plan in the Master Plan, entitled HWQ-1, in order to address potential impacts. Master Plan Commitment HWQ-1 requires that sufficient facilities be provided to adequately convey stormwater runoff, meet water quality regulations, specifically requirements outlined in the LACDPW SUSMP, and ensure no net increase in pollutant loadings to receiving water bodies. This CDP fulfills the requirements of Master Plan Commitment HWQ-1 relative to preparation of a conceptual drainage plan for the selected Master Plan alternative.

1.2 SCOPE OF THE CONCEPTUAL DRAINAGE PLAN

The purpose of this Conceptual Drainage Plan is to provide a more refined assessment of potential hydrology and water quality impacts associated with the LAX Master Plan improvements and identify measures to minimize those impacts. By doing this, the Conceptual Drainage Plan serves the following functions:

- Act as a bridge document between the Master Plan EIS and EIR and project implementation
- Determine input and recommendations for project development
- Integrate drainage and water quality assessments and recommendations
- Address phasing and implementation issues
- Fulfill Master Plan Commitment HWQ-1

Preparation of the Conceptual Drainage Plan included the following:

- Reviewing available studies and analyses
- Assessing baseline condition hydrology and water quality
- Identifying measures to minimize potential drainage and water quality impacts
- Evaluating project condition hydrology and water quality

A separate evaluation of storm water pollutant loads was conducted and is provided in Appendix C.

Section 3 contains the analysis and recommendations for storm drain infrastructure to provide sufficient capacity to convey at a minimum a 10-year storm event throughout the project site with future Master Plan improvements. The recommendations in Section 3 are to guide the advance planning development and further analyses in the implementation of individual Master Plan projects. Section 4 provides recommendations for addressing water quality issues raised in the Final EIS and Final EIR, as identified in Master Plan Commitment HWQ-1. The recommendations in Section 4 will be further developed in the advance planning stage to support environmental clearance efforts as well as schematic design and design development for individual projects.

Section 5 lists the proposed infrastructure by Phase. Further analysis regarding the construction of each project within each phase will be developed in advance planning. Since the proposed storm drain recommendations address primarily main trunk lines, the recommendations contained herein could be constructed independently or as part of discrete projects without affecting neighboring systems. Furthermore, since the exact sequence of project development may be subject to change, projects were considered individually.

Appendix A and Appendix B contain detailed maps and supporting information for the Conceptual Drainage Plan described in this report. Appendix C presents an updated analysis of the pollutant load estimates calculated for Master Plan Alternative D in the Final EIS and Final EIR that takes into account reductions from the treatment control BMPs identified in the Conceptual Drainage Plan. This analysis fulfills the requirement of HWQ-1 to demonstrate that the goal of achieving no net increase in loadings of pollutants of concern to receiving water bodies will be met through implementation of the BMPs.

SECTION 2.0
EXISTING CONDITIONS

2.1 PREVIOUS STUDIES AND ANALYSES

As part of the Conceptual Drainage Plan, a review of previous studies and analyses was conducted. A substantial number of the available documents were associated with the CEQA/NEPA process and are described in Section 2.1.1. Specific findings can be found in the documents listed below. Other studies, including more detailed hydrology reports and monitoring reports, were also reviewed and are summarized in Section 2.1.2.

2.1.1 CEQA/NEPA DOCUMENTS

There are several CEQA/NEPA documents associated with the LAX Master Plan. Four documents pertain to stormwater runoff management:

- *LAX Master Plan Draft EIS/EIR, Section 4.7: Hydrology and Water Quality*, Camp, Dresser & McKee, Inc. (CDM), 2001.
- *Technical Report 6, Hydrology and Water Quality Technical Rep*ort, CDM, January 2001.
- *LAX Master Plan Supplement to the Draft EIS/EIR, Section 4.7: Hydrology and Water Quality*, CDM, 2003.
- *Technical Report S-5, Supplemental Hydrology and Water Quality Technical Report*, CDM, June 2003.
- *LAX Master Plan Final EIR, Section 4.7, Hydrology and Water Quality, CDM*, April, 2004, and addenda, specifically *Second Addendum to the Final EIR*, Appendix AD(2)-B, December, 2004.
- *LAX Master Plan Final, EIS, Section 4.7, Hydrology and Water Quality, CDM*, January, 2005.

HYDROLOGY

The CEQA/NEPA documents identify the following thresholds of significance for hydrology:

- An increase in runoff that would cause or exacerbate flooding with the potential to harm people or damage property.
- Substantial interference with groundwater recharge such that there would be a net decrease in the aquifer volume or a change in groundwater storage that would adversely affect the quantity, water level, or flow of the underlying groundwater relative to beneficial uses of the basin.
- Substantial alteration of the existing drainage pattern of the site in a manner which would result in substantial erosion or siltation on- or off-site.

Hydrologic analyses in the CEQA/NEPA documents consider potential changes in storm water runoff resulting from the Master Plan alternatives by assessing changes in land use, which would produce a change in the amount of impervious area and a potential corresponding change in storm water peak flow rates. Land use classifications were obtained from the Westchester – Playa del Rey Community Plan of the City of Los Angeles. Corresponding impervious factors were obtained from the 1973 *City of Los Angeles Storm Drain Design Manual.* No storm water peak flowrates or detention volumes are characterized in the Master Plan CEQA/NEPA documentation.

WATER QUALITY

The CEQA/NEPA documentation identifies the following threshold of significance for water quality:

> An increased load of a pollutant of concern delivered to a receiving water body by surface water runoff.

The water quality assessment includes a pollutant load analysis developed from land-use-based event mean concentrations (EMCs). EMC data were derived from stormwater data collected by LACDPW and the American Association of Airport Executives (AAAE). The LACDPW EMCs were generated based on stormwater monitoring from 1994-2000. AAAE EMCs came from samples at over 605 airports nationwide and are published in a report entitled, *Predicting Pollutant Loads in Airport Storm Water Runoff – Advanced Spatial Statistics* (Brenda Ostrom, Advanced Spatial Statistics, 1994). Land uses were based on classifications identified in the Westchester-Playa Del Rey Community Plan.

The analysis focuses on constituents that met each of the following three conditions:

- Listing for impairment on the State's 303(d)/Total Maximum Daily Load (TMDL) list for the project's receiving waters
- Statistically valid EMCs
- Pollutants reasonably expected to be present in stormwater at LAX

2.1.2 OTHER STUDIES

Other studies include:

- *Draft Preliminary Design Report for LAX North Perimeter Storm Drain*, Parsons, Brinckerhoff, Quade, Douglas, Inc. (PB), December, 2001. This report contains preliminary hydrology analyses for the portion of LAX tributary to the 'North Storm Drain' which drains to the Argo Channel.
- *Revised Hydrology Report for LAX North Perimeter Storm Drain*, PB, June 2002. This report is an update to the 2001 North Storm Drain report.
- *Final On-Site Hydrology Report for LAX*, PB, October 2002. This report contains preliminary hydrology analyses for the entire LAX site except for the portion tributary to the North Storm Drain.

- *Storm Drain System Survey LAX*, CDM, September 2003. This report summarizes existing storm drain infrastructure based on field surveys.
- *Stormwater Pollution Prevention Plan (SWPPP) Stormwater Monitoring Program Plan (SWMPP) Associated with Industrial Activities for LAX*, September 2003. This SWPPP addresses the project site's compliance with the general industrial permit.
- Annual monitoring reports for LAX, Van Nuys and Ontario Airports, 1999-2003. These annual monitoring reports fulfill requirements of the general industrial permit.

The PB reports evaluate the existing drainage system based on LACDPW 50-year design storm. The analysis used the LACDPW Modified Rational Method and the pre-2002 Los Angeles County Rainfall data set and methodology. The reports recommend various options including storm drain upgrades as well as detention basins for flood control and water quality purposes. The footprints of these proposed detention basins conflicted with the project-specific footprints of Alternative D. These footprints were only for preliminary planning; however, and this Conceptual Drainage Plan identifies facility footprints that are coordinated with Alternative D layouts.

2.2 PROJECT LIMITS

The area of study is essentially the same as the area described in the *Final On-Site Hydrology Report for LAX*. This area is bound by Pershing Drive on the west, I-405 on the east, Imperial Highway on the south, and the northern airport boundary and its tributary area.

2.3 HYDROLOGIC BOUNDARIES

Drainage within the LAX project area drains to two major watersheds: Santa Monica Bay Watershed to the west and the Dominguez Channel/Los Angeles Harbor Watershed to the east, with the watershed boundary located generally along Sepulveda Boulevard.

The Santa Monica Bay watershed consists of five sub-areas: the Argo, Imperial, Pershing, Culver, and Vista Del Mar sub-areas. The Dominguez Channel watershed consists of two sub-areas, the Dominguez Channel North and Dominguez Channel South. These sub-areas drain to the Dominguez Channel, which ultimately drains to the Los Angeles Harbor. The existing characteristics for these sub-areas are further described in the following sub-section, except for the Culver and Vista Del Mar sub-areas.

The Culver sub-area includes a small portion of the northwest corner of LAX and discharges to the Santa Monica Bay at the western end of Culver Boulevard, while the Vista Del Mar sub-area includes areas west of the dune peaks located at the western end of the airport. Since the Culver and Vista Del Mar sub-areas are localized and no new significant construction projects are anticipated under the Master Plan, detailed evaluation of drainage or permanent water quality features was not conducted for these sub-areas. However, construction BMPs associated with the relocation of navigation aids within the Vista Del Mar sub-area are addressed in the Conceptual Drainage Plan.

The following sections describe the general characteristics of the drainage areas and, where appropriate, hydraulic capacities are discussed. More detailed information regarding water quality impairments and beneficial uses can be found in Section 4. A map of the drainage areas is provided in Figure 2-1 in Appendix A. Storm drain connections mentioned below are shown on Figure 3-1 in Appendix A.

2.3.1 TRIBUTARY TO THE SANTA MONICA BAY WATERSHED

The Santa Monica Bay watershed extends from Malibu to the north to El Segundo to the south. Land uses include open spaces, residential, commercial, industrial, and transportation land uses. Portions of LAX drain to the southern portion of the watershed.

For the purpose of this analysis, the Argo, Pershing, and Imperial sub-areas of the Santa Monica Bay watershed were evaluated. The following sections summarize the results of the existing condition hydrology analysis for each sub-area.

The total outfall from Pershing and Imperial is limited to 1145 cubic feet per second (cfs) as identified in the County documentation for Project No. 513, Line "C", which is the 50-year flow according to the *Final On-Site Hydrology Report for LAX.*

The existing characteristics of the Argo sub-area are summarized in Table 2-1:

TABLE 2-1
EXISTING CHARACTERISTICS
ARGO SUB-AREA

Parameter	Description
Area	2,350 acres (1,580 acres off-site)
Drainage boundaries	North Airfield, and approximately the middle third of the South Airfield. North: Northern Airport limits. Includes flows from off-site which confluence with site flows at north airfield.
Drainage pattern	General pattern is in the westerly direction. Includes a portion of the South Airfield that drains towards the North Airfield and ultimately to the west.
Outfall	Pacific Ocean
Existing capacity limitations	3,335 cfs based on full-flow capacity of 11'-3"W x 13'-6"H Reinforced Concrete Box (RCB) downstream of Argo Channel outlet (Los Angeles County Flood Control Project 5241)
Downstream controls	RCB outlet to Pacific Ocean (Los Angeles County Flood Control Project 5241)

The runoff from the South Airfield portion of the Argo sub-area flows through the Caltrans storm drain at the Century Boulevard/Sepulveda Boulevard interchange. City of Los Angeles, Department of Airports Drawing No. 6616 references this storm drain as an 11'W x 4.5'H reinforced concrete box (RCB). The slope was calculated using the elevations from as-built plans upstream and downstream of the Caltrans RCB and scaling the distance from the topographic map. This storm drain is a link in the system that conveys flow from a portion of the South Airfield to the Argo Channel, located north of the North Airfield.

The Argo Channel also accepts flow from the offsite area north of Manchester Boulevard and Sepulveda Boulevard. The hydrologic results of this area were accepted from the *Final On-Site Hydrology Report for LAX* without modification.

The Imperial sub-area includes the LAX central terminal area and ancillary areas tributary to an 8'W x10'H RCB described as the Imperial Storm Drain in *Final On-Site Hydrology Report for LAX*. The existing characteristics of the Imperial sub-area are summarized in Table 2-2.

TABLE 2-2
EXISTING CHARACTERISTICS
IMPERIAL SUB-AREA

Parameter	Description
Area	460 acres
Drainage boundaries	Central Terminal Area and western third of South Airfield.
Drainage pattern	Westerly and southwesterly
Outfall	Pacific Ocean
Existing capacity limitations	595 cfs in Imperial Storm Drain (portion of 50-year flow of 1145 cfs allowed per Project No. 513, Line "C")
Downstream control	96" RCP connection to Project No. 513, Line "C"

The Pershing sub-area is the area tributary to the Pershing Drive Storm Drain system, as shown on City of Los Angeles storm drain plans D-23663, and the LAX storm drain on World Way West. Flows in excess of the 550 cfs designed allowable discharge are stored in a detention basin located on the northwest corner of Imperial Highway/Pershing Drive. The existing characteristics of the Pershing sub-area are summarized in Table 2-3.

TABLE 2-3
EXISTING CHARACTERISTICS
PERSHING SUB-AREA

Parameter	Description
Area	770 acres
Drainage boundaries	Airport area west of Tom Bradley International Terminal (TBIT), between North and South Airfields, to Pershing Drive
Drainage pattern	Westerly
Outfall	Pacific Ocean
Existing capacity limitations	550 cfs in Pershing Drive Storm Drain (portion of 50-year flow of 1145 cfs allowed per Project No. 513, Line "C")
Downstream control	90" RCP connection to Project No. 513, Line "C"

As described in Section 2.4, both the City's Pershing Drive Storm Drain and the LAX Imperial Storm Drain have low flow diversion pipes to a basin and oil/water separator system.

2.3.2 TRIBUTARY TO DOMINGUEZ CHANNEL/LOS ANGELES HARBOR WATERSHED

The Dominguez Channel watershed is comprised of approximately 110 square miles of land in the southern portion of Los Angeles County. The Dominguez Channel extends from LAX to the Los Angeles Harbor and drains large, if not all, portions of the cities of Inglewood, Hawthorne, El Segundo, Gardena, Lawndale, Redondo Beach, Torrance, Carson and Los Angeles. The remaining land areas within the watershed drain to several debris basins and lakes or directly to the Los Angeles and Long Beach Harbors.

The drainage area tributary to the Dominguez Channel watershed consists of two sub-areas, for this analysis. Table 2-4 and Table 2-5 summarize the results of the existing condition hydrology analysis for the Dominguez Channel North and Dominguez Channel South sub-areas. The physical capacities of the conduits are not listed because the County has an established discharge rate. In that situation, the "Allowable" discharges must be used. The actual conduit capacity is higher in both cases.

TABLE 2-4
EXISTING CHARACTERISTICS
DOMINGUEZ CHANNEL NORTH SUB-AREA

Parameter	Description
Area	1,100 acres
Drainage boundaries	Manchester Boulevard to midway between Airport and Aviation, cross-country to Arbor Vitae Street, easterly to La Cienega Boulevard, South to I-105, west to Aviation Boulevard, north to Aviation Boulevard /Century Boulevard Intersection, west to Century Boulevards /Sepulveda Boulevard Intersection, north to Manchester Boulevard/La Tijera Boulevard Intersection.
Drainage pattern	East and South
Outfall	Dominguez Channel (Los Angeles Harbor)
Existing capacity limitations	1080 cfs (Q10, Allowable) in 15'-3"Wx9'-6"H RCB (LACFCD Proj.13, Line "B") in La Cienega between 104th and 111th.
Downstream control	14'-9"Wx14'H RCB outlet into Dominguez Channel at Inglewood Avenue

TABLE 2-5
EXISTING CHARACTERISTICS
DOMINGUEZ CHANNEL SOUTH SUB-AREA

Parameter	Description
Area	620 acres
Drainage boundaries	Century Boulevard, Aviation Boulevard, Imperial Highway, Sepulveda Boulevard
Drainage pattern	East
Outfall	Dominguez Channel (Los Angeles Harbor)
Existing capacity limitations	600 cfs (Q10 Allowable) in 8'x8' RCB (LACFCD Dominguez Channel Concrete Conduit) at Aviation Blvd/111th Street
Downstream control	8'x10'-3/4" RCB outlet into Dominguez Channel at Inglewood Avenue.

According to the *Final On-Site Hydrology Report for LAX*, Section 5.0, a "review of record calculations for the storm drain outfalls to Dominguez Channel indicate these storm drains were originally designed for 10-year frequency runoff." The *Final On-Site Hydrology Report for LAX* further determined that the "calculated [50-year] Hydraulic Grade Line (HGL) is above the existing ground surface at La Cienega Boulevard for the Dominguez Channel Concrete Conduit and at La Cienega Boulevard/West 111th Street for Project No. 13.

2.4 WATER QUALITY

According to *Final On-Site Hydrology Report for LAX*, both the Pershing Drive Storm Drain and the Imperial Storm Drain have low-flow diversion pipes to a basin and oil/water separator system, which send the first flush portion of a storm to the oil/water separator for treatment. The outfall of the separator system is the City of Los Angeles sewer system. This system is considered a very effective water quality measure for its tributary areas.

Existing water quality conditions were previously assessed by pollutant load models conducted as part of the CEQA/NEPA documentation for the LAX Master Plan. Updated model results based on the proposed BMPs are presented in Appendix C.

SECTION 3.0
HYDROLOGY AND DRAINAGE CAPACITY ANALYSIS

3.1 HYDROLOGIC MODELING

Hydrologic analyses leveraged data from previous studies to provide a more refined analysis of existing and proposed hydrologic conditions for the LAX Master Plan. Hydrology was modeled using the updated LACDPW Modified Rational (MORA) Method, in accordance with the LACDPW Hydrology/Sedimentation Manual. The city allows use of this method for design of drainage and flood control facilities. This is one of the basic methods used by LACDPW to convert rainfall to runoff. LACDPW modified the classic and simplified Rational Formula method to account for variability in the factors used for the classic rational formula and produce a hydrograph of flow.

The MORA file prepared by Parsons Brinkerhoff in their *Final On-Site Hydrology Report for LAX*, October 18, 2002, was modified with a number of refinements including those described in the LACDPW Addendum to the 1991 Hydrology/Sedimentation Manual, dated June 2002. Table 3-1 provides a summary of the refinements.

TABLE 3-1
REFINEMENTS TO *FINAL ON-SITE HYDROLOGY REPORT FOR LAX* HYDROLOGIC METHODOLOGY

Parameters	Updated Methodology
Rainfall	LACDPW Hydrology/Sedimentation Appendix, Map 1-H1-7 (Venice) converted to Rainfall Mass Curve Number as described in LACDPW Addendum 2002.
Storm Event	Consider protection for 10- and 25-year storm events in addition to 50-year
Percent Imperviousness	LACDPW Addendum 2002, Appendix "E" and supplemented by information on existing and proposed land use. See Figure 3.1 in the Appendix.
Time of Concentration, Tc	Re-evaluated where appropriate using LACDPW Addendum 2002 Tc Regression TC Method
Sub-area Delineations	Based on more refined site plan
Soil data	LADPW Hydrology/Sedimentation Appendix Map 1-H1-7 (Venice) Sub-areas were assigned individual soil classification numbers and percent impervious for this study. In the *Final On-Site Hydrology Report for LAX* , all sub-areas were assigned a Soil Classification number of 010.

Three sub-areas were compared for each parameter individually. The resulting changes on an individual sub-area basis were compared to the flows in the Parsons Brinkerhoff study. These refinements resulted in modified baseline conditions. The results of the sensitivity analysis showing the contributory effect on flow of each parameter are summarized in Table 3-2.

TABLE 3-2
EFFECT OF HYDROLOGIC METHODOLOGY REFINEMENTS

Parameters	Contributory Effect on Flows
Rainfall	36% decrease
Time of Concentration, Tc	8% decrease
Soil data	2% increase

3.2 DESIGN CRITERIA

The *Final On-Site Hydrology Report for LAX* applied the 50-year frequency storm to the entire sub-area. For this Conceptual Drainage Plan, FAA, City, and County criteria were applied as described below.

According to the *Federal Aviation Administration Advisory Circular No. 150/5320-5B (07/01/70)*, Chapter 3, Section 4, Paragraph c(2), 5-year storms are generally used for airport drainage design. A stricter criteria is provided by the *City of Los Angeles Department of Public Works, Bureau of Engineering Manual – Part G, Storm Drain Design*, which states that storm drains are designed for 10-year storm frequency for areas without sumps.

One area of the site fulfills the Los Angeles County criteria for sumps. This area is located at the proposed West Satellite Concourse site. Since this area will be reconstructed, it is assumed that the sump condition can be removed with the construction of the new West Satellite Terminal.

Because the site drains to two watersheds with outfall capacity limits, as described in Section 2.3, the analysis of the existing storm drains and recommendations for future storm drains were proportioned to the capacity of the existing outfall limitations. This is consistent with Section G 222 in the *City of Los Angeles Department of Public Works, Bureau of Engineering Manual – Part G, Storm Drain Design*, which states:

> When new drains are to empty into existing drainage systems which have capacities less than that required for the frequencies indicated above, the design should be based upon the above criteria only if the existing drains are to be relieved in the near future. Otherwise, the new drains should be proportioned to the capacity of the existing drain.

The recommendations in Section 5 are designed to achieve a minimum 10-year capacity below ground on the airport property, while not exceeding the capacities of the outfalls described in Section 2.3. Under this approach, existing on-airport drainage facilities that have the capacity to convey at least the 10-year storm event flow based on the future Master Plan project conditions would not need upgrading. Existing facilities that could not convey at least a 10-year flow would be replaced or upgraded to convey at least the 10-year storm event flow to prevent any on-airport flooding under this condition.

Within the Argo, Imperial, and Pershing sub-areas, the existing off-site outfalls have the capacities to accept flows up to the 50-year storm event from the airport. Therefore, on-airport facilities designed to accommodate lesser events (e.g., 10-year, 25-year) would limit off-site flows and not exceed the capacity of the existing outfalls.

Within the Dominguez Channel watershed, there are capacity limitations at the 10-year frequency storm event in off-site Los Angeles County Flood Control District facilities, as noted in Section 2. Master Plan Commitment HWQ-1 requires the Los Angeles County Department of Public Works and/or the City of Los Angeles Department of Public Works, Bureau of Engineering to upgrade required drainage facilities as necessary, in order to accommodate current and future projects within the watershed. This measure will address potential cumulative drainage impacts resulting from implementation of the Master Plan projects in conjunction with other development.

3.3 CAPACITY ANALYSIS

3.3.1 STORM DRAINS

The results of the refined MORA model for Alternative D were used to categorize the existing storm drain capacities as 50-year (or greater), 25-year, 10-year, or less than 10-year capacity. Capacities for existing storm drains were calculated for full-flow using Manning's Equation with an "n" value of 0.013 and pipe slopes as provided in the model, and corroborated in the as-built plans.

New time of concentrations (Tc's) in the refined MORA model differed from the results of the old model, which calculated Tc's using Appendix N of the LACDPW Hydrology/Sedimentation Manual. As a factor of safety, a reduction of 10% in the full-flow capacity numbers was used as a basis for storm drain capacity. For example, if full-flow calculations determined the pipe capacity to be 100 cfs, then the pipe was assigned a full-flow capacity of 90 cfs (100 cfs – 10 cfs).

The existing storm drain capacity evaluations are based upon the following two ratings: greater or equal to 10-year, and less than 10-year.

Before resorting to replacing pipes, opportunities to channel flow to oversized systems were investigated in order to relieve undersized ones were evaluated. One area where re-routing is possible is in the Dominguez Channel North sub-area. In the existing condition, flows from Lot C are carried by a storm drain in Century Boulevard (nodes 1A, 2A, 6AB, 11AB, 12B, 13B, 14B – See Figure 3-2 in Appendix A), but the Century Boulevard storm drain is undersized. In the proposed condition, flows from Lot C are re-routed to the 98th Street Storm Drain (nodes 1A, 2A, 6AB, 11AB, 15A, 17A, 18A - See Figure 3-2). The Century Boulevard Storm drain conveys flows starting with node 12B in the future condition.

Table 3-3 below summarizes the existing drainage pipe size deficiencies for the various sub-areas. Storm drains that convey less than the 10-year runoff are considered deficient unless otherwise noted. A map of these results is shown in Figure 3-1 in Appendix A. It is recommended that the storm drains in Table 3-3 be replaced with larger capacity drains in order to provide protection for a minimum of 10-year storm event. It should be noted that this analysis considered full-flow conditions.

TABLE 3-3
SUMMARY OF EXISTING DRAINAGE DEFICIENCIES

Sub-Area	Description of Deficiencies
Argo	SD south of Existing Runway 6R-24L
Imperial	None
Pershing	SD west of TBIT (To be demolished for Phase 2 Terminal Improvements)
Dominguez North	SD in W 96th from Parking Lot C to Airport Blvd
Dominguez South	Maintenance area and Runway 7L-25R Storm Drains

3.3.2 ARGO CHANNEL

For the purposes of evaluating the capacity of the Argo Channel for flood control flows, as well as a potential ability to serve as a water quality BMP, the capacity of the Argo Channel was estimated using normal depth calculations of sections taken from the aerial topography and Manning's equation. The calculations were done at three locations, the results of which are summarized in Table 3-4.

TABLE 3-4
ARGO CHANNEL CAPACITIES

Location	Downstream	Midstream	Upstream
Approximate Depth (ft.)	20	25	15
Approximate Bottom Width (ft)	10	15	10
Side Slope (H:V)	2:1	2:1	2:1
Channel Slope (ft/ft)	.0003	.0001	.0009
Manning's n	.030	.030	.030
Calculated Capacity (cfs)	4,000	4,400	3,500

There is an apparent highpoint in the Argo Channel such that the upper one-third of the channel does not outlet for minor storm events; instead, flows from dry-weather runoff and minor storm events percolate into the sandy soils.

3.4 HYDROLOGY MODEL RESULTS

The results of the hydrology model are shown in Tables 3-5, 3-6, 3-7, 3-8, and 3-9. Each sub-basin has its own table. The Hydrology Map is in Appendix A as Figure 3-2. These results are for the model of the proposed conditions under Alternative D.

The nodes and subareas correspond to the hydrology maps that are in the appendix. Existing facilities that are undersized for Q10 are highlighted, and the proposed pipe or box culvert size is shown.

3.5 PROPOSED STORM DRAINS

The proposed storm drains listed in Table 3-10, in conjunction with the existing storm drain system, will provide a minimum of 10-year flood protection below ground for the site. The proposed system locations are shown on Figure 3-3 in Appendix A, referenced by the Label ID shown in the table.

3.6 APPLICABILITY TO PROJECT-SPECIFIC ADVANCE PLANNING

The proposed storm drain improvements represent a conceptual drainage plan that will provide the required level of protection from flooding within the airport property following the development of Alternative D projects. The plan provides the basis by which detailed drainage improvement plans shall be designed in conjunction with site engineering specific to each Master Plan project. Detailed project designs shall provide equivalent or better protection.

Conceptual Drainage Plan
Hydrology

Psomas

1LAX0303.50 T. 08A2L

Existing Storm Drain Capacity and Proposed Storm Drain Design Assessment

TABLE 3-5

Reduction Factor= 90%

Argo Watershed

*Full Flow Capacity after node listing in segment

Argo Drainage System

		Existing Conveyance Data						Q Ex. Capacity*		Proposed Condition				
MORA ID	**Conveyance**	**Height (ft)**	**Side Slope**	**Diameter/ Width (ft)**	**Diameter/ Width (in)**	**Length (ft)**	**Slope (ft/ ft)**	**PSO**	**90%PSO**	**Q50**	**Q25**	**Q10**	**Proposed Diameter/ Width (ft)**	**Proposed Qcap (cfs)**
5A	Natural Valley			0	0	1050	0.00286	0.0	0.0	58	48	38		
10A	RCB	4.5		4.25	51	440	0.01	279.2	251.3	109	92	71		
20A	RCB	4.5		5.5	66	320	0.01	404.1	363.7	142	120	93		
30A	RCB	4.5		5.5	66	325	0.01	404.1	363.7	178	151	116		
40A	RCB	4.5		5.75	69	315	0.00077	119.4	107.4	219	187	143	6.75	160.9
41A	RCB	4.5		6.25	75	200	0.001	152.9	137.6	219	186	143	6.75	183.3
42A	RCB	4.5		8.75	105	250	0.00025	121.0	108.9	219	186	143	10	261.5
43A	RCB	4.5		11	132	830	0.00025	163.7	147.3	219	186	143		
45A	RCB	4.5		11	132	1215	0.00035	193.7	174.3	221	188	146		
48A	DBL RCB	4.5		8.5	102	800	0.0002	208.3	187.5	217	185	143		
50A	DBL RCB	5.0		8.5	102	960	0.0002	239.2	215.3	221	188	146		
70B	Pipe			2.75	33	935	0.00297	28.8	25.9	29	24	18		
75B	Pipe			2.75	33	575	0.01048	54.1	48.7	29	24	18		
80B	Pipe			3.25	39	635	0.01	82.6	74.3	60	51	40		
100AB	RCB	5.0		10	120	415	0.00309	585.2	526.7	246	210	164		
120B	Pipe			2.5	30	1465	0.003	22.5	20.2	21	18	14		
130B	Pipe			4.83	57.96	880	0.005	167.9	151.1	46	39	30		
140B	Pipe			4.83	57.96	135	0.005	167.9	151.1	67	57	44		
150AB	RCB	5.0		10	120	725	0.00309	585.2	526.7	301	259	202		
165B	Street			0	0	1930	0.005	0.0	0.0	29	24	19		
170B	Pipe			5.25	63	1965	0.005	209.7	188.8	67	56	44		
180AB	DBL RCB	10.0		8	96	10	0.00309	2047.1	1842.3	362	310	243		
182B	Pipe			3.25	39	1025	0.0076	72.0	64.8	23	19	15		
183B	Pipe			3.25	39	870	0.00876	77.3	69.6	47	39	30		
185AB	DBL RCB	10.0		8	96	570	0.00309	2047.1	1842.3	408	348	273		
190A	Trap. Channel	20.0	2.0	10	120	55	0.01	23077.2	20769.4	457	389	305		
200A	Trap. Channel	20.0	2.0	10	120	98	0.00068	6017.8	5416.0	489	416	325		
220B	Pipe			3.25	39	328	0.00325	47.1	42.4	42	33	23		
230B	Pipe			3	36	620	0.01421	79.5	71.6	79	63	44		
240B	Pipe			4.25	51	1270	0.00521	121.9	109.7	114	92	64		
250B	Pipe			4.75	57	1206	0.00424	147.9	133.1	154	123	88		
260B	Pipe			4	48	320	0.0172	188.4	169.5	184	149	107		
280C	Pipe			2.5	30	888	0.01625	52.3	47.1	46	38	28		
290C	Pipe			3.25	39	1155	0.00956	80.7	72.7	75	62	45		
310BC	Pipe			5.5	66	543	0.00752	291.2	262.1	278	227	165		
320B	Pipe			6.75	81	2000	0.0028	306.8	276.1	301	246	180		

Conceptual Drainage Plan

Hydrology

Psomas

1LAX0303.50 T. 08A2L

Existing Storm Drain Capacity and Proposed Storm Drain Design Assessment

TABLE 3-5

Reduction Factor= 90%

Argo Watershed

*Full Flow Capacity after node listing in segment

Argo Drainage System

		Existing Conveyance Data				Length (ft)	Slope (ft/ft)	Q Ex. Capacity*		Proposed Condition			Proposed Diameter/ Width (ft)	Proposed Qcap (cfs)
MORA ID	Conveyance	Height (ft)	Side Slope	Diameter/ Width (ft)	Diameter/ Width (in)			PSO	90%PSO	Q50	Q25	Q10		
330B	Pipe			8	96	850	0.0008	258.0	232.2	303	249	183		
360D	Pipe			2.25	27	1394	0.01192	33.8	30.4	29	24	17		
370D	Pipe			3	36	1400	0.01087	69.5	62.6	73	59	42		
380D	Pipe			3.5	42	811	0.01336	116.3	104.7	113	92	68		
390D	Pipe			3.75	45	1500	0.012	132.5	119.2	137	112	83		
410BD	RCB	6.0		12.5	150	179	0.00068	471.3	424.2	490	408	305		
420AB	Trap. Channel	20.0	2.0	15	180	1785	0.00031	4609.4	4148.5	968	821	628		
440B	Pipe			3.75	45	2000	0.00371	73.7	66.3	74	60	43		
470C	Pipe			2	24	1100	0.0158	28.4	25.6	14	11	8		
480BC	Pipe			4.25	51	400	0.00775	148.6	133.8	140	114	81		
490B	Pipe			5.25	63	449	0.0035	175.5	157.9	166	135	97		
500B	Pipe			5.25	63	1620	0.00399	187.4	168.6	182	148	106		
510B	Pipe			4.5	54	455	0.0112	208.1	187.3	212	172	124		
520B	Pipe			3.75	45	75	0.03104	213.1	191.8	217	177	129		
530AB	Trap. Channel	20.0	2.0	10	120	755	0.00068	6017.8	5416.0	1066	904	699		
540A	Trap. Channel	20.0	2.0	11	132	951	0.00068	6178.4	5560.5	1107	937	723		
550A	Trap. Channel	20.0	2.0	12	144	385	0.00068	6339.6	5705.6	1129	951	731		
570B	Pipe			2.75	33	601	0.007	44.2	39.8	42	35	26		
580B	Pipe			4.5	54	2000	0.0023	94.3	84.9	93	77	58		
590B	Pipe			3.75	45	842	0.01154	129.9	116.9	125	103	78		
600AB	Trap. Channel	20.0	2.0	13	156	597	0.00068	6501.4	5851.3	1188	1003	772		
610A	Trap. Channel	20.0	2.0	16	192	164	0.00068	6990.4	6291.4	1189	1003	773		
620A	Trap. Channel	20.0	2.0	16	192	855	0.00068	6990.4	6291.4	1193	1006	775		
630A	Trap. Channel	20.0	2.0	15	180	325	0.00068	6826.9	6144.2	1203	1013	779		
640A	Trap. Channel	20.0	2.0	14	168	290	0.00068	6663.8	5997.5	1205	1015	781		
660B	Pipe			2.75	33	1090	0.01992	74.6	67.2	67	56	42		
680C	Pipe			2.75	33	590	0.0146	63.9	57.5	62	50	39		
690BC	Pipe			3.75	45	337	0.0119	131.9	118.7	129	105	81		
710A	Trap. Channel	20.0	2.0	14.5	174	558	0.00068	6745.3	6070.8	1241	1045	805		
720A	Trap. Channel	20.0	2.0	14.5	174	1300	0.00068	6745.3	6070.8	1242	1047	806		
730A	Trap. Channel	20.0	2.0	14	168	180	0.00068	6663.8	5997.5	1239	1044	804		
740A	Trap. Channel	20.0	2.0	14	168	1181	0.00068	6663.8	5997.5	1242	1047	807		
750A	Trap. Channel	20.0	2.0	14	168	450	0.00068	6663.8	5997.5	1242	1046	806		
760A	Trap. Channel	20.0	2.0	14	168	200	0.00068	6663.8	5997.5	1245	1049	809		
765A	RCB	13.5		11.25	135	25.5	0.12125	15157.9	13642.1	1244	1048	809		
770A	RCB	13.5		11.25	135	15	0.12125	15157.9	13642.1	1254	1057	816		

Conceptual Drainage Plan

Hydrology

Psomas

1LAX0303.50 T. 08A2L

Existing Storm Drain Capacity and Proposed Storm Drain Design Assessment

TABLE 3-5 Reduction Factor= 90%

Argo Watershed *Full Flow Capacity after node listing in segment

Argo Drainage System

		Existing Conveyance Data				Length (ft)	Slope (ft/ft)	Q Ex. Capacity*		Proposed Condition			Proposed Diameter/ Width (ft)	Proposed Qcap (cfs)
MORA ID	Conveyance	Height (ft)	Side Slope	Diameter/ Width (ft)	Diameter/ Width (in)			PSO	90%PSO	Q50	Q25	Q10		
775A	RCB	13.5		11.25	135	220	0.00587	3335.2	3001.6	1254	1057	816		
790B	Pipe			3	36	885	0.00577	50.7	45.6	52	42	31		
800B	Pipe			3.75	45	1065	0.00754	105.0	94.5	95	77	57		
810B	Pipe			3.75	45	925	0.00953	118.1	106.3	125	100	75		
820B	Pipe			4.75	57	1336	0.00464	154.7	139.3	153	124	93		
830B	Pipe			4.75	57	700	0.00629	180.1	162.1	179	144	108		
840B	Pipe			5.25	63	1300	0.00415	191.1	172.0	194	159	122		
850B	Pipe			8	96	497	0.00789	810.2	729.1	258	213	163		
870C	Pipe			3.25	39	534	0.003	45.2	40.7	43	36	27		
890D	Pipe			2.75	33	295	0.0096	51.8	46.6	47	39	29		
910CD	Pipe			4.5	54	500	0.0022	92.2	83.0	89	75	56		
920C	Pipe			4.25	51	980	0.00628	133.8	120.4	126	105	79		
930C	Pipe			5.5	66	300	0.002	150.2	135.2	160	134	102		
950BC	Pipe			8	96	353	0.00888	859.5	773.5	413	344	262		
970AB	RCB	13.5		11.25	135	300	0.00587	3335.2	3001.6	1345	1135	879		
974B	Pipe			2	24	720	0.0024	11.1	10.0	34	29	24	2.75	25.9
976B	Pipe			2.5	30	1500	0.00387	25.5	23.0	64	54	43	3.5	62.6
978B	Pipe			2.75	33	530	0.002	23.7	21.3	90	76	60	4	64.2
980B	Pipe			3	36	985	0.002	29.8	26.8	120	100	79	4.5	87.9
982B	Pipe			4	48	980	0.005	101.6	91.4	144	120	93	4.5	139
984B	Pipe			4	48	400	0.005	101.6	91.4	162	135	103	4.5	139
986B	Pipe			4	48	680	0.005	101.6	91.4	192	159	121	4.5	139
987B	Pipe			4	48	290	0.02028	204.6	184.1	191	159	121		
988B	Pipe			4	48	480	0.02028	204.6	184.1	249	206	156		
989B	RCB	13.5		11.25	135	80	0.00587	3335.2	3001.6	249	206	156		
990AB	RCB	13.5		11.25	135	940	0.00587	3335.2	3001.6	1517	1282	1018		

Conceptual Drainage Plan

Hydrology

Psomas

1LAX0303.50 T. 08A2L

Existing Storm Drain Capacity and Proposed Storm Drain Design Assessment

Table 3-6 Reduction Factor = 90%

Imperial Watershed

Imperial Drainage System

		Existing Conveyance Data			Length (ft)	Slope (ft/ ft)	Q Ex. Capacity*		Proposed Condtion			Proposed Diameter/ Width (ft)
MORA ID	Conveyance	Height (ft)	Diameter/ Width (ft)	Diameter/ Width (in)			PSO	90%PSO	Q50	Q25	Q10	
1A	Pipe		4.5	54	10	0.00174	82.0	73.8	49	43	34	
2A	Pipe		7	84	269	0.00172	264.9	238.4	90	79	64	
3A	Pipe		7.75	93	635	0.00172	347.6	312.8	148	130	105	
5A	RCB	10	8.5	102	136	0.00079	475.5	428.0	214	188	152	
6B	Pipe		4.25	51	1775	0.00234	81.7	73.5	35	31	25	
8AB	RCB	10.0	8.5		885	0.00079	475.5	428.0	296	259	208	
9A	RCB	10.0	8.5	102	1110	0.00079	475.5	428.0	329	287	230	
10A	RCB	10.0	8.5	102	655	0.00079	475.5	428.0	355	309	247	
11A	RCB	10.0	8.5	102	710	0.00079	475.5	428.0	383	333	266	
12A	RCB	10.0	8.5		780	0.00079	475.5	428.0	408	354	283	
13B	Pipe		3.5	42	1607	0.00285	53.7	48.3	51	43	35	
14B	Pipe		3.5	42	10	0.00285	53.7	48.3	62	53	42	
15B	Pipe		3.5	42	381	0.0265	163.8	147.4	104	89	72	
17AB	RCB	10.0	8.5	102	308	0.00079	475.5	428.0	487	423	339	
18A	Pipe		7.25	87	1225	0.00796	625.9	563.3	491	427	342	
20A	Pipe		7.25	87	1702	0.00999	701.1	631.0	503	437	350	

Conceptual Drainage Plan

Hydrology

Psomas

1LAX0303.50 T. 08A2L

Existing Storm Drain Capacity and Proposed Storm Drain Design Assessment

Table 3-7

Reduction Factor= 90%

Pershing Watershed

*Full Flow Capacity after node listing in segment

Pershing Drainage System

MORA ID	Conveyance	Existing Conveyance Data: Height (ft)	Existing Conveyance Data: Diameter/ Width (ft)	Existing Conveyance Data: Diameter/ Width (in)	Length (ft)	Slope (ft/ ft)	Q Ex. Capacity*: PSO	Q Ex. Capacity*: 90%PSO	Proposed Condition: Q50	Proposed Condition: Q25	Proposed Condition: Q10	Proposed Diameter/ Width (ft)	Proposed Qcap (cfs)
20A	Pipe		4.25	51	185	0.0036	101.3	91.2	52	44	33		
30B	Pipe		2.5	30	1240	0.003	22.5	20.2	66	55	42	4	78.7
40B	Pipe		3	36	285	0.004	42.2	38.0	107	90	70	4.5	124.4
70AB	Pipe		5	60	570	0.0036	156.3	140.6	159	134	103		
80A	Pipe		5	60	300	0.0036	156.3	140.6	179	151	117		
90A	Pipe		6	72	90	0.0036	254.1	228.7	206	174	133		
100A	Pipe		6	72	350	0.0036	254.1	228.7	244	206	158		
110A	Pipe		6	72	490	0.0044	280.9	252.8	268	226	173		
120A	Pipe		6	72	455	0.0052	305.4	274.9	297	252	195		
130A	Pipe		6	72	190	0.0052	305.4	274.9	326	277	214		
140A	Pipe		7.25	87	765	0.01205	770.1	693.0	367	311	240		
160A	RCB	8.5	7.08	84.96	1000	0.00738	1088.3	979.5	409	348	269		
180A	RCB	8.5	7.08	84.96	10	0.00738	1092.9	983.6	454	387	299		
190B	Pipe		3	36	400	0.005	47.2	42.4	36	31	23		
200B	Pipe		3.5	42	378	0.005	71.1	64.0	60	50	37		
210B	Pipe		4.5	54	10	0.005	139.1	125.1	89	75	58		
220B	Pipe		4.5	54	278	0.033	357.2	321.5	105	89	69		
240AB	RCB	8.5	7.08	84.96	795	0.00738	1088.3	979.5	560	478	370		
250A	RCB	8.5	7.08	84.96	10	0.00738	1088.3	979.5	560	479	371		
270B	Pipe		3.5	42	1161	0.00362	60.5	54.5	24	19	13		
280B	Pipe		5	60	800	0.01675	337.1	303.4	45	36	25		
300AB	RCB	11.0	9.2	110.4	1377	0.00055	594.5	535.0	611	522	402		
310A	RCB	11.0	9.2	110.4	10	0.00055	594.5	535.0	602	514	398		
320B	Pipe		3.75	45	1491	0.00767	105.9	95.3	44	36	26		
330B	Pipe		4	48	111	0.014	170.0	153.0	64	52	39		
340B	Pipe		4.5	54	1900	0.0117	212.7	191.4	109	91	68		
370AB	RCB	11.0	9.2	110.4	593	0.00228	1210.3	1089.3	751	641	497		
380A	RCB	10.0	8.4	100.8	1430	0.00237	963.2	866.9	754	644	499		

Conceptual Drainage Plan

Hydrology

Psomas

1LAX0303.50 T. 08A2L

Existing Storm Drain Capacity and Proposed Storm Drain Design Assessment

Table 3-8

Dominguez Channel Watershed

Northfield Drainage System

Reduction Factor= 90%

*Full Flow Capacity after node listing in segment

		Existing Conveyance Data			Length (ft)	Slope (ft/ft)	Q Ex. Capacity*		Proposed Condition			Proposed Diameter/ Width (ft)	Proposed Qcap (cfs)
MORA ID	Conveyance	Height (ft)	Diameter/ Width (ft)	Diameter/ Width (in)			PSO	90%PSO	Q50	Q25	Q10		
1A	Pipe		3	36	327	0.00125	23.6	21.2	54	48	39	4	50.8
2A	Pipe		3	36	293	0.00125	23.6	21.2	96	82	67	4.5	69.5
3B	Nat. Valley				1263	0.00404			45	34	21		
4B	Street		60	720	1379	0.00058			101	82	58		
6AB	Pipe		4.5	54	1000	0.00125	69.5	62.6	184	155	120	6	149.7
8B	Street		80	960	970	0.00237			38	31	21		
9B	Street		80	960	1392	0.00266			69	58	42		
11AB	Pipe		6.25	75	460	0.00174	197.0	177.3	276	234	181	6.5	218.7
12B	Pipe		6.25	75	692	0.00174	197.0	177.3	54	48	39		
13B	Pipe		6.5	78	1766	0.00127	186.8	168.2	92	80	66		
15A	Pipe		7.5	90	639	0.00141	288.3	259.5	281	236	183		
17A	Pipe		7.75	93	1094	0.00147	321.3	289.2	278	236	184		
18A	Pipe		8	96	731	0.001	288.4	259.6	281	238	186		
20AB	Pipe		9	108	369	0.00125	441.5	397.3	390	335	265		
23B	Street		36	432	849	0.00259			50	43	34		
24B	Pipe		4.25	51	422	0.00401	106.9	96.2	79	68	55		
25B	Pipe		5	60	221	0.00206	118.2	106.4	90	77	62		
26B	Pipe		5.5	66	666	0.00206	152.4	137.2	133	114	91		
28B	Pipe		7.25	87	717	0.00121	147.3	132.6	164	140	111		
31C	Pipe		3.5	42	1253	0.00635	80.2	72.2	16	13	10		
34BC	Pipe		8	96	594	0.003	499.6	449.6	215	184	146		
35B	Pipe		9	108	366	0.00063	313.4	282.1	232	198	157		
37C	Pipe		4	48	238	0.00184	61.6	55.5	55	49	40		
40BC	Pipe		9	108	619	0.00063	394.9	355.4	288	247	196		
42AB	RCB	11.5	10	120	1572	0.0011	840	756.0	666	569	458		
44A	RCB	11.5	10	120	10	0.0011	840	756.0	667	574	462		
45B	Street		36	432	971	0.00021			79	70	57		
47AB	RCB	11.5	10	120	455	0.0017	1044.3	939.9	766	664	538		
49A	RCB	10	11.5	138	358	0.0017	1044.3	939.9	769	667	539		
50A	RCB	10	11.75	141	1191	0.0029	1402.9	1262.6	772	670	541		
51A	RCB	9.5	13.25	159	1409	0.0014	1061	954.9	819	709	565		
52A	RCB	9.5	15.25	183	700	0.0007	896.5	806.9	864	743	585		
53A	RCB	9.5	15.25	183	628	0.0007	896.5	806.9	894	766	600		
55B	Pipe		4	48	1433	0.00234	69.5	62.5	72	60	46		
57AB	RCB	10	14.5	174	617	0.0007	903.9	813.5	944	813	646		

Conceptual Drainage Plan

Hydrology

Psomas

1LAX0303.50 T. 08A2L

Existing Storm Drain Capacity and Proposed Storm Drain Design Assessment

Table 3-8

Reduction Factor= 90%

Dominguez Channel Watershed

*Full Flow Capacity after node listing in segment

Northfield Drainage System

		Existing Conveyance Data			Length (ft)	Slope (ft/ft)	Q Ex. Capacity*		Proposed Condition			Proposed Diameter/ Width (ft)	Proposed Qcap (cfs)
MORA ID	Conveyance	Height (ft)	Diameter/ Width (ft)	Diameter/ Width (in)			PSO	90%PSO	Q50	Q25	Q10		
59A	RCB	11.5	12.5	150	550	0.0007	903.3	813.0	946	816	647		
60A	RCB	11	13	156	615	0.0007	895.4	805.9	952	821	652		
61A	RCB	10.5	13.5	162	835	0.007	2790.4	2511.4	960	829	658		
62A	RCB	10	13.25	159	1080	0.00415	1204.8	1084.3	960	828	658		
64A	RCB	9.5	14	168	600	0.0013	1096.6	986.9	959	828	657		
65A	RCB	9	14.75	177	55	0.0013	1085.5	977.0	958	827	657		

Conceptual Drainage Plan

Hydrology

Psomas

1LAX0303.50 T. 08A2L

Existing Storm Drain Capacity and Proposed Storm Drain Design Assessment

Table 3-9 Reduction Factor= 90%

Dominguez Channel Watershed *Full Flow Capacity after node listing in segment

Southfield Drainage System

		Existing Conveyance Data			Length (ft)	Slope (ft/ft)	Q Ex. Capacity*		Proposed Condition			Proposed Diameter/ Width (ft)	Proposed Qcap (cfs)
MORA ID	Conveyance	Height (ft)	Diameter/ Width (ft)	Diameter/ Width (in)			PSO	90%PSO	Q50	Q25	Q10		
1A	RCB	4.00	6	72	790	0.00102	125.5	112.9	50	44	36		
2A	RCB	3.50	12	144	1280	0.001	186.0	167.4	50	43	35		
3A	RCB	3.50	12	144	1570	0.001	186.0	167.4	91	80	64		
4A	Trap. Channel	3.50	5	60	550	0.00105	249.7	224.7	89	78	63		
6A	Trap. Channel	3.50	6	72	590	0.00147	327.2	294.4	89	77	62		
7A	Trap. Channel	3.50	6	72	10	0.0022	400.2	360.2	119	104	83		
14A	Trap. Channel		6	72	1710	0.00159	473.0	425.7	149	129	104		
19B	Pipe		2	24	240	0.0035	13.4	12.0	27	23	17	2.25	18.3
21B	RCB	2.00	2.5	30	270	0.002	21.5	19.3	57	48	36	3.75	54.1
22B	Pipe		3	36	1250	0.00171	27.6	24.8	56	47	36	3.5	41.6
26B	Pipe		1.75	21	280	0.0056	11.9	10.7	19	16	12	2	16.9
27B	Pipe		1.75	21	500	0.0056	11.9	10.7	48	40	29	2.5	30.7
28B	Pipe		1.75	21	533	0.0079	14.1	12.7	48	40	29	2.5	36.5
31C	RCB	2.75	3	36	410	0.00171	27.6	24.8	34	29	24		
33D	RCB	2.00	1.5	18	342	0.0017	8.0	7.2	22	19	14	2	9.3
34D	Pipe		3	36	870	0.0017	27.5	24.8	22	19	14		
36D	RCB	2.00	1.5	18	163	0.0017	8.0	7.2	21	18	13	2	9.3
38CD	Pipe		3	36	490	0.00171	27.6	24.8	54	46	36	3.5	41.6
41BC	Pipe		3	36	490	0.00171	27.6	24.8	100	84	64	4.5	81.3
42B	Pipe		3	36	1380	0.00171	27.6	24.8	129	110	84	5	107.7
44AB	Trap. Channel		8	96	870	0.00497			386	329	257		
47A	RCB	8.00	8	96	10	0.00107	379.9	341.9	411	349	272		
48B	Pipe		3.5	42	1475	0.002	45.0	40.5	25	21	15		
49B	Pipe		4	48	1300	0.002	33.7	30.3	36	30	23		
51C	Pipe		3.5	42	1760	0.002	45.0	40.5	36	30	22		
52C	Pipe		4	48	1660	0.002	64.2	57.8	54	45	34		
54BC	Pipe		6	72	940	0.00147	162.4	146.1	117	99	75		
56C	Pipe		1.25	15	600	0.00117	2.2	2.0	42	35	27	3.5	34.4
57C	Pipe		3	36	350	0.00197	33.7	30.3	42	35	27		
58C	Pipe		3	36	900	0.00197	33.7	30.3	85	71	54	4	63.8
59C	Pipe		3	36	400	0.00197	33.7	30.3	132	111	85	4.5	87.3
61C	RCB	4.00	7	84	261	0.001	156.3	140.7	132	111	85		
62C	Pipe		6.75	81	571	0.001	183.3	165.0	163	136	104		
64BC	RCB	8.00	8	96	767	0.001	328.6	295.7	268	226	174		
67B	RCB	8.00	8	96	30	0.001	328.6	295.7	318	269	207		

Conceptual Drainage Plan

Hydrology

Psomas

1LAX0303.50 T. 08A2L

Existing Storm Drain Capacity and Proposed Storm Drain Design Assessment

Table 3-9

Reduction Factor= 90%

Dominguez Channel Watershed

*Full Flow Capacity after node listing in segment

Southfield Drainage System

		Existing Conveyance Data			Length (ft)	Slope (ft/ft)	Q Ex. Capacity*		Proposed Condition			Proposed Diameter/ Width (ft)	Proposed Qcap (cfs)
MORA ID	Conveyance	Height (ft)	Diameter/ Width (ft)	Diameter/ Width (in)			PSO	90%PSO	Q50	Q25	Q10		
68AB	RCB	8.00	8	96	1360	0.00222	547.7	492.9	728	618	478		
69A	RCB	10.06	8	96	2000	0.00222	806.2	725.6	723	614	475		
70A	RCB	10.06	8	96	2000	0.00222	806.2	725.6	712	606	470		
71A	RCB	10.06	8	96	1872	0.00222	806.2	725.6	702	598	464		

TABLE 3-10
PROPOSED STORM DRAIN IMPROVEMENTS

Sub-Area	Label ID	Replacemt/ New Line	Type	Height (Ft)	SD Width (Ft)	SD Dia. (Ft)	Approx. Length(Ft)	Cost/LF	Total Cost
Argo	AR-1	New Line	RCP	-	-	2.00	300	$240.00	$72,000
	AR-2	New Line	RCP	-	-	2.50	474	$300.00	$142,200
	AR-3	New Line	RCP	-	-	3.00	984	$350.00	$344,400
	AR-4	New Line	RCP	-	-	3.50	1,188	$420.00	$498,960
	AR-5	New Line	RCP	-	-	2.00	877	$240.00	$210,480
	AR-6	New Line	RCP	-	-	2.50	1,058	$300.00	$317,400
	AR-7	New Line	RCP	-	-	2.75	773	$330.00	$255,090
	AR-8	New Line	RCP	-	-	3.50	421	$420.00	$176,820
	AR-9	Replacement	RCB	4.5	6.75	-	315	$800.00	$252,000
	AR-10	Replacement	RCB	4.5	6.75	-	200	$800.00	$160,000
	AR-11	Replacement	RCB	4.5	10.00	-	250	$1,100.00	$275,000
	AR-12	Replacement	RCP	-	-	2.75	720	$330.00	$237,600
	AR-13	Replacement	RCP	-	-	3.50	1,500	$420.00	$630,000
	AR-14	Replacement	RCP	-	-	4.00	530	$550.00	$291,500
	AR-15	Replacement	RCP	-	-	4.50	985	$750.00	$738,750
	AR-16	Replacement	RCP	-	-	4.50	980	$750.00	$735,000
	AR-17	Replacement	RCP	-	-	4.50	400	$750.00	$300,000
	AR-18	Replacement	RCP	-	-	4.50	680	$750.00	$510,000
						Sub Total	**12,635**		**$6,147,200**
Pershing	PER-1	New Line	RCP	-	-	4.00	1,240	$550.00	$682,000
	PER-2	New Line	RCP	-	-	4.50	285	$750.00	$213,750
						Sub Total	**1,525**		**$895,750**
Dominguez	ND-1	Replacement	RCP	-	-	4.00	327	$550.00	$179,850
Channel(N)	ND-2	Replacement	RCP	-	-	4.50	293	$750.00	$219,750
	ND-3	Replacement	RCP	-	-	6.00	1,000	$1,000.00	$1,000,000
	ND-4	Replacement	RCP	-	-	6.50	460	$1,200.00	$552,000
						Sub Total	**2,080**		**$1,951,600**
Dominguez	SD-1	Replacement	RCB	2.0	2.00	-	342	$300.00	$102,600
Channel(S)	SD-2	Replacement	RCB	2.0	2.00	-	163	$300.00	$48,900
	SD-3	Replacement	RCP	-	-	3.50	490	$420.00	$205,800
	SD-4	Replacement	RCP	-	-	2.00	280	$240.00	$67,200
	SD-5	Replacement	RCP	-	-	2.50	500	$300.00	$150,000
	SD-6	Replacement	RCP	-	-	2.50	533	$300.00	$159,900
	SD-7	Replacement	RCP	-	-	4.50	490	$750.00	$367,500
	SD-8	Replacement	RCP	-	-	5.00	1,380	$850.00	$1,173,000
	SD-9	Replacement	RCP	-	-	2.25	240	$270.00	$64,800

TABLE 3-10 (CONTINUED)
PROPOSED STORM DRAIN IMPROVEMENTS

Sub-Area	Label ID	Replacemt/ New Line	Type	Height (Ft)	SD Width (Ft)	SD Dia. (Ft)	Approx. Length(Ft)	Cost/LF	Total Cost
	SD-10	Replacement	RCB	2.0	3.75	-	270	$400.00	$108,000
	SD-11	Replacement	RCP	-	-	3.50	1,250	$420.00	$525,000
	SD-12	New Line	RCP	-	-	3.00	695	$350.00	$243,250
	SD-13	New Line	RCP	-	-	3.50	760	420.00	$319,200
	SD-14	New Line	RCP	-	-	4.00	1,400	$550.00	$770,000
	SD-15	New Line	RC ARCH	-	-	3.33 x 5.42	825	$850.00	$701,250
	SD-16	New Line	RCP	-	-	5.00	400	$850.00	$340,000
	SD-17	New Line	RCP	-	-	2.50	275	$300.00	$82,500
	SD-18	New Line	RCP	-	-	2.75	700	$330.00	$231,000
	SD-19	New Line	RCP	-	-	3.50	1,590	420.00	$667,800
	SD-20	New Line	RCP	-	-	4.00	1,100	550.00	$605,000
	SD-21	New Line	Double RCB	3	2 X 4.67		315	$900.00	$283,500
	SD-22	Replacement	RCP	-	-	3.50	600	$420.00	$252,000
	SD-23	Replacement	RCP	-	-	4.00	900	$550.00	$495,000
	SD-24	Replacement	RCP	-	-	4.50	400	$750.00	$300,000
						Sub Total	**15,898**		**$8,263,200**
Imperial	IM-1	New Line	RCP	-	-	2.50	800	$300.00	$240,000
	IM-2	New Line	RCP	-	-	3.00	657	$350.00	$229,950
	IM-3	New Line	RCP	-	-	3.50	1,655	$420.00	$695,100
	IM-4	New Line	RCP	-	-	2.00	400	$240.00	$96,000
	IM-5	New Line	RCP	-	-	2.50	751	$300.00	$225,300
	IM-6	New Line	RCP	-	-	3.50	1,188	$420.00	$498,960
	IM-7	New Line	RCP	-	-	4.00	495	$550.00	$272,250
						Sub Total	**5,946**		**$2,257,560**
						Total	**38,084**		**$19,515,310**

Note: Unit Prices are based on 2004 cost data

SECTION 4.0
WATER QUALITY – ULTIMATE

4.1 OBJECTIVES

Water quality impacts of the LAX Master Plan were previously assessed as part of the CEQA/NEPA documents. This assessment consisted of an investigation of existing and future regulations as well as a pollutant load analysis. The characterization of impacts due to the LAX Master Plan consisted of assessments done as part of the CEQA/NEPA documents.

The main objective of the water quality components presented in this section of the Conceptual Drainage Plan is to build upon the previous CEQA/NEPA assessments. The information provided here may be used as a link between the Master Plan EIR and further advance planning of each Master Plan project and as fulfillment of the CEQA/NEPA HWQ-1 requirements (discussed in Section 1). As such, the main objectives of the recommendations provided in this section are to present a suite of feasible Best Management Practices (BMPs) that comply with permit requirements to minimize pollutants in storm water discharges from the LAX Master Plan to the Maximum Extent Practicable (MEP) based on current project data and information and meet the HWQ-1 commitment to prevent a net increase in pollutant loads; and to present preliminary sizing and general locations of treatment BMPs within the various sub-areas and project areas. The recommendations provided here are based on:

- Review of planned Master Plan activities
- Identification of existing and pending regulations
- Examination of potential land uses
- Identification of pollutants of concern
- Identification of project constraints
- Evaluation of feasible BMPs
- Evaluation of a suite of BMPs, including project-specific, sub-regional and regional BMP options

The information presented here is intended to be used as a preliminary step in planning of the type of BMPs and as an indication of various options which may be feasible for implementation within the LAX Master Plan area and criteria for capacity sizing. Project specific requirements, such as exact number of BMPs, footprints and other details, are not discussed in this document. Specific BMP requirements will be assessed in the future phases of the project and with availability of more detailed project information. These will be documented in project-specific Standard Urban Stormwater Mitigation Plan(s) and submitted to the City of Los Angeles Bureau of Sanitization, Watershed Protection Division for review during project planning and design.

In this section of the Conceptual Drainage Plan, relevant storm water regulations affecting the development, the methodology used in evaluation of the required BMPs, as well as the recommended BMP options which may be implemented within the project limits are discussed. This section does not include a summary or overview of the CEQA/NEPA documentation and/or evaluation of project impacts which are discussed in detail in the LAX Master Plan EIS/EIR (CEQA/NEPA documents).

4.2 WATER QUALITY REGULATIONS

During future project development, appropriate storm water regulations should be considered for LAX as the Master Plan will occur over a considerable timeframe, with ultimate build-out completion estimated to be in the year 2015. These include requirements at the Federal, State and local agency levels. What follows is a description of the regulatory background as presented in the CEQA/NEPA documents and as researched further herein; however, these criteria may change over the course of the Master Plan, and as such implementation must take into account changes in regulatory criteria.

4.2.1 FEDERAL REQUIREMENTS

The National Pollutant Discharge Elimination System (NPDES) Program is mandated by federal law to regulate 'point source' discharges from municipal, construction and industrial activities. In 1987, the Clean Water Act (CWA) was amended by adding Section 402(p) that established regulations for municipal and industrial storm water discharges. Section 402, as amended, requires NPDES permits for storm water discharges from storm drain systems to waters of the United States. Storm drain systems are described as Municipal Separate Storm Sewer Systems (MS4s) and include streets, gutters, conduits, natural or artificial drains, channels and water courses or other facilities that are owned, operated, maintained or controlled by any Permittee (cities and counties) and used for the purpose of collecting, storing, transporting or disposing of storm water.

Section 402(p)(3)(B) of the CWA requires that permits for storm drain systems "(i) may be issued on a system- or jurisdiction-wide basis; (ii) shall include a requirement to effectively prohibit non-storm water discharges into the storm sewers; and (iii) shall require controls to reduce the discharge of pollutants to the maximum extent practicable (MEP), including management practices, control techniques and system, design, and engineering methods, and other such provisions as the Administrator or the State determines appropriate for the control of such pollutants."

On November 16, 1990, pursuant to Section 402(p) of the CWA, the U.S. Environmental Protection Agency (EPA) promulgated Federal regulations (40 Code of Federal Regulations (CFR) Part 122.26) establishing requirements for storm water discharges under the NPDES program. The EPA Phase I storm water regulations were directed at MS4s serving a population of 100,000 or more, including interconnected systems and storm water discharges associated with industrial activities, including construction activities. While the EPA is responsible for implementing the NPDES program at the Federal level, the State Water Resources Control Board (SWRCB) is responsible for implementing the Federal NPDES requirements within California.

When designated beneficial uses of a particular water body are being compromised by water quality, Section 303(d) of the CWA requires the States to identify and list the water body as "impaired". Once a water body has been deemed impaired, a Total Maximum Daily Load (TMDL) must be developed for each water quality constituent that compromises a beneficial use. A TMDL is an estimate of the total daily load of pollutants from point, non-point, and natural sources that a water body may receive without compromising the designated beneficial use. Once established, TMDLs are allocated among current and future dischargers for a given water body.

4.2.2 STATE AND REGIONAL REQUIREMENTS

Division 7 of the California Water Code, also known as the Porter-Cologne Water Quality Control Act, contains provisions that cover water quality protection and management for California's waters. The Porter-Cologne Act establishes the California State Water Resources Control Board (SWRCB) and the nine Regional Water Quality Control Boards (RWQCBs) as the principle state agencies responsible for the protection and, where possible, the enhancement of the quality of California's waters. The SWRCB sets statewide policy, and together with the RWQCBs, implements State and Federal laws and regulations. In California, the NPDES permit program is administered by the SWRCB, through the RWQCBs. Storm water runoff at LAX is regulated by the SWRCB and the Los Angeles RWQCB (Region 4) under the permits described in this section.

4.2.2.1 Municipal Separate Storm Sewer (MS4) Permit

Under Phase I, which started in 1990, the RWQCBs have adopted NPDES storm water permits for medium (serving between 100,000 and 250,000 people) and large (serving 250,000 people) municipalities. The City and County of Los Angeles are regulated under Phase I of the municipal NPDES program, which applies to urban areas with a population greater than 100,000. The LAX Master Plan project area falls under the waste discharge requirements as set forth by the Los Angeles RWQCB Municipal Permit (2001 MS4 Permit) Order No. 01-182, NPDES No. CAS004001 (adopted December 13, 2001). The goal of the permit is to minimize pollutants in storm water discharges to the MEP level in order to protect beneficial uses of the receiving waterbodies. Under the 2001 MS4 Permit, the following discharges are prohibited:

- Discharges from MS4s that cause or contribute to the violation of Water Quality Standards or water quality objectives.
- Discharges from MS4s of storm water, or non-storm water, for which a permittee is responsible for, that cause or contribute to a condition of nuisance.

The 2001 MS4 Permit requires all permittees to comply with the permit requirements through timely implementation of control measures and other actions to reduce pollutants in urban runoff discharges, including the incorporation of specific BMPs into the project.

Effluent limitations to control the discharge of pollutants in receiving waters are generally expressed in numerical form. However, the EPA recommends that for NPDES-regulated municipal storm water discharges, effluent limitations should be expressed as BMPs or other similar requirements, rather than as numeric effluent limits. This approach involves implementing source control and treatment control BMPs that reduce the discharge of pollutants in storm water to the maximum extent practicable (MEP).

The term MEP is used frequently and warrants discussion of what it constitutes. The 2001 MS4 Permit states " the State Board Office of Chief Counsel has issued a memorandum interpreting the meaning of MEP to include technical feasibility, cost, and benefit derived with the burden being on the municipality to demonstrate compliance (dated February 11, 1993)." The definition of MEP provided in the glossary section of the 2001 MS4 Permit is "the standard for implementation of storm water management programs to reduce pollutants in storm water." The 2001 MS4 Permit guidelines are intended to ensure combinations of source control and treatment control BMPs are implemented that will provide storm water runoff treatment in order to protect the quality of receiving waters.

4.2.2.2 Basin Plan

The Los Angeles RWQCB has developed the *Water Quality Control Plan – Los Angeles Region*, otherwise known as the Basin Plan, which was most recently updated comprehensively in 1994. Among other requirements, the Basin Plan identifies beneficial uses for major waterbodies in the region. These beneficial uses are in turn protected by programs that maintain or enhance water quality. Beneficial uses for the project's major receiving waters, Dominguez Channel and Santa Monica Bay, were included in the CEQA/NEPA documentation and are presented in Table 4-1. The status of the beneficial uses may change as the Basin Plan may be updated over the duration of the Master Plan.

TABLE 4-1
BENEFICIAL USES

Abbreviation	**Beneficial Use**	**Status**	
		Dominguez Channel	Santa Monica Bay [A]
Industrial Service Supply	IND	N/A	Existing
Navigation	NAV	N/A	Existing
Municipal and Domestic Supply	MUN	Existing	N/A
Contact Recreation	REC-1	Potential	Existing
Non-contact Recreation	REC-2	Existing	Existing
Commercial and Sport Fishing	COMM	N/A	Existing
Marine Habitat	MAR	N/A	Existing
Warm Freshwater Habitat	WARM	Potential	N/A

TABLE 4-1 (CONTINUED)
BENEFICIAL USES

Abbreviation	Beneficial Use	Status	
		Dominguez Channel	Santa Monica Bay [A]
Wildlife Habitat	WILD	Existing	Existing
Preservation of Biological Habitat	BIOL	N/A	Existing
Rare, Threatened or Endangered Species	RARE	Existing	Existing
Migration of Aquatic Organisms	MIGR	N/A	Existing
Spawning, Reproduction, and/or Early Development	SPWN	N/A	Existing
Shellfish Harvesting	SHELL	N/A	Existing

Source: CDM 2001
Notes
A. Nearshore & Offshore Zones of LA County

4.2.2.3 TMDL Program

Pursuant to the CWA, the State and Regional Boards are required to assess the quality of water bodies and list water bodies that have been determined to be impaired (303(d) List). Based on this list, the Regional Boards are required to develop and implement TMDLs as follows:

- Identify impaired waterbodies on the 303(d) List
- Determine a priority schedule for TMDL development of the various waterbodies
- Develop TMDLs such that the listed waters will achieve water quality standards

The Regional Board is required to complete all the TMDLs by 2011 (as requested by the EPA and SWRCB and per a consent decree). The developed TMDLs are then allocated among current and future dischargers for a given water body. TMDLs may be expressed in terms of mass per time, toxicity, or other appropriate measures that relate to water quality standards. They identify a watercourse’s loading capacity for a certain pollutant. The loading capacity is the greatest amount of loading that the watercourse can accept without violating the set standard.

The 2002 Section 303(d) List of Water Quality Limited Segments (Approved by the EPA in July 25, 2003) was reviewed to identify any and all pollutants for which the designated reaches of project’s receiving waters are considered impaired. The priority schedules for the project’s receiving waters are presented on Tables 4-2 through Table 4-4. However, the priority schedule is expected to change over the duration of the Master Plan.

Furthermore, on April 30, 2004, SWRCB released a notice to solicit data and information for the 2004 CWA Section 303(d) List. This notice specifies a 45-day period (ending on June 14, 2004) to request data and information regarding surface water quality conditions throughout the State. With the receipt of this data, the State's water bodies will be assessed for possible inclusion or removal from the existing priority list. Water bodies will be added due to harmful pollutant impacts and de-listed when it can be proven that such impacts have ceased or never existed. Water bodies placed on the list will be subject to development of TMDLs. A revised list is planned for submittal to the EPA in February 2005.

TABLE 4-2
TMDL PRIORITY SCHEDULE
DOMINGUEZ CHANNEL (ESTUARY TO VERMONT)

Pollutant/Stressor	Priority	Proposed TMDL Completion*
Aldrin (tissue)	Medium	2007
Ammonia	Medium	2007
Benthic Community Effects	Medium	2007
Chem A (tissue)	Medium	2007
Chlordane (sediment)	Medium	2007
Chromium (sediment)	Medium	2007
Dichlorodiphenyltrichloroethane (DDT) (tissue & sediment)	Medium	2007
Dieldrin (tissue)	Medium	2007
High Coliform Count	High	2007
Lead (tissue)	Medium	2007
Polyaromatic Hydrocarbons (PAHs) (sediment)	Medium	2007
Zinc (sediment)	Medium	2007

Source: 2002 CWA Section 303 (d) List, Approved by EPA 2003 (LARWQCB)
**Source: Telephone Conversation with Melinda Becker of Los Angeles RWQCB on June 16, 2004.*

TABLE 4-3
TMDL PRIORITY SCHEDULE
SANTA MONICA BAY, NEAR SHORE & OFFSHORE ZONES

Pollutant/Stressor	Priority	Proposed TMDL Completion*
Chlordane (sediment)	Medium	None Established
Dichlorodiphenyltrichloroethane (DDT) (tissue & sediment)	Low	None Established
Debris	Low	None Established
Fish Consumption Advisory	Low	None Established
Polyaromatic Hydrocarbons (PAHs) (sediment)	Low	None Established
Polychlorinated Biphenyls (PCBs) (tissue & sediment)	Low	None Established
Sediment Toxicity	Low	None Established

Source: 2002 CWA Section 303 (d) List, Approved by EPA 2003 (LARWQCB)
**Source: Telephone Conversation with Melinda Becker of Los Angeles RWQCB on June 16, 2004.*

TABLE 4-4
TMDL PRIORITY SCHEDULE
DOCKWEILER BEACH

Pollutant/Stressor	Priority	Effective Date*
Beach Closures	High	2003
High Coliform Count	High	2003

Source: 2002 CWA Section 303 (d) List, Approved by EPA 2003 (LARWQCB)
**Source: Telephone Conversation with Melinda Becker of Los Angeles RWQCB on June 16, 2004.*

4.2.2.4 General Construction Permit

The LAX Master Plan must comply with the SWRCB General Construction Activity Storm Water Permit (NPDES No. CAS000002, Order No. 99-08-DWQ), adopted August 19, 1999 in addition to the Modifications to the State Construction Activity Permit, Resolution Number 2001.046, adopted by the SWRCB on April 26, 2001. Compliance with the General Construction Permit was originally required for projects that disturb 5 or more acres. In March 2003 the General Permit was amended to include coverage for all projects that disturb 1 acre or more. The regulations require discharges of storm water to surface waters associated with construction activity including clearing, grading, and excavation activities to obtain an NPDES permit and to implement Best Available Technology Economically Achievable (BAT) and Best Conventional Pollutant Control Technology (BCT) to reduce or eliminate storm water pollution.

Prior to start of soil-disturbing activity at individual Master Plan project sites, a Notice of Intent (NOI) and Storm Water Pollution Prevention Plan (SWPPP) will need to be prepared in accordance with and to partially fulfill the General Construction Permit. The SWPPPs will identify BMPs to minimize impacts associated with construction of individual Master Plan projects.

4.2.2.5 General Industrial Permit

The Industrial Storm Water General Permit Order 97-03-DWQ (General Industrial Permit) regulates discharges associated with 10 broad categories of industrial activities including transportation facilities which LAX falls under. The General Industrial Permit requires the implementation of management measures that will achieve the performance standard of BAT and BCT. The General Industrial Permit also requires the development of an Industrial SWPPP and a monitoring plan. Through the SWPPP, sources of pollutants are to be identified and the means to manage the sources to reduce storm water pollution are described. The General Industrial Permit requires that an annual report be submitted each July 1.

It is expected that the requirements described above will remain, and may be augmented by additional requirements. It is also expected that this Conceptual Drainage Plan will serve as a basis for future developed conditions and may be incorporated into future permitting activities.

4.2.3 LOCAL REQUIREMENTS

In accordance with the 2001 MS4 Permit, LACDPW established the Standard Urban Stormwater Mitigation Plan (SUSMP) as a basis for all municipal permittees to require post-development BMPs to be incorporated in all applicable private and public new development and significant redevelopment projects. Per SUSMP guidelines, treatment control BMPs for projects of the type proposed under the Master Plan are required to meet specific volume-based or flow-based design standards used separately or in combination in sizing of the BMPs. For projects with the City of Los Angeles, specific SUSMP guidelines have been developed and are administered by the Bureau of Sanitation, Watershed Protection Division.

The SUSMP numerical sizing criteria states that all post construction treatment control BMPs shall collectively be designed to comply with the following:

A. mitigate (infiltrate or treat) storm water runoff from either:

- the 85th percentile 24-hour runoff event determined as the maximized capture storm water volume for the area, from the formula recommended in Urban Runoff Quality Management, WEF Manual of Practice No. 23/ASCE Manual of Practice No. 87, (1998), or
- the volume of runoff based on unit basin storage water quality volume, to achieve 80 percent or more volume treatment by the method recommended in California Stormwater Best Management Practices Handbook – Industrial/Commercial (1993), or
- the volume of runoff produced from a 0.75 inch storm event, prior to its discharge to a storm water conveyance system, or
- the volume of runoff produced from a historical-record based reference 24-hour rainfall criterion for "treatment" (0.75 inch average for the Los Angeles County area) that achieves approximately the same reduction in pollutant loads achieved by the 85th percentile 24-hour runoff event

AND

B. control peak flow discharge to provide stream channel and over bank flood protection, based on flow design criteria selected by the local agency.

Local flow based design criteria outlined in the 2001 MS4 Permit are as follows:

- The flow of runoff produced from a rain event equal to at least 0.2 inches per hour intensity, or
- The flow of runoff produced from a rain event equal to at least two times the 85th percentile hourly rainfall intensity for Los Angeles County, or
- The flow of runoff produced from a rain event that will result in treatment of the same portion of runoff as treated using volumetric standards above.

In addition to LA County requirements, the City of LA has established prescriptive methods which outline specific BMPs for projects in particular categories such as stand-alone restaurants, automotive repair shops, retail gasoline outlets and small parking lots (less than 20,000 square feet). While the airport itself does not fall within these prescriptive requirements, collateral development associated with the airport, such as off-site parking and restaurant areas, will need to address these prescriptive requirements.

4.3 METHODOLOGY AND CRITERIA

Water quality methodology and criteria used in the evaluations presented in the Conceptual Drainage Plan take into consideration:

- Sizing of treatment BMPs to meet LACDPW SUSMP and MS4 permit requirements
- Source control BMPs to meet the 2001 MS4 permit requirements
- Source control and treatment control BMPs to meet City of Los Angeles (Watershed Protection Division) Program Development BMP requirements
- TMDL requirements, once implemented
- Construction and Industrial SWPPP requirements meeting the State and 2001 MS4 permit requirements
- Maintenance capabilities and concerns

The end result of the water quality analyses is a strategy for a phased implementation of BMPs to minimize impacts to storm water quality to the maximum extent practicable (MEP) level (discussed in Section 4.2). This strategy emphasizes implementation of the most effective combination of BMPs for storm water/urban runoff pollution control. When implemented, these BMPs are intended to result in the reduction of pollutants in storm water to the MEP. In addition, the Conceptual Drainage Plan provides an overview and general recommendations for implementation of measures to satisfy the General Construction and Industrial Permit requirements (see Section 4.2.2). Recommendations include requiring measures and controls that utilize best available technology (BAT) and best conventional pollutant control technology (BCT) to reduce pollutants.

These analyses are based on the currently available data including the following:

- Current regulations, characterization of beneficial uses for receiving waterbodies
- Current and pending regulations, identified impairments of beneficial uses (TMDL/303d priority schedule)
- Existing and proposed land uses
- Pollutants identified as constituents of concern
- Currently available data to characterize water quality for baseline and proposed conditions (statistically valid pollutant data, such as event mean concentrations, based on land uses, etc.)
- Current available data on BMP technologies (removal efficiencies, etc.)

As storm water quality is a constantly evolving field, the pending regulations and available data are expected to change with time. Consequently the implementation of BMPs should consider the above criteria as they change.

This section provides an overview of the specific methodology used in the evaluations provided in the Conceptual Drainage Plan. The following includes an examination of LAX Master Plan land uses and anticipated storm water pollutants as well as methodology used in selection of appropriate BMPs. A brief overview of the computation method used in preliminary sizing the key treatment control BMPs is also included. The following flow chart summarizes the process for selecting treatment control BMP options.

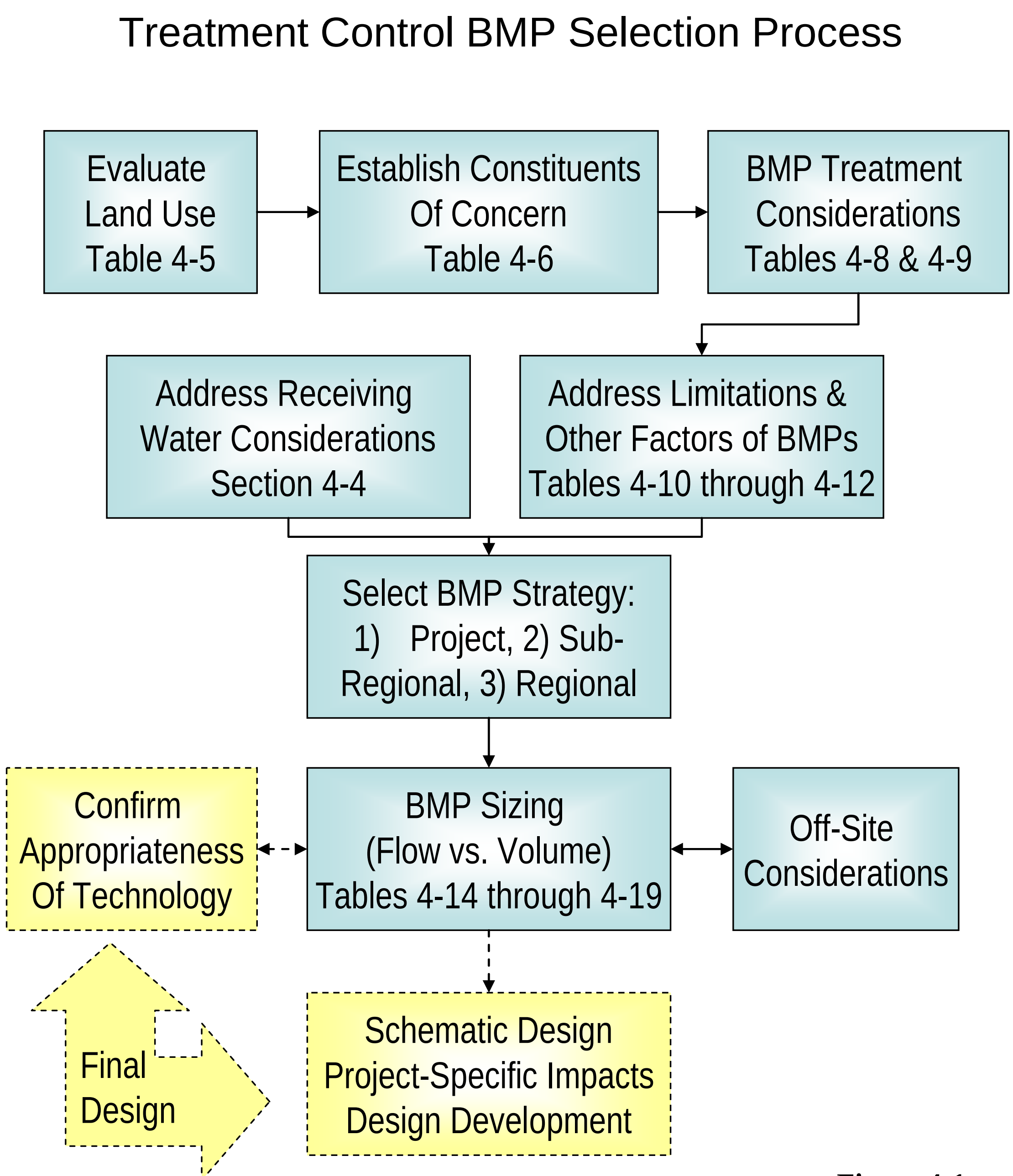


Figure 4-1
Treatment Control BMP Selection Process

4.3.1 LAND USES

Land uses at the project site are an indicator of the types of storm water pollutants that may be potentially generated. Consequently, an analysis of existing and proposed project land uses for the LAX Master Plan was undertaken to determine potential pollutants of concern. The following land uses have been identified for the baseline and/or proposed conditions:

- Open Space
- Residential (includes Single- and Multi-Family Residential; present under baseline conditions only)
- Commercial (includes Office Buildings, Professional Buildings, Educational Facilities and Hotels)
- Industrial (includes Operations and Facilities)
- Restaurant
- Parking
- Airport (includes Runways and Taxiways)

The majority of the project consists of parking and airport land uses, however specific portions of the project consist of some or all of the other aforementioned land uses. Specific land use impacts are addressed in more detail in the CEQA/NEPA documentation.

Land use classifications identified as part of the Conceptual Drainage Plan differ slightly from those identified in the EIR. Table 4-5 summarizes the correlation between land use classifications used in the EIR and the Conceptual Drainage Plan.

TABLE 4-5
CORRELATION OF CONCEPTUAL DRAINAGE PLAN AND EIR LAND USE CLASSIFICATIONS

<table>
<tr><th>Conceptual Drainage Plan Land Use Classification</th><th>Corresponding EIR Land Use Classification</th></tr>
<tr><td>Open Space</td><td>Open Space</td></tr>
<tr><td>Residential</td><td>Residential</td></tr>
<tr><td>Commercial</td><td rowspan="3">Commercial</td></tr>
<tr><td>Restaurants</td></tr>
<tr><td rowspan="2">Parking Lots</td></tr>
<tr><td rowspan="3">Airport Operations</td></tr>
<tr><td>Industrial</td></tr>
<tr><td rowspan="2">Airport</td></tr>
<tr><td>Airport Open Space</td></tr>
</table>

4.3.2 CONSTITUENTS OF CONCERN

In addition to regulatory criteria (Section 4.2) and the previously conducted pollutant load analysis (from the EIR), examination of land uses at LAX subsequently enables a review of potential constituents of concern. Constituents associated with various land uses are summarized in Table 4-6.

TABLE 4-6
CONSTITUENTS GENERATED BY DIFFERENT LAND USES

	Constituents of Concern							
Land Uses	Sediments	Nutrients	Heavy Metals	Organic Substances	Trash and Debris	Oxygen-Demanding Substances	Oils and Grease	Bacteria and Viruses
Open Space	2	2	1	1	2	1	1	2
Residential	3	3	1	1	3	3	3	2
Commercial	2	2	1	2	3	2	3	2
Restaurants	1	1	1	1	3	3	3	3
Parking Lots	2	2	3	1	3	2	3	1
Industrial	1	1	3	3	3	1	3	1
Airport	3	2	3	2	3	2	3	1

Source: San Diego County, 2002
3 – constituent very likely to be generated by land use
2 – constituent may be generated by land use
1 – constituent unlikely to be generated by land use

A description of the various constituents follows.

Sediment: soils or other surface materials eroded and transported or deposited by the action of wind, water, ice, or gravity. Sediment can have several adverse affects on water quality, including increasing turbidity, reducing spawning habitat, lowering survival rates for young aquatic organisms, smothering bottom dwelling organisms, and otherwise suppressing aquatic vegetation growth. Although most project land uses are expected to generate sediments to some extent, the airport and residential uses are typically among the highest contributors. Open space, commercial and parking lot uses may also generate sediments. If uncontrolled, excessive sediment may also be generated during construction activities.

Nutrients: inorganic substances, such as nitrogen and phosphorus. Nutrients typically exist as mineral salts that are either dissolved or suspended in water. Fertilizers and eroded soils are primary sources of nutrients in urban runoff. Discharge of nutrients to water bodies and streams can cause excessive aquatic algae and plant growth, or cultural eutrophication, which may lead to excessive decay of organic matter in the water body, loss of oxygen in the water, release of toxins in sediment, and the eventual death of aquatic organisms. Land uses associated with residential developments usually are very likely to generate nutrients. Open space, commercial, parking lot and airport uses may also generate nutrients.

Metals: raw material components in products such as fuels, adhesives, and paints. Commercially available metals and metal products are primary sources of metal pollution in storm water. At low concentrations naturally occurring in soil, metals are not toxic, but at higher concentrations, certain metals can be toxic to aquatic life. Humans can also be impacted from contaminated groundwater resources, and bioaccumulation of metals in fish and shellfish. Heavy metal compounds are very likely to be generated by parking lot, industrial, and airport uses.

Organic Compounds: carbon-based substances, either commercially available or naturally occurring, found in pesticides, solvents, and hydrocarbons. High concentrations of organic compounds can constitute a hazard to life or health. Toxic levels of solvents and cleaning compounds can be discharged to storm drains, especially when rinsing off objects. Dirt, grease, and grime retained in the cleaning fluid or rinse water may also adsorb organic compounds in concentrations that are harmful or hazardous to aquatic life. Industrial uses are typically very likely to generate organic compounds. Airport and commercial uses may also contribute to excessive rates of organic compounds.

Trash and Debris: general waste products, such as paper, plastic, polystyrene packing foam, aluminum materials, leaves, grass cuttings, and food waste. Trash and debris can have a significant impact on both the recreational value of a waterbody and on aquatic habitat. Excess organic matter can create a high biochemical oxygen demand in a stream, thereby lowering its water quality. The presence of excess organic matter can promote septic conditions in stagnant water, which can result in the growth of undesirable organisms and the release of odorous and hazardous compounds such as hydrogen sulfide. Almost all baseline and/or project land uses (including residential, commercial, restaurants, parking lots, industrial, and airport) are very likely to generate trash and debris. Trash and debris may also be generated from the open space areas.

Oxygen-Demanding Substances: biodegradable organic material (as well as chemicals) that react with dissolved oxygen in water to form other compounds. Ammonia and hydrogen sulfide are examples of oxygen-demanding substances. The oxygen demand of a substance can lead to depletion of dissolved oxygen in a water body and to the development of septic conditions. Restaurant and residential uses are typically the likely contributors to oxygen demanding substances. Commercial, parking lots, and airports may also contribute to elevated levels.

Oil and Grease: high-molecular weight organic compounds. Petroleum hydrocarbon products, motor products from leaking vehicles, esters, oils, fats, waxes, and high molecular-weight fatty acids are the primary sources of oil and grease. Elevated oil and grease content can decrease both the aesthetic value and the quality of a water body. Almost all baseline and/or project land uses (including residential, commercial, restaurants, parking lots, industrial, and airport) are very likely to generate oil and grease.

Bacteria and Viruses: microorganisms that thrive under certain environmental conditions, typically proliferated by the transport of animal or human fecal wastes from the watershed. Water containing excessive bacteria and viruses can create a harmful environment for humans and aquatic life. Restaurants are usually the likely contributors to elevated bacteria and virus levels. However, open space, residential, and commercial uses may also contribute to high pollutant concentrations.

In order to minimize potential impacts and meet regulatory criteria, measures must be identified that sufficiently address these pollutants of concern. These measures, also referred to as BMPs, are identified through a selection process, described in Section 4.3.4.

4.3.3 POLLUTANT LOAD ANALYSIS

As part of the CEQA/NEPA documents, pollutant load models were developed for specific constituents based on the following criteria:

- the pollutant was determined to be a constituent of concern at LAX, and
- the pollutant had statistically valid data (to support the analysis).

Due to limitations on statistically valid pollutant monitoring data, the models focused on the constituents as summarized in Table 4-7:

TABLE 4-7
CONSTITUENTS ANALYZED IN PREVIOUS POLLUTANT LOAD MODELS

Specific Constituents	Category
TSS	Sediment
TKN, Phosphorus, Ammonia	Nutrients
Copper, Lead, Zinc	Metals
Oil & Grease	Oil & Grease
5-Day Biochemical Oxygen Demand, Chemical Oxygen Demand	Oxygen Demanding Substances
Total Coliform, Fecal Coliform, Fecal Enterococcus	Bacteria & Viruses

The pollutant load models applied event mean concentrations (EMCs) for various land uses to determine relative impacts of the various project alternatives on the two main watersheds, Santa Monica Bay and Dominguez Channel. Pollutant loads for the baseline conditions as well as Alternative D indicated that due to minor changes in land use (from existing to proposed conditions), it is anticipated that, without implementation of BMPs, the project could result in some water quality impacts. However, the CEQA/NEPA documents also determined that through the implementation of BMPs (existing BMPs as well as those implemented through Master Plan Commitment HWQ-1) no net increase in pollutant loading will occur in storm water runoff from LAX that discharges to receiving water bodies. The proposed BMPs are discussed in Section 4.4.

It is recognized that should new statistically valid and appropriate data become available (particularly concentration and BMP effectiveness data) these new data should be considered for future impact assessments.

An updated evaluation of pollutant loads based on the application of BMPs in accordance with this Conceptual Drainage Plan is contained in Appendix C. The analysis demonstrates that implementation of the BMP plan described in this Conceptual Drainage Plan as part of the overall development of Master Plan projects will prevent a net increase in pollutant loads to surface waters.

4.3.4 BMP SELECTION PROCESS

The treatment control BMP selection process for LAX consisted of the following steps (performed in sequential order):

- Initially screening a wide range of typical treatment control BMPs based on their treatment effectiveness for constituents of concern at LAX by
    - Correlating existing and proposed land use categories with the potential for generating various constituents of concern in stormwater runoff (Table 4-6)
    - Reviewing treatment effectiveness (removal efficiency) of typical BMPs for the constituents of concern (Table 4-8)
    - Cross-referencing land use, constituents of concern and BMP treatment effectiveness to establish a rating system for BMPs based on land use categories (Table 4-9). This is further explained in Appendix B.
- Considering basic limitations and benefits of the BMPs that have passed the initial screening process (Tables 4-10). Key factors considered included cost, footprint, operation and maintenance, and volume mitigation.
- Considering other factors such as safety, aesthetics, vector problems, permitting, environmental clearance, jurisdictional issues and other site constraints, which could be fatal flaws for selection (Tables 4-11, 4-12 and 4-13).

The initial screening of BMPs based on effectiveness to treat pollutants of concern is important because BMP monitoring data demonstrate that various constituents are best treated by different BMPs. Table 4-8 provides a rating of BMP removal efficiencies for various constituents, as suggested in the California Stormwater Quality Association (CASQA) Best Management Practices Handbooks (2003) and San Diego County (2002). The ratings have been classified into three categories of 1 (low rating), 2 (medium rating) and 3 (high rating) used to provide a comparison of removal efficiencies and qualitative review of the BMPs.

TABLE 4-8
BMP REMOVAL EFFICIENCY FOR VARIOUS CONSTITUENTS

	Removal Efficiencies for Treatment Control BMP Categories A								
Constituents of Concern	Vegetated Swales	Bioretention	Extended Detention Basins	Infiltration	Wet Ponds or Wetlands	Drain Inserts	Media Filters B	Water Quality Inlets	Hydrodynamic Separator Systems B,C
Sediment	2	3	2	3	3	2	3	1	2
Nutrients	1	2	1	3	2	2	1	1	1
Heavy Metals	2	3	2	3	3	2	3	1	1
Organic Compounds	2	3	2	3	3	1	3	1	1
Trash & Debris	1	3	3	3	3	2	3	2	2
Oxygen Demanding Substances	1	2	2	2	2	1	2	1	1
Oils and Grease	2	3	2	3	3	1D	3	2	2
Bacteria & Viruses	1	3	2	3	3	1	2	1	1

Sources: California Stormwater Quality Association (CASQA), 2003; San Diego County, 2002

Notes
A. Removal efficiencies: 3 – high, 2 – moderate, 1 – low
B. Removal efficiencies assume BMP is equipped with socks/boomers for oil & grease.
C. Vortex separators, swirl concentrators, etc.
D. May have better removal potential in the future due to (1) better maintenance or (2) better technology.

Weighting factors are determined for evaluating various treatment control BMPs based on the BMP removal efficiency and land uses/constituent data presented above; this weighting procedure is further explained in Appendix B. Table 4-9 provides a summary of the BMP ratings for specific land uses.

TABLE 4-9
RATINGS FOR TREATMENT BMPS BASED ON VARIOUS LAND USES

	Ratings for Treatment Control BMP Categories [A]								
Land Uses	Vegetated Swales	Bioretention	Extended Detention Basins	Infiltration	Wet Ponds or Wetlands	Drain Inserts	Media Filters	Water Quality Inlets	Hydrodynamic Separator Systems
Open Space	1.5	2.3	1.8	2.1	2.1	1.5	2.0	1.6	1.5
Residential	1.8	2.9	2.2	2.6	2.5	1.9	2.4	1.9	1.9
Commercial	1.8	2.4	2.1	2.5	2.4	1.8	2.3	1.7	1.8
Restaurants	1.7	2.3	2.1	2.4	2.3	1.7	2.2	1.7	1.7
Parking Lots	1.8	2.4	2.1	2.5	2.4	1.8	2.3	1.7	1.8
Industrial	1.8	2.4	2.1	2.4	2.4	1.7	2.3	1.7	1.7
Airport	1.9	2.6	2.2	2.6	2.6	1.9	2.5	1.8	1.9

Notes
A. Removal efficiency ratings: 3 – high, 2 – moderate, 1 – low

As indicated in Table 4-9, for all land use categories examined, infiltration seems to be the most effective BMP. However, as mentioned above, the initial screening process is based on removal efficiencies. While performance and removal capabilities are the primary reasons in selection of BMPs, there are many other factors that are considered. Other factors can be equally important in determining a BMPs appropriateness for a specific site, including site characteristics, aesthetics, safety, maintenance, and cost considerations.

Some of the basic advantages (in addition to the pollutant removal capabilities discussed above) and disadvantages of the various recommended treatment BMPs are summarized in Table 4-10. More detailed descriptions and schematics for these treatment BMPs, including design and maintenance considerations, are included in summarized fact sheets from the CASQA BMP Handbooks (2003).

TABLE 4-10
TREATMENT CONTROL BMP LIMITATIONS AND BENEFITS*

Treatment Control BMP (general description)	Limitations	Benefits
Vegetated Swale – is a broad, shallow channel (typically trapezoidal shaped) with a dense stand of vegetation covering the side slopes and bottom. Useful life is around 50 years..	* generally incapable of removing nutrients. * can become drowning hazards, mosquito breeding areas. * not appropriate for steep topography, very flat grades. * usually small tributary areas. * difficult to avoid channelization. * ineffective in large storms due to high velocity flows. * creation of local wildlife habitat. * moderate land/footprint requirements.	* can remove particulate pollutants at rates similar to wet ponds. * high treatment capabilities. * reduction of peak flows and volumes. * improves areas landscaping. * moderate life cycle costs. * promotes infiltration.
Bioretention – The runoff is conveyed as sheet flow to the treatment area, which usually consists of a grass buffer strip, sand bed, ponding area, organic layer or mulch layer, planting soil, and plants.	* not suitable for slopes greater than 20 percent. * clogging may occur in high sediment load areas. * can become drowning hazards, mosquito breeding areas. * creation of local wildlife habitat. * moderate land/footprint requirements.	* enhance quality of downstream water bodies. * high level of treatment. * improves area's landscaping. * provide shade and wind breaks. * moderate life cycle costs. * promotes infiltration.
Extended Detention Basin - consists of a settling basin with an outlet sized to remove particulate matter by slowly releasing accumulated runoff over a short period of time. Useful life is usually 50 years..	* Inability to vegetate may result in erosion and re-suspension. * requires differential in elevation at inlet and outlet. * frequent sediment maintenance. * high land/footprint requirements * creation of local wildlife habitat.	* can utilize existing facility. * can remove soluble nutrients by shallow marsh or permanent pool. * high treatment capabilities. * suitable for larger tributary areas. * temporary storage of runoff (volume mitigation). * protection for downstream channel erosion (reducing high velocity flows). * low to moderate life cycle costs.
Infiltration Basin – usually consist of fairly shallow, flat basins excavated in pervious ground, with inlet and outlet structures to regulate flow. Useful Life is usually around 25-years.	* potential loss of infiltrative capacity. * environmental constraints. * low removal of dissolved pollutants in very coarse soils. * possible nuisance (odor, mosquito). * frequent maintenance requirement. * risk of groundwater contamination. * high land/footprint requirement.	* achieves high levels of particulate pollutant removal. * can utilize existing facility. * can recharge groundwater supplies. * an effective runoff control (provides volume mitigation). * can serve larger tributary areas. * provides localized streambank erosion control. * low to moderate life-cycle costs.

TABLE 4-10 (CONTINUED)
TREATMENT CONTROL BMP LIMITATIONS AND BENEFITS*

Treatment Control BMP (general description)	Limitations	Benefits
Media Filters (various types)– these are usually two or three stage constructed treatment systems, composed of a pretreatment settling basin and a filter bed containing filter media (and a discharge chamber).	* routine and heavy maintenance requirement. * filters are usually proprietary. * headloss potential. * may require off-line detention. * no volume mitigation. * severe clogging potential. * media may be replaced frequently. * moderate land/footprint requirements. * very high life cycle costs.	* high treatment capabilities. * can reduce groundwater contamination. *requires less land/footprint * can be placed underground. * suitable for individual developments. * can accommodate larger tributary areas (up to 100) acres. * no vegetation required. * single point of inspection and maintenance
Water Quality Inlets – commonly known as oil/grit or oil/water separators. These devices typically consist of a series of chambers, a sedimentation chamber, an oil separation chamber and a discharge chamber. Useful life is usually 50 years.	* limited drainage area (usually 1 acre or less). * high sediment loads can interfere ability to separate oil and grease. * limited hydraulic and residual storage. * poor volume mitigation. * limited treatment capabilities. * frequent maintenance. * multiple points of inspection and maintenance. * residual may be considered too toxic for landfill disposal. * re-suspension of pollutants. * small flow capacity. * very high life cycle costs.	* high hydrocarbon treatment * effectively trap trash, debris, oil and grease * ideal for small, highly impervious area. * ideal for maintenance stations. * low land/footprint requirement. * effective spill control mitigation.
Drain Inserts - devices that are inserted into storm drain inlets to filter or absorb sediment, pollutants, and oil and grease.	* not feasible for larger than 5 acres. * maintenance includes removal of sediment and debris. * very heavy maintenance requirements. * multiple points of inspection and maintenance. * no volume mitigation. * limited treatment capabilities.	* high removal efficiency for large particles and debris for pretreatment. * configured to remove sediment, constituents adsorbed to sediment, and oil and grease. * low land requirement. * flexibility for retrofit of existing systems. * low life cycle costs. * suitable for individual developments.

TABLE 4-10 (CONTINUED)
TREATMENT CONTROL BMP LIMITATIONS AND BENEFITS*

Treatment Control BMP (general description)	Limitations	Benefits
Wet Ponds/Wetlands	* maintaining oxygen supply in the pond. * may need supplemental water to maintain water level. * land/right-of-way constraints, make it infeasible in dense urban areas. * local climate might affect biological uptake. * eventual need for costly sediment removal. * potential nuisance (mosquito, odor, algae). * potential stratification and anoxic conditions. * potential nutrient release in the winter. * reduction in hydraulic capacity with plant growth. * high land/footprint requirements * creation of local wildlife habitat. * potential drowning hazard. * potential groundwater contamination.	* improve downstream water and habitat quality. * flood attenuation. * achieves high levels of pollutant removal. * achieves high levels of soluble and organic nutrient removal. * decrease potential for downstream flooding. * visual and landscape amenities. * decrease potential downstream stream bank erosion.

TABLE 4-10 (CONTINUED)
TREATMENT CONTROL BMP LIMITATIONS AND BENEFITS*

Treatment Control BMP (general description)	Limitations	Benefits
Hydrodynamic Separators	* requires frequent inspections and maintenance is site-specific. * suitable for gross pollutant removal. * most effective when heavy particulate or floatable material are separate from wet weather runoff. * suspended solids are not effectively removed.	* suited for areas with limited land availability. * good for “hotspots” such as gas stations (high concentrations). * able to treat flows from 1.6 cfs to 25 cfs. * ideal for redevelopment projects of more than 2,500 sq. feet where there was no pervious storm water management. * ideal for projects that double the impervious layer. * easy to design in new or retrofit applications. * inexpensive to service and maintain. * internal bypass prevents release of trapped pollutants. * ideal for transportation facilities, industrial properties, gas stations, parking lots and sites where there is a potential for oil or chemical spills * sorbents remove many times their own weight. * intended to screen litter, fine sand and larger particles. * act as a first screen influence for trash and debris, vegetative material, oil and grease, heavy metals. * could be used for oil spill control.

* Limitations and benefits are not listed in the order of significance and or ranked in any fashion.

BMP selection for LAX requires a consideration of various factors including benefits and limitations outlined above. As an example, while infiltration is one of the most effective BMPs in terms of pollutant removal, it requires a relatively large footprint, which is a considerable constraint for a heavily urbanized area such as LAX. However, less land-intensive BMPs, such as catch basin inserts, can be very maintenance-intensive. Other considerations include safety (e.g., no standing water within flight paths), aesthetics and input from regulatory agencies. Tables 4-11, 4-12 and 4-13 provide a qualitative evaluation of some of the other key factors and maintenance requirements considered in selection of the treatment control BMPs for LAX.

TABLE 4-11
OTHER FACTORS FOR SELECTING TREATMENT BMPS

Other Quantifiable Factors for BMP Selection	Treatment Control BMP Categories [A]									
	Vegetated Swales	Bioretention	Extended Detention Basins	Infiltration	Wet Ponds	Wetlands	Drain Inserts	Media Filters	Water Quality Inlets	Hydrodynamic Separator Systems
Capital Cost	3	2	2	2	2	1	3	1	2	1
Footprint (space requirements)	2	2	1	1	1	1	3	2	3	3
Operation & Maintenance	3	3	3	2	3	2	1	2	1	2
Volume mitigation [B]	3	3	3	3	1	3	1	1	1	1

Sources: FHWA, 2000; San Diego County, 2002
Notes
A. Factor level: 3 – favorable, 2 – moderate, 1 – unfavorable
B. No net increase in stormwater volume

Additional maintenance considerations are summarized in Table 4-12.

TABLE 4-12
ADDITIONAL MAINTENANCE CONSIDERATIONS

BMP	Maintenance	Training
Vegetated Swales	Mowing, trash removal	Low
Bioretention	Mowing, plant replacement	Low
Extended Detention	Annual Inspection	Low
Infiltration	Sediment/debris removal, mowing	Low
Wet Ponds or Wetlands	Annual inspection, plant replacement	Low
Drain Inserts	Frequent cleanout	Low
Media Filters	Annual medial removal	Moderate [A]
Water Quality Inlet	Frequent cleanout	Low
Hydrodynamic Separator Systems	Periodic cleanout	Low

Sources: FHWA, 2000
Notes
A. Due to confined space entry

In addition to these considerations, the BMP selection process took into account a number of site specific considerations summarized in Table 4-13:

TABLE 4-13
OTHER SITE SPECIFIC CONSIDERATIONS

Safety
Aesthetics
Groundwater and soil limitations
Potential vector problems
Permitting
Environmental clearance
Jurisdictional issues

4.3.5 TREATMENT CONTROL BMP SIZING REQUIREMENTS

In accordance with the municipal permit discussed in Section 4.2.3, treatment control BMPs incorporated in LAX Master Plan projects will be sized to meet the SUSMP numerical sizing requirements described in Section 4.2.3. Per the SUSMP requirements, volume-based or flow-based design standards are used separately or in combination in sizing of the BMPs. These requirements are consistent with the City of Los Angeles (Stormwater Management Division) Program Development Best Management Practices provisions.

Some BMPs are sized based on volume-based criteria, whereas others are sized based on flow-based criteria. Table 4-14 identifies the sizing criteria for typical treatment control BMPs.

TABLE 4-14
SIZING CRITERIA FOR TREATMENT CONTROL BMPS

Treatment Control BMP	Criteria
Infiltration Basin	Volume
Bioretention	Volume
Vegetated Swale	Flow
Detention / Retention Basin	Volume
Media Filtration	Flow
Water Quality Inlets	Flow
Catch Basin Inlet Devices	Flow
Wet Ponds / Wetlands	Volume
Hydrodynamic Separators	Flow

The SUSMP requirements give several alternative criteria for volumetric and flow sizing. For this project, volume of runoff produced by a 0.75-inch 24-hour rainfall event, and water quality flow produced from a 0.2 inches/hour intensity rainfall event from the project site (see Section 4.2.3) will be used for conceptual BMP sizing.

Accordingly, the 'water quality volumes' have been calculated as follows:

> Water Quality Volume (ac-ft) = Tributary area (ac) X % impervious X 0.75 inches / 12 inches per foot

And flow-based requirements were calculated as follows:

> Water Quality Flow (cfs) = Tributary area (ac) X % impervious X 0.2 inches/hr

However, recent discussions with the RWQCB indicates that the treatment requirement is expected to increase in the near future. Accordingly the volume- and flow-based calculations shown in the analysis include a safety factor of approximately 50 percent in order to maximize the projected size of proposed BMPs, in anticipation of possible future requirements. For project-specific designs, the minimum sizing criteria used will be the approved SUSMP criteria in effect at the time of project design and approval.

4.4 RECOMMENDED BEST MANAGEMENT PRACTICES

BMPs are practices, or combinations of practices, currently determined to be effective for preventing or reducing storm water pollution to the MEP. One of the main objectives of this Conceptual Drainage Plan is to identify BMPs currently accepted by regulatory authority to mitigate water quality impacts to the MEP. As mentioned previously, the BMP identification and recommendation strategy emphasizes implementation of the most effective combination of BMPs for storm water/urban runoff pollution control. When implemented and maintained properly, these BMPs are intended to result in the reduction of pollutants in storm water to the MEP. Furthermore, the Conceptual Drainage Plan provides general recommendations for implementation of measures to satisfy the General Construction and Industrial Permit requirements (see Section 4.2.2). These recommendations include requirements for measures and controls that utilize BAT and BCT to reduce pollutants.

In addition, BMP implementation considers minimizing the following potential impacts:

- Polluted runoff that may require supplemental storm water treatment.
- Exceedance of surface water quality criteria as outlined in the RWQCB Water Quality Control Plan for the Los Angeles Basin.
- Exceedance of RWQCB surface water quality criteria in groundwater recharge areas
- Negative effects on the capacity for surface water to recharge groundwater aquifer systems.

BMPs can be designed to either prevent pollution from reaching runoff waters (pollution prevention or source control) or to treat affected runoff before it discharges into receiving waters (treatment control). Treatment control BMPs mitigate identified impacts on a site-specific basis. Source control BMPs are baseline measures used to address design phase elements, routine and good housekeeping measures, construction and industrial activities as well as spill control mitigation.

All of the proposed BMPs require maintenance over time to ensure proper operation and function. The CASQA BMP Handbooks (2003) includes fact sheets which provide a summary of the basic maintenance requirements for the proposed BMPs. A comprehensive Operations and Maintenance (O&M) Plan for the project-specific BMPs will be developed during the design and construction phase of each Master Plan project. The BMPs will be monitored as needed to assure compliance with maintenance criteria and schedules. LAWA will continue to provide annual reports to the Los Angeles RWQCB to document the maintenance of the BMPs.

The following is an overview of treatment control, source control and construction phase BMP options recommended for the LAX Master Plan area. As the LAX Master Plan will be implemented over a considerable amount of time, both treatment and source control BMPs will need to be phased and interim measures provided. This phased implementation is addressed in Section 5.

4.4.1 TREATMENT CONTROL BMPS

The main objective for selection of the treatment control BMPs for the LAX Master Plan area is to incorporate systems capable of potentially minimizing the surface water quality impacts to meet MEP criteria. The following section of this report provides an overview of the treatment requirements, existing controls, and treatment control BMP options which may be implemented within the LAX Master Plan watershed. In order to stay in step with the dynamic nature of the BMP selection criteria, the actual implementation of the BMP strategy will likewise need to evolve throughout the Master Plan timeframe.

4.4.1.1 Water Quality Treatment Requirements

Based on the methodology discussed in Section 4.3.5, required treatment flows and volumes for each of the project sub-areas have been calculated. The results are summarized in Tables 4-15 through 4-19. The LAX Master Plan main sub-areas and water quality discharge points and are shown on Figure 4-2 in Appendix A. The calculations shown include a 50% safety factor in anticipation of possible future increases in the SUSMP numerical criteria by the RWQCB. Project-specific designs will be based on the SUSMP criteria in effect at the time of project approval.

TABLE 4-15
WATER QUALITY TREATMENT REQUIREMENTS
ARGO SUB-AREA

Description	Tributary Area (ac)	Composite % Imperviousness	Water Quality Volume (ac-ft)	Water Quality Flow (cfs)
Airport: Non-airfield	210	85%	16	62
South Airfield	170	75%	12	45
North Airfield	360	75%	25	95
Off-site portion	1,580	75%	109	415
Total Argo Sub-area	2,320	75%	160	609

TABLE 4-16
WATER QUALITY TREATMENT REQUIREMENTS
IMPERIAL SUB-AREA

Description	Tributary Area (ac)	Composite % Imperviousness	Water Quality Volume (ac-ft)	Water Quality Flow (cfs)
Airport: Non-airfield	290	85%	23	86
Airfield	170	75%	12	45
Total Imperial Sub-area	460	80%	34	129

TABLE 4-17
WATER QUALITY TREATMENT REQUIREMENTS
PERSHING SUB-AREA

Description	Tributary Area (ac)	Composite % Imperviousness	Water Quality Vol. (ac-ft)	Water Quality Flow (cfs)
Total Pershing Sub-area	760	80%	56	213

TABLE 4-18
WATER QUALITY TREATMENT REQUIREMENTS
DOMINGUEZ CHANNEL NORTH SUB-AREA

Description	Tributary Area (ac)	Composite % Imperviousness	Water Quality Vol. (ac-ft)	Water Quality Flow (cfs)
Ground Transportation Center (GTC)	130	75%	9	26
Rental Car Facility (RAC)	190	90%	16	60
Parking Lot 'E'	130	90%	11	41
Intermodal Transportation Center (ITC)	30	90%	2	9

TABLE 4-19
WATER QUALITY TREATMENT REQUIREMENTS
DOMINGUEZ CHANNEL SOUTH SUB-AREA

Description	Tributary Area (ac)	Composite % Imperviousness	Water Quality Vol. (ac-ft)	Water Quality Flow (cfs)
Airfield	260	65%	15	59
Apron north of airfield	170	85%	13	51
Apron south of airfield	160	85%	12	48

4.4.1.2 Existing Treatment Control BMPs

Prior to proposing treatment control BMPs, a preliminary evaluation of the existing BMPs was undertaken. Based on assessments provided by previous studies as well as several field observations, it has been determined that the existing treatment control BMPs are not sufficiently sized to meet the new water quality requirements based on applying SUSMP criteria to the Alternative D improvements.

4.4.1.3 Recommended Treatment Control BMP Options

As discussed previously, the main goal of the recommendations provided in this section is to present a suite of feasible BMPs based on current project data and information. Project specific requirements, such as exact number of BMPs, footprints and other details, are not discussed in this document. Specific BMP requirements may be assessed in the future phases of the project and with availability of further project specific information.

The LAX Master Plan assumes ultimate build-out of the preferred alternative, Alternative D, by the year 2015. As described in Section 5, this construction is proposed to occur in three phases, each of which is comprised of several projects scattered throughout the site. Accordingly, the BMP strategy will need to consider the phased implementation of the project. As such, various categories of BMP options are recommended to effectively minimize water quality impacts throughout the phases of construction:

- Project-Specific BMPs are intended to provide coverage for specific projects, meeting on-site requirements as well as serving as interim measures until sub-regional or regional BMPs are installed.
- Sub-Regional BMPs maximize opportunities for mitigation by meeting the needs of several projects.
- Regional BMPs serve the largest tributary area and are designed to address the needs of larger portions of the airport and, if appropriate, off-site needs as well.

It should be noted that the intent of recommending the various levels of BMP options is not to provide redundant coverage, but to enable flexibility in meeting the project's water quality needs throughout the phased implementation of the LAX Master Plan.

Project-specific BMPs are recommended to be implemented, only if the recommended sub-regional and regional BMPs are not feasible for the project area due to site constraints. These BMPs are proposed to address the pollutants of concern to the MEP level.

Based on treatment effectiveness, site constraints, and maintenance considerations, various BMP options are recommended; these are shown in Figure 4-2 (Appendix A) and are summarized in Table 4-20.

TABLE 4-20
RECOMMENDED TREATMENT CONTROL BMP OPTIONS

Site Location	Predominant Land Use(s)	Project-Specific BMPs	Sub-Regional BMPs	Regional BMPs [A]
Dominguez Channel North Sub-Area				
GTC	Parking	Drain Inserts	Bioretention	N/A
Parking Lot E	Parking	Drain Inserts	Vegetated Swales / Bioretention	N/A
ITC	Parking	Drain Inserts	Bioretention (roof)	N/A
RAC	Parking	Drain Inserts	Vegetated Swales / Bioretention	N/A
Dominguez Channel South Sub-Area				
Runway	Airport	Drain Inserts	Vegetated Swales/ Media Filters	N/A
Aprons	Airport	Drain Inserts / Water Quality Inlets [B]	Media Filters [B]	N/A
Argo Sub-Area				
Airport, Non-runway	Airport	Drain Inserts / Water Quality Inlets [B]	Media Filters [B]	Detention-Infiltration [C]
Runways	Airport	Drain Inserts	Vegetated Swales	Detention-Infiltration [C]
Off-site	All	N/A	N/A	Detention-Infiltration [C]
Pershing Sub-Area				
Total Pershing	Airport, O/S, Parking	Drain Inserts / Water Quality Inlets [B]	Media Filters [B]	Extended Detention / Retention [D]
Imperial Sub-Area				
Runway	Airport	Drain Inserts	Vegetated Swales	N/A
Non-runway	Airport, Comm., O/S	Drain Inserts / Water Quality Inlets [B]	Vegetated Swales / Bioretention / Media Filters [B]	Extended Detention / Retention [D]

Notes

A. If regional BMP is not constructed, project-specific BMPs must be used at least on a temporary basis until sub-regional and/or regional BMPs are constructed.

B. Proposed measures include water quality inlets and/or media filters as well as expanded use of the existing water quality inlets. It should be noted that water quality inlets are recommended to be used only in areas where traffic, fueling and maintenance operations may result in high concentrations of oil/petroleum hydrocarbons in storm water and in particular where other BMPs are not feasible.

C. Use of Argo Drain for linear detention/infiltration basin.

D. Use of existing water quality retention basin and proposed extended detention basin, both of which would be hydraulically connected.

The following presents an overview of the recommended treatment control BMP options for each specific sub-area within the LAX Master Plan area.

BMPs for Argo Sub-Area

The BMP strategy for the Argo sub-area is based on a suite of regional, project-specific and sub-regional BMPs.

The Argo sub-area presents a unique opportunity for regional treatment because of the Argo Channel's capacity for infiltration and detention. It is recommended that the Argo Channel be configured to meet the following:

- Conveyance capacity for 50-year flood (approximately 1,300 cfs)
- 1 foot freeboard
- Full SUSMP requirements for specific portions of the airport (non-runway portions, as these will be treated by vegetated swales)
- Partial to full SUSMP requirements for off-site portions of the tributary area

Table 4-21 summarizes the water quality treatment volumes for the Argo Channel.

TABLE 4-21
WATER QUALITY VOLUMES
ARGO CHANNEL INFILTRATION

Flood Control, Detention and Infiltration Volumes		**Notes**
Volume for 50-yr Flood Control conveyance	147 ac-ft	Based on typical channel section, Manning's equation, average slope of 0.05% and flow of 1,300 cfs.
Remaining Detention Volume available for Water Quality	97 ac-ft	Without infiltration
Infiltration Volume over 48 hrs	30 ac-ft	Based on assumed hydraulic conductivity of 1 in/hr
Total Volume available for Water Quality (detention % infiltration)	127 ac-ft	Based on assumed hydraulic conductivity of 1 in/hr
SUSMP Water Quality Volume		**% Treated by Argo Detention & Infiltration**
Total Argo sub-area, including off-site flows	213 ac-ft	60%
LAX portion of sub-area	68 ac-ft	187%
LAX non-runway portion of sub-area	19 ac-ft	658%

Based on the estimates provided in the previous table, the proposed reconfiguration of the Argo Channel for detention and infiltration will sufficiently meet both SUSMP and flood control requirements. In addition, as shown above, Argo Channel has potential for additional off-site flow treatment, which therefore can provide further water quality improvement. If the channel can be configured during final design to separate off-site and on-site flows, the reconfiguration would not require any widening of the existing channel, as there is currently sufficient capacity for flood control conveyance as well as the treatment of on-site water quality. The channel could also be expanded approximately 40 to 60 feet to provide full water quality treatment of off-site flows. Final selection of this option may require further coordination with other agencies such as the LA County Department of Public Works.

LAWA has previously identified a project that would replace the Argo Channel with a buried box culvert for safety concerns. The project is in LAWA's CIP, but is not currently scheduled for construction. Should LAWA decide to implement this project in the future, an alternative plan for treatment control BMPs must be identified and implemented for the Argo sub-area. This plan could include alternative types and locations of BMP(s), or configuration of the Argo Channel project to incorporate treatment capability together with conveyance capacity. Any alternative BMPs will need to meet an equivalent pollutant removal capability as the Argo Channel and at a minimum treat the volume of runoff required by applicable SUSMP requirements for the tributary area within the LAX property.

In addition to regional treatment facilities, the Argo sub-area may be treated with sub-regional BMPs:

- *Vegetated Swales for runway portions of the sub-area.* These BMPs are ideal because of their relative high level of treatment and low costs. Located in the grassy medians, these swales would be structurally stabilized with web-grid or soil structures in order to function periodically as maintenance roads.
- *Media Filters for apron areas.* Media filters are ideal because of the relatively high level of treatment; footprints are typically moderate and filters may be located underground.

Drain inserts and/or water quality inlets (oil-water separators) are ideal for localized project-specific BMPs because they can be designed and sited to meet project-specific requirements. This is especially critical because of the phased implementation of the Master Plan. Water quality inlets are proposed for areas where high oil/petroleum concentrations may be present in storm water, have footprint constraints and other BMPs may not be feasible.

BMPs for Imperial Sub-Area

A variety of regional, project-specific and sub-regional BMPs are recommended for the Imperial sub-area.

The existing water quality retention basin located east of Pershing Drive would serve as a regional BMP for the Imperial sub-area. As previously discussed, this basin is currently undersized for treating all flows from the Imperial sub-area based on current SUSMP criteria. Accordingly, the proposed Master Plan strategy is to have the basin treat flows from non-runway portions of the Imperial sub-area only. Runoff from runway portions of the sub-area is proposed to be treated with other BMPs, as described in the following paragraph. In addition, the retention basin could potentially be hydraulically connected to the proposed Pershing water quality retention basin such that the two basins could jointly treat portions of both the Imperial and Pershing sub-areas.

Proposed sub-regional BMPs include:

- *Vegetated swales for runway portions of the sub-area.* Similar to the Argo sub-area, these swales would be structurally stabilized and located in the grassy medians to serve as periodic maintenance roads.
- *Bioretention and vegetated swales for non-runway areas with sufficient footprint area.* These are located wherever possible based on available space.
- *Media Filters for non-runway areas.* Media filters are proposed for portions of the terminal and apron areas where limited space is available.

Drain inserts are proposed as the primary option for project-specific BMPs, with water quality inlets proposed for areas where high oil/petroleum concentrations in stormwater and other BMPs may not be feasible.

BMPs for Pershing Sub-Area

Regional, project-specific and sub-regional BMPs are recommended for the Pershing sub-area.

The regional BMP is a proposed water quality retention basin that could potentially be hydraulically connected to the existing retention basin located east of Pershing Drive. As with the existing retention basin, this proposed basin can retain runoff from dry weather flows and minor storm events, which may then be pumped to the Hyperion Wastewater Treatment Plant at the existing pump rate of 150 gallons per minute (gpm). Table 4-22 provides a preliminary sizing calculation for the Pershing Retention Basin.

TABLE 4-22
SUMMARY OF WATER QUALITY CALCULATIONS
PERSHING RETENTION BASIN

Calculations	Notes
SUSMP Water Quality Volume	70 ac-ft
Depth of Basin	4 ft
Freeboard	1 ft
Footprint Area	17 ac

Due to lack of available space within the Pershing sub-area, sub-regional BMPs are limited to the use of media filters.

Drain inserts may serve as project-specific BMPs, with water quality inlets for areas with high potential for oil/petroleum concentrations in stormwater runoff.

BMPs for Dominguez Channel Sub-Areas (North and South)

Recommended BMPs for the Dominguez Channel sub-areas consist mainly of project-specific and sub-regional BMPs. No regional BMPs, such as infiltration or extended detention basins, are recommended due to footprint constraints on available area.

Proposed sub-regional BMPs include:

- *Vegetated swales for runway portions of the sub-area.* As with the other runway swales, these would be structurally stabilized and located in the grassy medians to serve as periodic maintenance roads.
- *Bioretention and vegetated swales for non-runway areas with sufficient footprint area.* Areas include the GTC, the RAC, surface parking lot 'E' and the roof of the ITC.
- *Media Filters for non-runway areas.* Water quality inlets are proposed for areas where high oil/petroleum concentrations may be present in storm water, have footprint constraints and other BMPs may not be feasible. These are mainly for the apron areas where other options may not be feasible.

The proposed vegetated swales and bioretention BMPs were evaluated without consideration to infiltration and as such low permeability in this area is not a concern in recommending these BMPs.

Drain inserts may serve as the primary project-specific BMPs, with water quality inlets for apron areas which may result in high concentrations of oil/petroleum hydrocarbons in stormwater runoff.

4.4.1.4 Treatment Control Costs

In order to provide a preliminary evaluation of treatment control BMPs, recent costs from the Caltrans retrofit pilot program were summarized and compared (Table 4-23). It should be noted that these costs reflect the requirements of stormwater retrofit in the highway environment in the urban areas of Southern California and may or may not be representative of those that might be incurred in an airport setting. There are also several other studies conducted nationwide on BMP costs. However, the Caltrans data represents recent data collected in Southern California which maybe more applicable to LAX. These costs can be used to rank BMPs by life-cycle costs, which can serve as the first step in selecting and planning of the most cost-effective technologies. These costs are provided mainly for comparison of the BMPs and provide a basis for preliminary evaluation of BMP costs based on the water quality volumes estimated in this study. Appendix B provides a summary of BMP costs specific to the LAX Master Plan project.

The construction costs for the BMPs were normalized by the water quality volume rather than by tributary area. For the flow-through devices, such as swales, the cost per unit volume uses the water quality volume for the tributary area that would be used for BMP sizing if a capture-and-treat type device, such as a detention basin, were implemented. Life-cycle costs are developed by adding the present value of normalized expected operation and maintenance cost to the normalized adjusted construction cost. The present value calculation uses a 20 year life-cycle and a 4 percent discount rate.

It should be noted that the BMP sizing shown in Appendix B includes a 50% safety factor in the event that the RWQCB increases the SUSMP sizing criteria in the future.

TABLE 4-23
TREATMENT CONTROL BMP COSTS

BMP Type	Construction Cost (per cubic meter of Design Storm)	Annual O&M Cost (per cubic meter)	Present Value O&M Cost (per cubic meter)	Life Cycle Cost (per Cubic meter)
Swales & Bioretention	$17 - 20	$0.85 – 1.40	$12 - 19	$29 - 39
Detention Basin	$17 - 35	$0.17 – 0.35	$2 - 5	$19 - 40
Infiltration Basin	$46	$2.30 – 4.60	$31 - 63	$77 - 109
Drainage (Catch Basin) Inserts	$10	$29	$1,100	$39
Media Filters a) Storm Filter	a) $1,572	a) $204	a) $7,620	a) $1,776
Water Quality Inlets (Oil/Water Separators)	$1,970	$790	$21	$1,991

Sources: Caltrans, 2004; EPA, 1999

4.4.2 SOURCE CONTROL BMPS

4.4.2.1 Airport Operation Requirements

In order to comply with the General Industrial Permit, LAWA has developed an extensive pollution prevention approach to address industrial-related storm water discharges including the following:

- Submitting a 'Notice of Intent' (NOI) to obtain General Industrial Permit coverage;
- Developing and implementing a SWPPP for Industrial Activities;
- Developing and implementing a Storm Water Monitoring Program Plan (SWMPP);
- Preparation and submittal of Annual Reports; and
- Retaining all records for a period of five years.

The operations at LAX involve a high level of complexity and numerous tenants performing fueling, cargo handling, maintenance, cleaning activities and/or other aircraft operations, which in turn result in the discharge of storm water to the LAWA-operated, non-municipal storm drain system. Consequently, LAWA has assumed the role of principal permittee, with airport tenants that conduct industrial activities included as co-permittees. This permit structure conforms to federal regulations and is preferred by the SWRCB. In addition, it allows for the consistent implementation of storm water pollution prevention measures between the various tenant and LAWA facilities.

In September 2003, LAWA fulfilled the requirements of the state general permit for industrial activities by preparing a compilation of documents associated with LAX industrial activities from 2002–2003 including documentation of pollutants, existing and proposed BMPs and other data collected from tenants. These documents include the following:

- SWPPP for Industrial Activities
- SWMPP
- Storm Water Sampling Protocol
- Observation Records
- Storm Water Sampling Records
- Facility Inspection Records
- Annual Report
- Fuel Spill Record

4.4.2.2 Recommended Source Control Options

Source control (or pollution prevention) BMPs are a necessary part of any effective BMP strategy. Source controls may be able to provide further mitigation and control some pollutants not controlled by a specific treatment control BMP. Proper incorporation and implementation of these measures during appropriate stages of project development (i.e. design) will result in consistent protection of receiving waters. In combination with the other recommended treatment control BMPs, when implemented properly, the source control BMPs are intended to result in the reduction of pollutants in storm water to the MEP level.

A matrix summarizing potential source control BMPs for the various site specific projects of the LAX Master Plan is included in Table 4-24. The matrix shows basic pollution prevention measures conforming with the City of Los Angeles SUSMP guidelines. Additional opportunities for source control may be identified during final design.

4.4.3 CONSTRUCTION PHASE BMPs

Specific construction phase BMPs will need to be identified and implemented as part of the Construction SWPPP for each specific project. The project-specific SWPPP should meet the applicable provisions of Sections 301 and 402 of the Clean Water Act (CWA) by requiring controls of pollutant discharges that utilize BAT and BCT to reduce pollutants. The SWPPP will need to be implemented concurrently with commencement of the soil-disturbing activity. Furthermore, the SWPPP will need to be certified in accordance with the signatory requirements of the General Construction Permit. The SWPPP should be developed and amended or revised, when necessary, to:

- Identify all pollutant sources including sources of sediment that may affect the quality of storm water discharges associated with construction activity (storm water discharges) from the construction site,
- Identify non-storm water discharges,
- Identify, construct, implement in accordance with a time schedule, and maintain BMPs to reduce or eliminate pollutants in storm water discharges and authorized non-storm water discharges from the construction site during construction, and
- Develop a maintenance schedule for BMPs installed during construction designed to reduce or eliminate pollutants after construction is completed (post-construction BMPs).

TABLE 4-24
TYPICAL POTENTIAL SOURCE CONTROL BMPs

Projects	Housekeeping Practices	Public Education / Participation	Employee Training	Conserve Natural Areas / Vegetation Controls	Protect Slopes & Channels	Provide Storm Drain System Stenciling & Signate	Trash Storage Areas	Outdoor Material Handling and Storage Areas	Loading / Unloading Dock Areas	Waste Handling & Disposal	Vehicle Fleet Management	Repair / Maintenance Bays	Parking Area	Provide Proof of Ongoing BMP Maintenance	BMPs in Construction SWPPP	BMPs in Industrial SWPPP	Peak StormWater Runoff Discharge Rates	Minimize StormWater Pollutants of Concern	Properly Design Vehicle/Equipment/Accessory Wash Areas	Properly Design Fueling Area	Design to Limit Oil Contamination & Perform Maintenance
Phase 1																					
1. Runway 7R/25L, center taxiway, relocate Navaids for 7R/25L	x	x	x	x	x									x	x	x	x	x			x
2. ITC	x	x	x	x		x	x	x		x	x	x	x	x	x	x	x	x		x	x
3. Parking Lot 'E'	x	x	x	x		x	x			x	x	x	x	x	x	x	x	x			x
4. Off-site facilities	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
5. Baggage tunnel	x	x	x	x	x					x				x	x	x	x	x			
6. GTC to ITC roadways & Century bridge	x	x	x	x	x	x		x			x		x	x	x	x	x	x			
7. RAC	x	x	x	x		x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
8. West Employee Parking Structure	x	x	x	x		x	x			x	x		x	x	x	x	x	x			x
9. Demolish CTA parking structures	x	x	x	x			x			x				x	x	x	x	x	x	x	x
10. Off-site roadway improvements	x	x	x	x	x	x	x	x		x			x	x	x	x	x	x	x	x	x
11. CTA Landside Terminals	x	x	x			x	x	x	x	x	x		x	x	x	x	x	x	x		x
12. Landside APM	x	x	x			x	x							x	x	x	x	x			
13. Baggage system GTC to CTA	x	x	x				x			x				x	x	x	x	x			x
14. GTC	x	x	x	x		x	x	x	x	x	x		x	x	x	x	x	x			x
Phase 2																					
1. Replacement hangar	x	x	x	x			x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
2. Ancillary facilities	x	x	x	x	x	x	x	x	x	x	x	x		x	x	x	x	x	x	x	x
3. Clear midfield areas	x	x	x	x	x					x				x	x	x	x	x			
4. Tunnel from West Satellite	x	x	x	x			x			x				x	x	x	x	x			
5. Midfield taxiways and aprons	x	x	x	x			x	x	x	x	x		x	x	x	x	x	x		x	x
6. West Satellite Concourse	x	x	x				x	x	x	x	x	x		x	x	x	x	x		x	x
7. Airside APM	x	x	x				x							x	x	x	x	x			
8. Baggage system from satellite	x	x	x				x	x	x	x				x	x	x	x	x			x
Phase 3																					
1. Reconfig fuel farm	x	x	x	x		x	x	x	x	x	x	x	x	x	x	x	x	x		x	x
2. Reconfig TBIT	x	x	x	x			x	x	x	x	x	x		x	x	x	x	x			x
3. North CTA Concourses	x	x	x				x	x	x	x	x	x		x	x	x	x	x		x	x

TABLE 4-24 (CONTINUED)
TYPICAL POTENTIAL SOURCE CONTROL BMPs

Projects	Housekeeping Practices	Public Education / Participation	Employee Training	Conserve Natural Areas / Vegetation Controls	Protect Slopes & Channels	Provide Storm Drain System Stenciling & Signate	Trash Storage Areas	Outdoor Material Handling and Storage Areas	Loading / Unloading Dock Areas	Waste Handling & Disposal	Vehicle Fleet Management	Repair / Maintenance Bays	Parking Area	Provide Proof of Ongoing BMP Maintenance	BMPs in Construction SWPPP	BMPs in Industrial SWPPP	Peak Stormwater Runoff Discharge Rates	Minimize Stormwater Pollutants of Concern	Properly Design Vehicle/Equipment/Accessory Wash Areas	Properly Design Fueling Area	Design to Limit Oil Contamination & Perform Maintenance
4. North CTA apron, taxiway	x	x	x	x		x				x	x		x	x	x	x	x	x	x	x	x
5. Runway 6R/24L	x	x	x	x										x	x	x	x	x			x
6. South CTA Concourses	x	x	x				x	x	x	x	x	x		x	x	x	x	x		x	x
7. Runway 6L/24R and center	x	x	x	x										x	x	x	x	x			x
8. Remaining ancillary facilities	x	x	x	x		x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Collateral Projects	x	x	x	x	x	x	x	x	x		x	x	x	x	x	x	x	x	x	x	x

Source: City of Los Angeles Dept. of Public Works Bureau of Sanitation, Development Best Management Practices Handbook - Part B: Planning Activities

Copies of the SWPPP should remain at the site during construction working hours, commencing with the initial construction activity and ending with termination of coverage under the General Construction Permit. The following is an overview of the basic (and minimum) SWPPP sections as well as possible construction phase BMP options which may be considered:

a) Source Identification: (a) project information and (b) pollutant source identification combined with an itemization of BMPs specifically chosen to control the pollutants listed.
b) Erosion Control: Erosion control techniques to retain soil and sediment on the construction site will need to be addressed. Particular attention must be paid to large mass-graded sites where the potential for soil exposure to the erosive effects of rainfall and wind is great. The SWPPP should include a description of the BMPs and control practices to be used for both temporary and permanent erosion control measures. Also, a description of the BMPs to reduce wind erosion at all times should be provided.
c) Stabilization: All disturbed areas of the construction site must be stabilized and therefore, stabilization techniques must be addressed in the SWPPP. Examples may include the following: blankets, reinforced channel liners, soil cement, fiber matrices, geotextiles, and/or other erosion resistant soil coverings or treatments.
d) Sediment Control: The SWPPP should include a description or illustration of BMPs, which will be implemented to prevent a net change of sediment load in storm water discharge relative to pre-construction levels. Sediment control BMPs are required at appropriate locations along the site perimeter and at all operational internal inlets to the storm drain system at all times during the rainy season. Sediment control practices may include filtration devices and barriers (such as fiber rolls, silt fence, straw bale barriers, and gravel inlet filters) and/or settling devices (such as sediment traps or basins).
e) Non-Storm Water Management: A description of all possible non-storm water discharges from the construction site to receiving waters must be provided in the SWPPP. Examples of non-storm water discharges include: watering for dust control purposes, and aircraft, vehicle and equipment wash down wastes. Non-storm water discharges should be eliminated or reduced to the extent feasible.
f) Post-Construction Storm Water Management: The SWPPP should include descriptions of the BMPs to reduce pollutants in storm water discharges after all construction phases have been completed at the site. BMP design and implementation must be consistent with all local post-construction storm water management requirements, policies, and guidelines. Also, operation and maintenance of control practices after construction is completed should be addressed.
g) Maintenance, Inspection, and Repair: The SWPPP should include a discussion of the program to inspect and maintain/repair all BMPs as identified in the site plan throughout the entire duration of the project. The SWPPP should provide an easy to follow inspection checklist to be used in the duration of the project.
h) Training: Individuals responsible for SWPPP preparation, implementation, and permit compliance should be appropriately trained, and the SWPPP should document all training.
i) List of Contractors/Subcontractors: The SWPPP should include a complete list of names of all contractors, subcontractors and individuals responsible for implementation of the SWPPP.
j) Other Plans: The SWPPP may incorporate by reference the appropriate elements of other plans (e.g. Spill Prevention Plan) required by local, state, or federal agencies.

k) Sampling Plan: The SWPPP should include a sampling plan per the requirements of SWRCB Resolution 2001-46 (2001 modification to the General Construction Permit).

Following the completion of the construction project and when the site has been stabilized, a Notice of Termination shall be submitted to the Los Angeles RWQCB (Region 4). As discussed in the current General Construction Permit, a construction site is considered to be stabilized when a uniform vegetative cover with 70 percent of the native vegetative cover has been established or equivalent stabilization measures have been employed.

Typical construction phase BMPs which may be implemented to meet the above requirements, as appropriate for each project, are described in the California Best Management Practice Handbooks for Construction (SWQTF, 2003). The general categories from which BMPs must be identified as applicable to project-specific conditions should include the following:

1) temporary sediment control,
2) temporary soil stabilization
3) scheduling,
4) preservation of existing vegetation
5) conveyance controls,
6) wind control,
7) temporary stream crossings, and
8) waste management.

These measures are consistent with requirements set forth under the General Construction Permit as well as with those requirements set forth in the 2001 MS4 Permit. These BMPs are directed at reducing storm runoff pollutants and eliminating non-storm water discharges during the project construction activities. The basic requirements discussed above are based on current regulatory requirements but it should be recognized that these requirements may change with re-issuance of the General Construction Permit.

Although there are no major new development or redevelopment projects proposed under Alternative D in the Vista Del Mar sub-area west of Pershing Drive requiring permanent post-construction BMPs, construction BMPs will be required in association with the relocation of the existing navigational aids in the El Segundo Dunes. Based on a conversation with FAA, the agency will include, as part of its construction documents appropriate erosion and sediment control BMPs. The BMPs will address the reconfiguration project design to minimize the effects on environmentally sensitive habitat.

4.5 APPLICABILITY TO SPECIFIC PROJECT ADVANCE PLANNING

The proposed treatment, Source Control and Construction Phase BMPs represent a Conceptual BMP plan that will provide the required compliance with water quality permits and regulations and prevent a net increase in pollutant loads to surface water following the development of Master Plan projects. The plan provides the basis for preparation of project-specific SUSMPs during the advance planning of Master Plan projects. Project-specific BMPs designed in conjunction with specific site engineering must be similar to or provide equivalent or better overall pollutant removal performance to the BMPs presented in this Conceptual Drainage Plan.

LAWA will monitor BMP implementation as Master Plan projects are implemented to ensure that the water quality goals of Master Plan Commitment HWQ-1 continue to be met. As each project moves through advance planning, LAWA will document that a project-specific SUSMP has been prepared and that the type and capacity of BMPs selected are consistent with the Conceptual Drainage Plan and/or provide equivalent pollutant removal. LAWA will also monitor the construction and long-term operation and maintenance of the BMPs.

SECTION 5.0
PHASING & IMPLEMENTATION

5.1 IMPLEMENTATION APPROACH

The conceptual major drainage system improvements and water quality BMPs, identified in Sections 3 and 4 respectively, that are needed to support development of Alternative D will be constructed in phases to generally follow anticipated construction of various Master Plan projects. Most of the facilities would logically be designed into and constructed with specific projects where the facilities fall within the overall construction boundary of the project. For those facilities, the detailed location, sizing selection and final design will be an integral part of the site and drainage design of the project. However, in some cases, certain identified drainage improvements may not be included within a specific project design. This would occur, for example, where a drainage system deficiency and recommended improvement may be needed in a location that would otherwise not be undergoing any redevelopment construction. In those cases, LAWA will include the facilities within its overall airport Capital Improvements Plan design and construct the facilities either as "stand-alone" projects or in conjunction with other infrastructure improvements.

5.1.1 CIP BACKGROUND

Section 610 of the City Charter requires that Los Angeles World Airports (LAWA) submit a Debt Accountability and Capital Improvement Plan (CIP) to the Mayor, City Council, and City Controller every two (2) years in conjunction with the budget process. Also, in step with the budget process, the CIP should be submitted each year to the Mayor, the Commerce, Energy and Natural Resources Committee of the Council, and to the Controller in accordance with Administrative Code Section 11.28.3. The CIP represents LAWA's best forecast of the major facilities and information technology projects that will be required to sustain and improve the security, safety, and customer service levels at LAWA's four airports.

Unlike most operating expenditures, capital improvements are major expenditures that have long-lasting effects on LAWA. The Capital Improvement Plan (CIP) is a strategic management tool used to systematically identify, prioritize and assign funding to capital projects. Capital projects are defined as substantial, non-recurring physical improvements with long-term life expectancies, including related architectural and engineering activities. Due to the capital-intensive nature of airports, most U.S. airports develop CIPs which are periodically reviewed and updated. LAWA has developed a three-year (FY 2006 through FY 2008) CIP that includes all capital improvement projects that are classified in one of six categories: Close-Out/Litigation, Construction, Bidding/Procurement, Design, Capital Equipment Purchases and Noise Mitigation for LAX, ONT, VNY and PMD airports.

The proposed (FY 2006 through FY 2008) CIP is a planning document. Given the dynamic nature of airports, particularly in the post September 11th environment, the CIP is subject to change as new needs are identified, and priorities change. As a result of changing needs and the availability of resources, there is a possibility that some projects may not advance past the design stage. In addition, the scope of projects identified in the CIP may change, and other new projects may be added to the CIP in future years.

5.1.2 PHASING APPROACH

Drainage facility improvements and water quality BMPS have been generally divided into three broad phases based on assumptions on phasing of the development of Alternative D projects. Within each of these phases, the conceptual projects are further categorized as to whether they would logically be associated with a specific development project, or whether they would be constructed under LAWA's CIP.

5.2 PHASE 1 REQUIREMENTS

For conceptual planning purposes, projects assumed to be included with Phase 1 are summarized in Table 5-1 (from the LAX Master Plan), Alternative D description.

TABLE 5-1
PHASE 1 PROJECTS

PROJECT
1. Runway 7R/25L, center taxiway, relocate Navaids for 7R/25L
2. Intermodal Transportation Center (ITC)
3. Parking Lot 'E'
4. Relocate existing off-site facilities
5. Baggage tunnel from future GTC to existing Central Terminal Area (CTA)
6. Access roadways from GTC to ITC, Century Blvd. Bridge
7. Consolidated Rental Car Facility (RAC)
8. West Employee Parking Structure
9. Demolish CTA parking structures
10. Off-site roadway improvements
11. CTA Landside Terminals
12. Landside Automated People Mover (APM) for CTA to GTC, ITC, RAC
13. Baggage security and distribution for GTC to CTA
14. Ground Transportation Center (GTC)

5.2.1 DRAINAGE IMPROVEMENTS

Table 5-2 summarizes main line drainage improvements for Phase 1 projects. The Label ID in the table corresponds to the drainage system labels in Figure 3-5 as shown in Appendix A.

TABLE 5-2
SUMMARY OF MAIN LINE DRAINAGE IMPROVEMENTS
PHASE 1

Project 1. Runway 7R/25L, center taxiway, relocate Navaids for 7R/25L					
Label ID	**Conduit Size**	**Length (ft)**	**Label ID**	**Conduit Size**	**Length (ft)**
AR-1	24” RCP	300	SD-4	24” RCP	280
AR-2	30” RCP	474	SD-5	30” RCP	500
AR-3	36” RCP	984	SD-6	30” RCP	533
AR-4	42” RCP	1188	SD-7	54” RCP	490
AR-5	24” RCP	877	SD-8	60” RCP	1380
AR-6	30” RCP	1058	SD-9	33” RCP	240
AR-7	33” RCP	773	SD-10	3.75’Wx2.0’H RCB	270
AR-8	42” RCP	421	SD-11	42” RCP	1250
			SD-12	36” RCP	695
			SD-13	42” RCP	760
			SD-14	48” RCP	1400
IM-1	30” RCP	800	SD-15	3.33’x5.42’ RCArch	825
IM-2	36” RCP	657	SD-16	60” RCP	400
IM-3	42” RCP	1655	SD-17	30” RCP	275
IM-4	24” RCP	400	SD-18	33” RCP	700
IM-5	30” RCP	751	SD-19	42” RCP	1590
IM-6	42” RCP	1188	SD-20	48” RCP	1100
IM-7	48” RCP	495	SD-21	Dbl-4.67’Wx3’H RCB	315
SD-1	2’Wx2’H RCB	342			
SD-2	2’Wx2’H RCB	163			
SD-3	42” RCP	490			

TABLE 5-2 (CONTINUED)
SUMMARY OF MAIN LINE DRAINAGE IMPROVEMENTS
PHASE 1

Project	Label ID	Conduit Size	Length (ft.)
2. ITC	Site Improvements Only		
3. Parking Lot 'E'	Site Improvements Only		
4. Off-site facilities	Site Improvements Only		
5. Baggage tunnel	Site Improvements Only		
6. GTC to ITC roadways & Century bridge	Site Improvements Only		
7. RAC	ND-1	48"RCP	327
	ND-2	54" RCP	293
	ND-3	72"RCP	1000
	ND-4	78"RCP	460
8. West Employee Parking Structure	Site Improvements Only		
9. Demolish CTA parking structures	Site Improvements Only		
10. Off-site roadway improvements	Site Improvements Only		
11. CTA Landside Terminals	Site Improvements Only		
12. Landside APM	Site Improvements Only		
13. Baggage system GTC to CTA	Site Improvements Only		
14. GTC	Site Improvements Only		

5.2.2 WATER QUALITY BMPS

Table 5-3 summarizes water quality treatment BMPs for Phase 1 projects.

TABLE 5-3
SUMMARY OF WATER QUALITY TREATMENT BMPS
PHASE 1

Project	On-site	Planning	Regional
1. Runway 7R/25L, center taxiway, relocate Navaids for 7R/25L	Drainage inserts	Vegetated swales/ Media filters	N/A
2. ITC	Drainage inserts	Bioretention (roof)	N/A
3. Parking Lot 'E'	Drainage inserts	Bioretention, Vegetated swales	N/A
4. Off-site facilities	Drainage inserts	N/A	N/A
5. Baggage tunnel	Drainage inserts	N/A	N/A
6. GTC to ITC roadways & Century bridge	Drainage inserts	Vegetated swales	N/A

TABLE 5-3 (CONTINUED)
SUMMARY OF WATER QUALITY TREATMENT BMPS
PHASE 1

Project	On-site	Planning	Regional
7. RAC	Drainage inserts	Bioretention, Vegetated swales	N/A
8. West Employee Parking Structure	Drainage inserts	Bioretention	Extended Detention / Retention basin(s)
9. Demolish CTA parking structures	N/A	N/A	N/A
10. Off-site roadway improvements	Drainage inserts	Vegetated swales	N/A
11. CTA Landside Terminals	Drainage inserts / Water quality inlets	Media filter	N/A
12. Landside APM	Drainage inserts	N/A	N/A
13. Baggage system GTC to CTA	Drainage inserts	N/A	N/A
14. GTC	Drainage inserts	Bioretention	N/A

5.3 PHASE 2 REQUIREMENTS

Projects associated with Phase 2 are summarized in Table 5-4.

TABLE 5-4
PHASE 2 PROJECTS

PROJECT
1. Replacement hangar for American Airlines High Bay maintenance facility
2. Ancillary facilities for West Satellite Concourse facilities
3. Clear midfield airline maintenance areas
4. Tunnel for Airside APM and baggage systems from future West Satellite Concourse to CTA
5. Midfield crossfield taxiways and aprons
6. West Satellite Concourse
7. Airside APM from satellite concourse to CTA
8. Baggage system from satellite concourse to CTA

5.3.1 DRAINAGE IMPROVEMENTS

Table 5-5 summarizes main line drainage improvements for Phase 2 projects. The Label ID in the table corresponds to the drainage system labels in Figure 3-5 (see Appendix A).

TABLE 5-5
SUMMARY OF MAIN LINE DRAINAGE IMPROVEMENTS
PHASE 2

Project	Label ID	Conduit Size	Length
1. Replacement hangar	Lateral Storm Drains Only, No Main Line Improvements		
2. Ancillary facilities	Site Improvements Only		
3. Clear midfield areas	Site Improvements Only		
4. Tunnel from West Satellite Concourse to CTA	Site Improvements Only		
5. Midfield taxiways and aprons	Lateral Storm Drains Only, No Main Line Improvements		
6. West Satellite Concourse	PER-1	48” RCP	1240
	PER-2	54” RCP	285
7. Airside APM	Site Improvements Only		
8. Baggage system from satellite concourse to CTA	Site Improvements Only		

5.3.2 WATER QUALITY BMPS

Table 5-6 summarizes water quality treatment BMPs for Phase 2 projects.

TABLE 5-6
SUMMARY OF WATER QUALITY TREATMENT BMPS
PHASE 2

Project	On-site	Planning	Regional
1. Replacement hangar	Drainage inserts / Water quality inlets	Media filter	Extended Detention / Retention basin(s)
2. Ancillary facilities	Drainage inserts / Water quality inlets	Media filter	Extended Detention / Retention basin(s)
3. Clear midfield areas	Drainage inserts	N/A	Extended Detention / Retention basin(s)
4. Tunnel from West Satellite Concourse to CTA	N/A	N/A	N/A
5. Midfield taxiways and aprons	Drainage inserts / Water quality inlets	Media filter	Extended Detention / Retention basin(s)
6. West Satellite Concourse	Drainage inserts / Water quality inlets	Media filter	Extended Detention / Retention basin(s)
7. Airside APM	Drainage inserts / Water quality inlets	Media filter	Extended Detention / Retention basin(s)
8. Baggage system from satellite concourse to CTA	Drainage inserts / Water quality inlets	Media filter	Extended Detention / Retention basin(s)

5.4 PHASE 3 REQUIREMENTS

Projects associated with Phase 3 are summarized in Table 5-7.

TABLE 5-7
PHASE 3 PROJECTS

PROJECT
1. Reconfiguration of fuel farm
2. Holdrooms and departure gates on west side, reconfiguration of TBIT
3. North CTA Concourses (Terminals 1, 2 and 3)
4. North CTA apron, taxiway south of Runway 6R/24L
5. Runway 6R/24L
6. South CTA Concourses
7. Runway 6L/24R and center taxiway
8. Remaining ancillary facilities

5.4.1 DRAINAGE IMPROVEMENTS

Table 5-8 summarizes main line drainage improvements for Phase 3 projects. The Label ID in the table corresponds to the drainage system labels in Figure 3-5 (see Appendix A).

TABLE 5-8
SUMMARY OF MAIN LINE DRAINAGE IMPROVEMENTS
PHASE 3

Project	Label ID	Conduit Size	Length
1. Reconfig fuel farm	Site Improvements Only		
2. Reconfig TBIT	Site Improvements Only		
3. North CTA Concourses	Site Improvements Only		
4. North CTA apron, taxiway	Site Improvements Only		
5. Runway 6R/24L	AR-12	33” RCP	720
	AR-13	42” RCP	1500
	AR-14	48” RCP	530
	AR-15	54” RCP	985
	AR-16	54” RCP	980
	AR-17	54” RCP	400
	AR-18	54” RCP	680
6. South CTA Concourses	Site Improvements Only		
7. Runway 6L/24R and center taxiway	Site Improvements Only		
8. Remaining ancillary facilities	Site Improvements Only		

5.4.2 WATER QUALITY BMPS

Table 5-9 summarizes water quality treatment BMPs for Phase 3 projects.

TABLE 5-9
SUMMARY OF WATER QUALITY TREATMENT BMPS
PHASE 3

Project	On-site	Planning	Regional
1. Reconfig fuel farm	Drainage inserts	Media filter	N/A
2. Reconfig TBIT	Drainage inserts, Water quality inlets	Bioretention, Vegetated swales	Extended Detention / Retention basin(s)
3. North CTA Concourses	Drainage inserts, Water quality inlets	Bioretention, Vegetated swales, Media filter	Extended Detention / Retention basin(s)
4. North CTA apron, taxiway	Drainage inserts	Bioretention, Vegetated swales, Media filter	Extended Detention / Retention basin(s)
5. Runway 6R/24L	Drainage inserts	Vegetated swales	N/A
6. South CTA Concourses	Drainage inserts, Water quality inlets	Bioretention, Vegetated swales, Media filter	Extended Detention / Retention basin(s)
7. Runway 6L/24R and center taxiway	Drainage inserts	Vegetated swales	N/A
8. Remaining ancillary facilities	Drainage inserts, Water quality inlets	Bioretention, Vegetated swales, Media filter	Extended Detention / Retention basin(s)

5.5 PROJECTS TO BE INCLUDED IN CIP

Drainage system improvements that are not expected to be incorporated directly into specific master plan projects design and construction will be included in LAWA's CIP process. Table 5-10 summarizes these drainage system improvements to be included in CIP.

TABLE 5-10
SUMMARY OF MAIN LINE DRAINAGE IMPROVEMENTS
TO BE INCLUDED IN CIP

Project 1. Runway 7R/25L, center taxiway, relocate Navaids for 7R/25L					
Label ID	**Conduit Size**	**Length (ft)**	**Label ID**	**Conduit Size**	**Length (ft)**
AR-9	6.75'Wx4.5'H RCB	315	SD-22	42" RCP	600
AR-10	6.75'Wx4.5'H RCB	200	SD-23	48" RCP	900
AR-11	10'Wx4.5'H RCB	250	SD-24	54" RCP	400

SECTION 6.0
LIMITATIONS

The hydrologic and water quality analyses presented herein have been prepared in accordance with guidelines established by the Los Angeles County Department of Public Works (LACDPW), the City of Los Angeles, the Federal Aviation Administration (FAA), Los Angeles World Airports (LAWA) and their representatives. While the Conceptual Drainage Plan includes an evaluation of various levels of hydrologic protection, evaluation of the appropriateness of these guidelines and the accuracy of County data are beyond the scope of this work.

The Conceptual Drainage Plan has been prepared at a level of detail appropriate for planning purposes. The methodology employed in these analyses was selected to determine measures to minimize project impacts, and provide approximate footprints for those measures. Further detailed analysis may be necessary for the design stages of the project.

The use of the Conceptual Drainage Plan is limited to addressing the purpose and scope previously defined by LAWA.

SECTION 7.0
REPORT PREPARERS

Drainage and Water Quality Analysis….……………………………………………..PSOMAS

Storm Water Pollutant Loading Analysis……………………………………………........CDM

Figures……………………………………………………….PSOMAS as Modified by HNTB

Report Preparation……………………………………………..PSOMAS as Modified by CDM

SECTION 8.0
REFERENCES

American Society of Civil Engineers (ASCE), 2001. National Stormwater Best Management Practices Database. Urban Water Resources Research Council (UWRRC).

American Society of Civil Engineers, 2001. Guide for BMP Selection in Urban Developed Areas. ASCE Urban Water Infrastructure Management Committee's Task Committee for Evaluating BMPs.

Brown, W. and T. Schueler. 1997. The Economics of Stormwater BMPs in the Mid-Atlantic Region. Prepared for: Chesapeake Research Consortium. Edgewater, MD. Center for Watershed Protection. Ellicott City, MD.

California Department of Transportation (Caltrans), April 2002. Statewide Storm Water Quality Practice Guidelines (CTSW-RT-02-009).

California Department of Transportation (Caltrans), January 2004. BMP retrofit Pilot Program, Final Report

California Regional Water Quality Control Board, Los Angeles Region, December 2001. Waste Discharge Requirements for Municipal Storm Water and Urban Runoff Discharges within the County of Los Angeles, and the Incorporated Cities therein, Except the City of Long Beach, Order No. 01-182, NPDES No. CAS004001.

California Regional Water Quality Control Board, Los Angeles Region (4), June 1994, Water Quality Control Plan, Los Angeles Region: Basin Plan for the Coastal Watersheds of Los Angeles and Ventura Counties.

California Stormwater Quality Association (CASQA), January 2003. Stormwater Best Management Practice Handbook – Construction.

California Stormwater Quality Association (CASQA), January 2003. Stormwater Best Management Practice Handbook – Industrial & Commercial.

California Stormwater Quality Association (CASQA), January 2003. Stormwater Best Management Practice Handbook – Municipal.

California Stormwater Quality Association (SWQA), January 2003. Stormwater Best Management Practice Handbook – New Development & Redevelopment.

Camp, Dresser & McKee, Inc. (CDM), January 2001. Hydrology and Water Quality Technical Report.

Camp, Dresser & McKee, Inc. (CDM), June 2003. Supplemental Hydrology and Water Quality Technical Report.

Camp, Dresser & McKee, Inc. (CDM), April 2000. Los Angeles World Airports (LAWA) Stormwater Guidance Manual for Construction Activities.

Camp, Dresser & McKee, Inc. (CDM), 2001. LAX Master Plan Draft EIS/EIR, Section 4.7: Hydrology and Water Quality.

Camp, Dresser & McKee, Inc. (CDM), 2003. LAX Master Plan Supplement to the Draft EIS/EIR, Section 4.7: Hydrology and Water Quality.

Camp, Dresser & McKee, Inc. (CDM), September 2003. Storm Drain System Survey, World Way West and Imperial Highway, LAX.

City of Los Angeles, Department of Public Works, Bureau of Sanitation, and Watershed Protection Division.August 2002. Development Best Management Practices Handbook, Part B: Planning Activities.

Environmental Protection Agency (EPA), August 1999. Preliminary Data Summary of Urban Storm Water Best Management Practices.

Los Angeles County Department of Public Works (LACDPW), 1991-1993. Hydrology/ Sedimentation Manual and Appendices.

Los Angeles County Department of Public Works (LACDPW), June 2002. Hydrologic Method Addendum to the 1991 Hydrology / Sedimentation Manual.

Los Angeles County Department of Public Works (LACDPW), September 2002. Development for Storm Water Management: A Manual for the Standard Urban Storm Water Mitigation Plan (SUSMP).

Los Angeles World Airports (LAWA), June 2000. LAX, Annual Report for Storm Water Discharges Associated with Industrial Activities, 1999-2000.

Los Angeles World Airports (LAWA), June 2001. LAX, Annual Report for Storm Water Discharges Associated with Industrial Activities, 2000-2001.

Los Angeles World Airports (LAWA), June 2002. LAX, Annual Report for Storm Water Discharges Associated with Industrial Activities, 2001-2002.

Los Angeles World Airports (LAWA), June 2003. LAX, Annual Report for Storm Water Discharges Associated with Industrial Activities, 2002-2003.

Los Angeles World Airports (LAWA), June 2000. Ontario International Airport, Annual Report for Storm Water Discharges Associated with Industrial Activities, 1999-2000.

Los Angeles World Airports (LAWA), June 2001. Ontario International Airport, Annual Report for Storm Water Discharges Associated with Industrial Activities, 2000-2001.

Los Angeles World Airports (LAWA), June 2002. Ontario International Airport, Annual Report for Storm Water Discharges Associated with Industrial Activities, 2001-2002.

Los Angeles World Airports (LAWA), June 2003. Ontario International Airport, Annual Report for Storm Water Discharges Associated with Industrial Activities, 2002-2003.

Los Angeles World Airports (LAWA), June 2000. Van Nuys Airport, Annual Report for Storm Water Discharges Associated with Industrial Activities, 1999-2000.

Los Angeles World Airports (LAWA), June 2001. Van Nuys Airport, Annual Report for Storm Water Discharges Associated with Industrial Activities, 2000-2001.

Los Angeles World Airports (LAWA), June 2002. Van Nuys Airport, Annual Report for Storm Water Discharges Associated with Industrial Activities, 2001-2002.

Los Angeles World Airports (LAWA), June 2003. Van Nuys Airport, Annual Report for Storm Water Discharges Associated with Industrial Activities, 2002-2003.

Los Angeles World Airports (LAWA), September 2003. Storm Water Pollution Prevention Plan (SWPPP) & Storm Water Monitoring Program Plan (SWMPP) Associated with Industrial Activities, 2002-2003.

Parsons, Brinckerhoff, Quade, Douglas, Inc., June 2002. “Draft” Preliminary Design Report for LAX North Perimeter Storm Drain.

Parsons, Brinckerhoff, Quade, Douglas, Inc., October 2002. Final On-Site Hydrology Report for LAX.

Parsons, Brinckerhoff, Quade, Douglas, Inc., December, 2001. Revised Hydrology Report for LAX North Perimeter Storm Drain.

San Diego County, 2002. Data relating land use and potential pollutants.

Shoemaker, L., Lahlou, M., Doll, A., and Cazenas, P., 2000. Stormwater Best Management Practices in an Ultra-urban Setting: Selection and Monitoring: Federal Highway Administration Report (FHWA-EP-00-002).

U.S. Environmental Protection Agency (EPA), January 1993. Guidance Specifying Management Measures for Sources of Nonpoint Pollution in Coastal Waters (EPA 840-B-92-002).

Appendices

A. Figures

B. Water Quality BMPs

C. LAX Master Plan Alternative D Pollutant Load Analysis Based on Conceptual Drainage Plan BMPs

This page intentionally left blank.

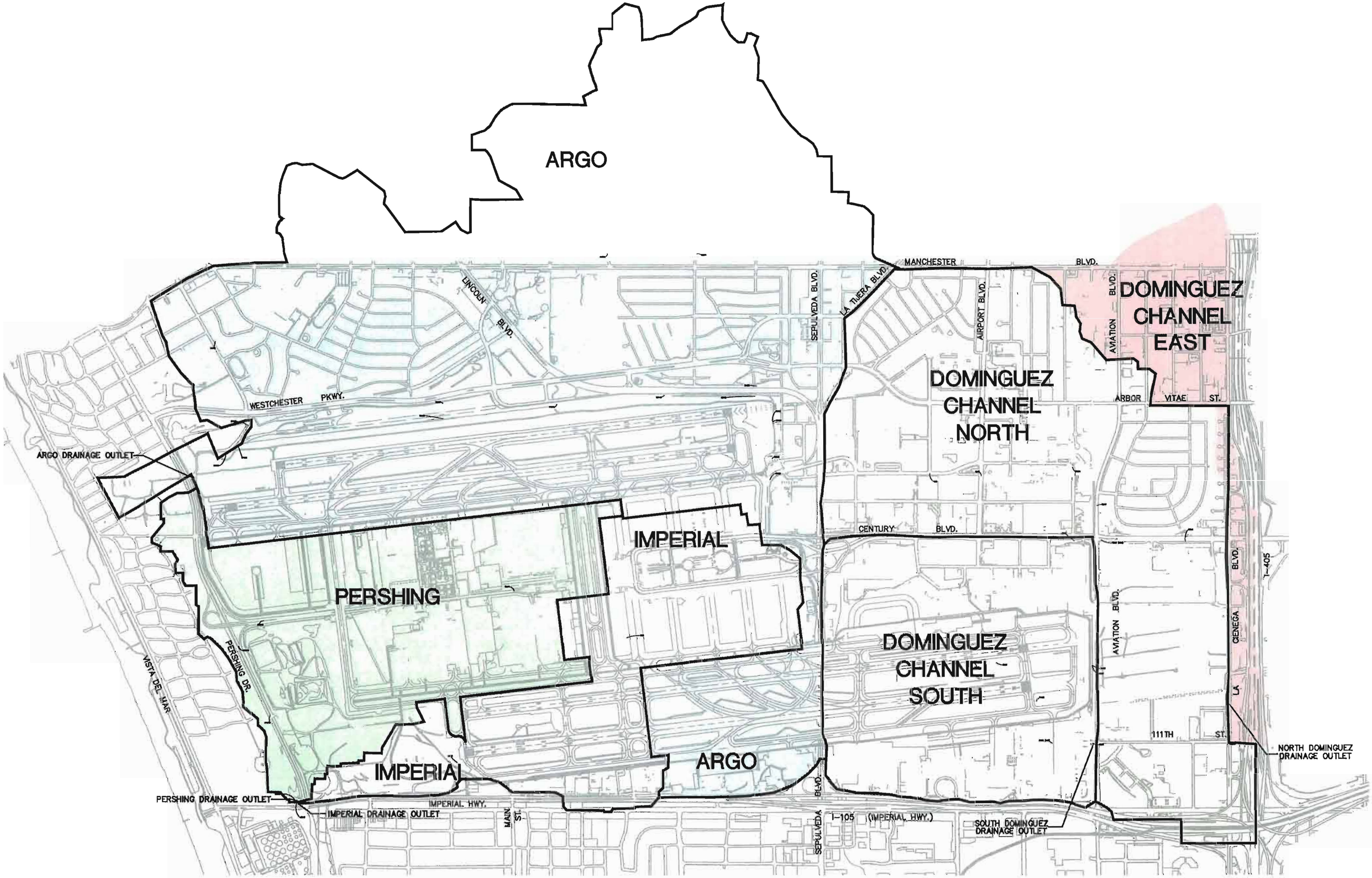


FIGURE 2-1

CONCEPTUAL DRAINAGE PLAN

DRAINAGE SUB-BASIN MAP

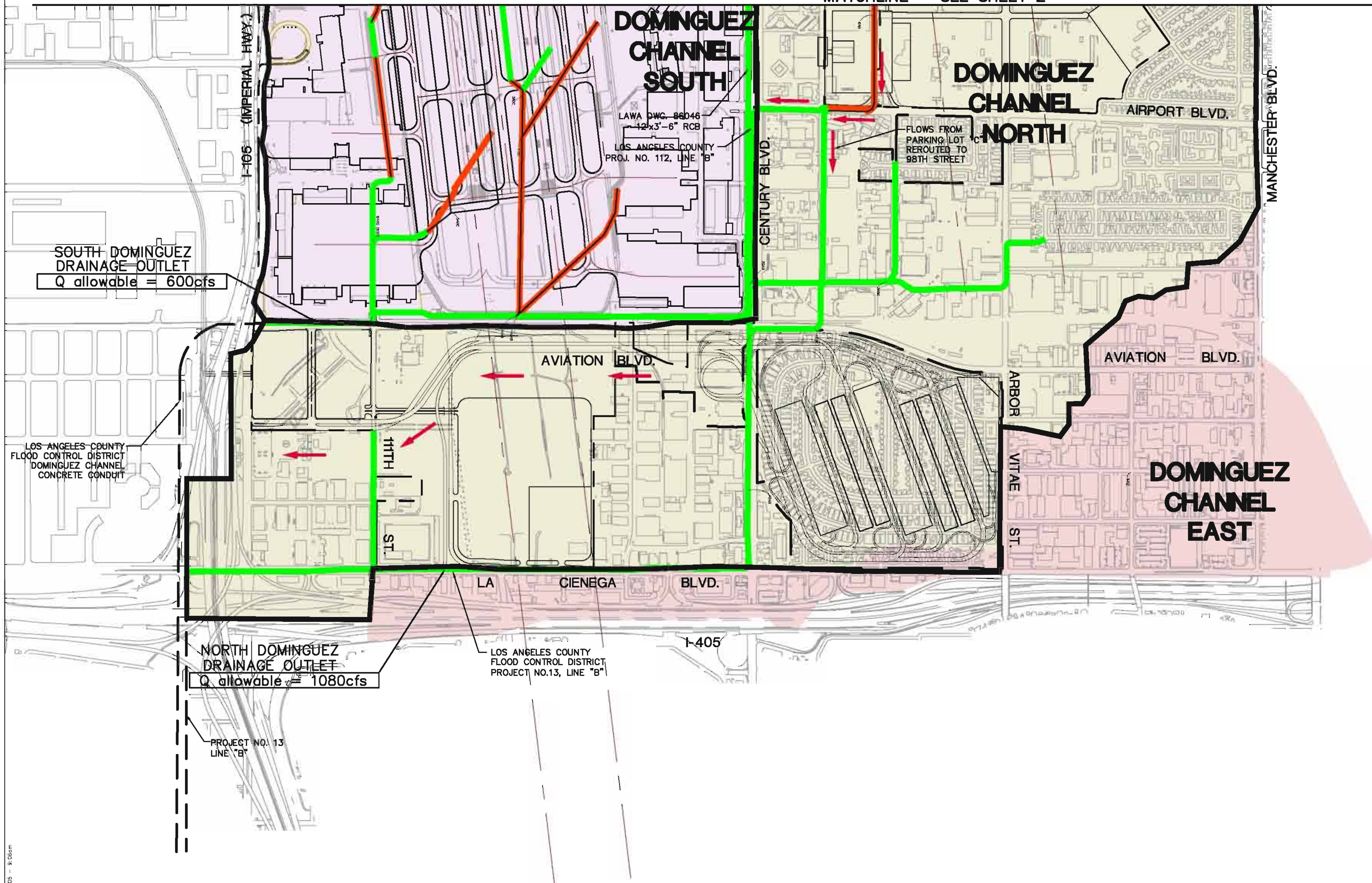
NOT TO SCALE

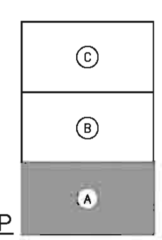
PSOMAS

DATE: 05-13-04 REVISED ON:
JOB No:1LAX030350 T. 08A2L
SHEET 1 OF 1

This page intentionally left blank.

MATCHLINE – SEE SHEET 2





KEY MAP

LEGEND:
- Q10 CAPACITY STORM DRAIN
- <Q10 CAPACITY STORM DRAIN
- OFFSITE STORM DRAIN

600' 300' 0' 600' 1200'
GRAPHIC SCALE
Note: For reduced sized prints, original scale is in inches

PIPE STATUS DETERMINED BY COMPARING PEAK FLOWS TO 90% QCAP VALUE

FIGURE 3-1
CONCEPTUAL DRAINAGE PLAN
EXISTING STORM DRAIN INFRASTRUCTURE
STATUS FOR PROPOSED CONDITION

PSOMAS

DATE: 05-11-04 REVISED ON:
JOB No:1LAX030350 T. 08A2L
SHEET 1 OF 3

This page intentionally left blank.

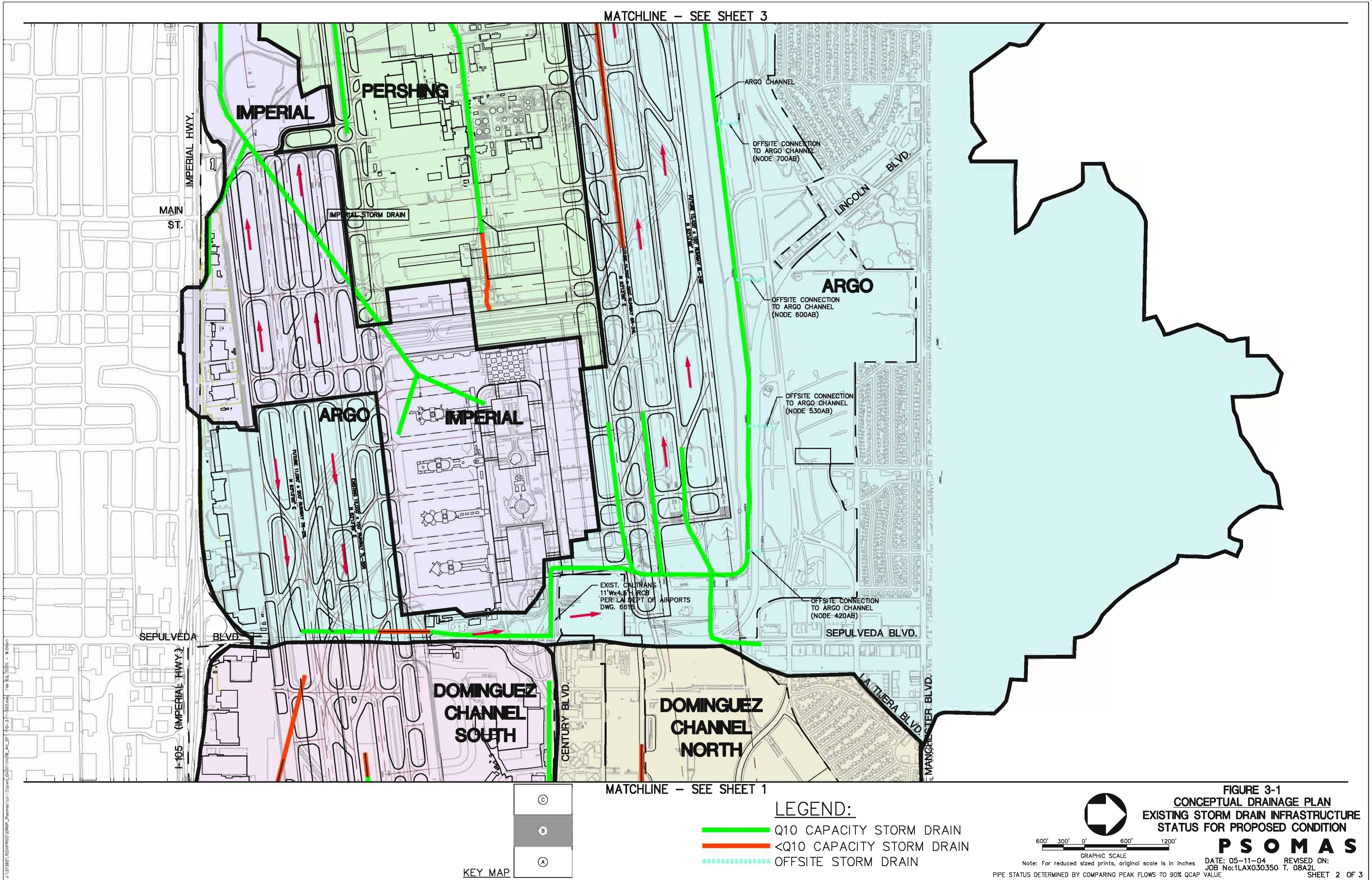


FIGURE 3-1
CONCEPTUAL DRAINAGE PLAN
EXISTING STORM DRAIN INFRASTRUCTURE
STATUS FOR PROPOSED CONDITION

PSOMAS

DATE: 05-11-04 REVISED ON:
JOB No:1LAX030350 T. 08A2L

SHEET 2 OF 3

This page intentionally left blank.

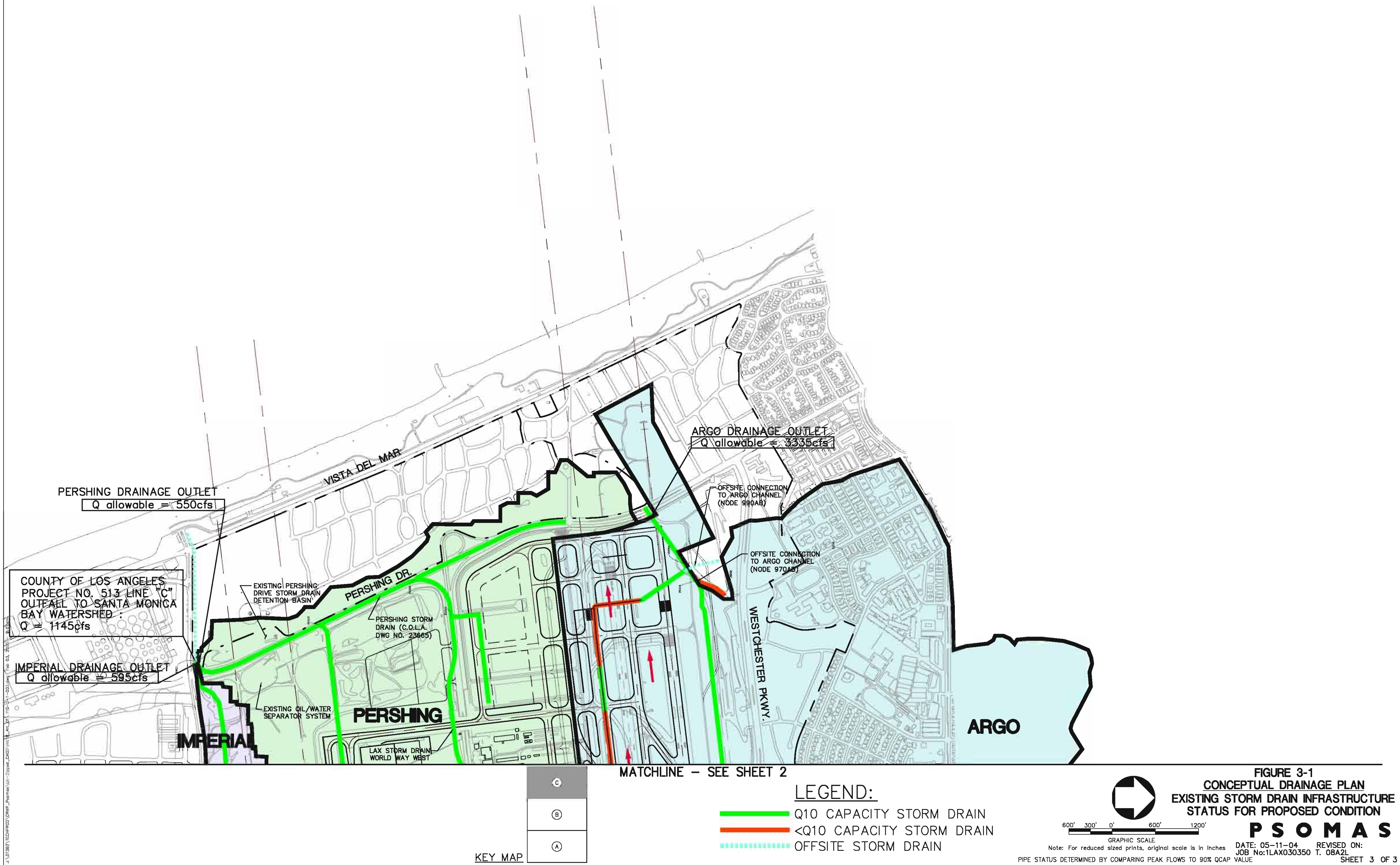
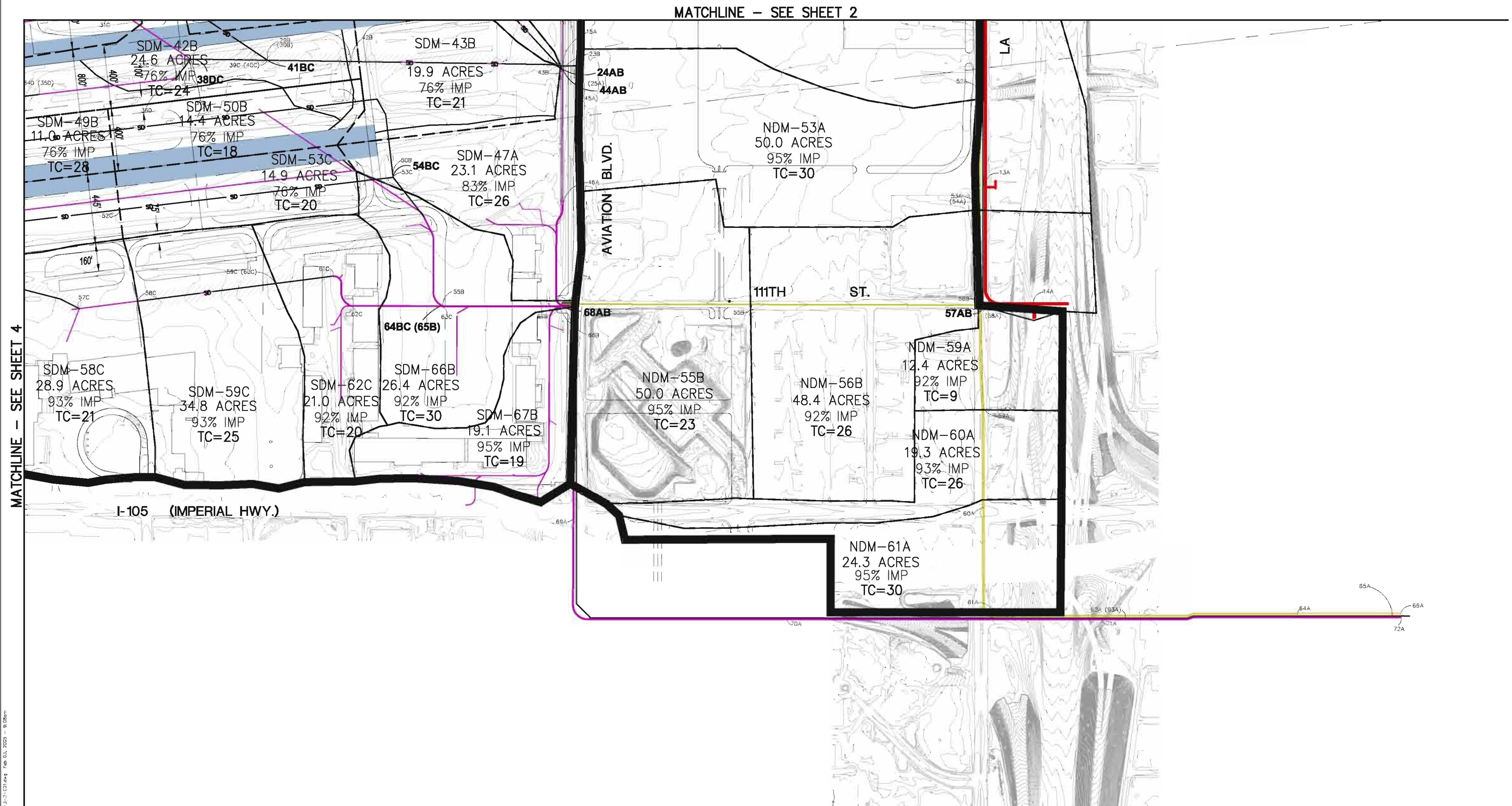


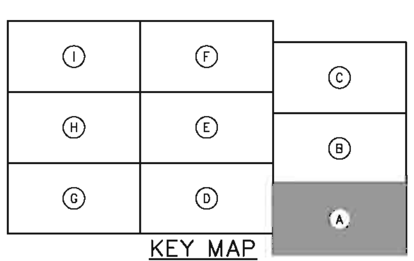
FIGURE 3-1
CONCEPTUAL DRAINAGE PLAN
EXISTING STORM DRAIN INFRASTRUCTURE STATUS FOR PROPOSED CONDITION

PSOMAS

DATE: 05-11-04 REVISED ON:
JOB No:1LAX030350 T. 08A2L
SHEET 3 OF 3

This page intentionally left blank.





GENERAL NOTES:

FOR DISCHARGE TABLE – PROPOSED STORM DRAIN SEE SHEET 9 OF 9 TABLE 1

LEGEND/ HYDROLOGIC DATA

50–YEAR 24–HOUR ISOHYET: 5.0
25–YEAR 24–HOUR ISOHYET: 4.39
10–YEAR 24–HOUR ISOHYET: 3.57

SD PROPOSED STORM DRAIN
DRAINAGE SUB–BASIN BOUNDARY
SUB–AREA BOUNDARY
SOIL GROUPS: 9,10,13,14,16,20
% IMPERVIOUS VALUES:

OPEN SPACE, SINGLE FAMILY RESID.= 0.42
RUNWAY, TAXIWAY–NORTH= 0.90
RUNWAY, TAXIWAY–SOUTH= 0.76
MULTI–FAMILY RESID.= 0.86
COMMERCIAL, OFFICE BUILDING, RESTAURANT= 0.91
OPERATIONS, FACILITIES, PARKING= 0.95
PROFESSIONAL BUILDING, HOTEL= 0.96
INDUSTRIAL= 0.91

300' 150' 0' 300' 600'
GRAPHIC SCALE
Note: For reduced sized prints, original scale is in inches

FIGURE 3-2
CONCEPTUAL DRAINAGE PLAN
HYDROLOGY MAP
PROPOSED CONDITION

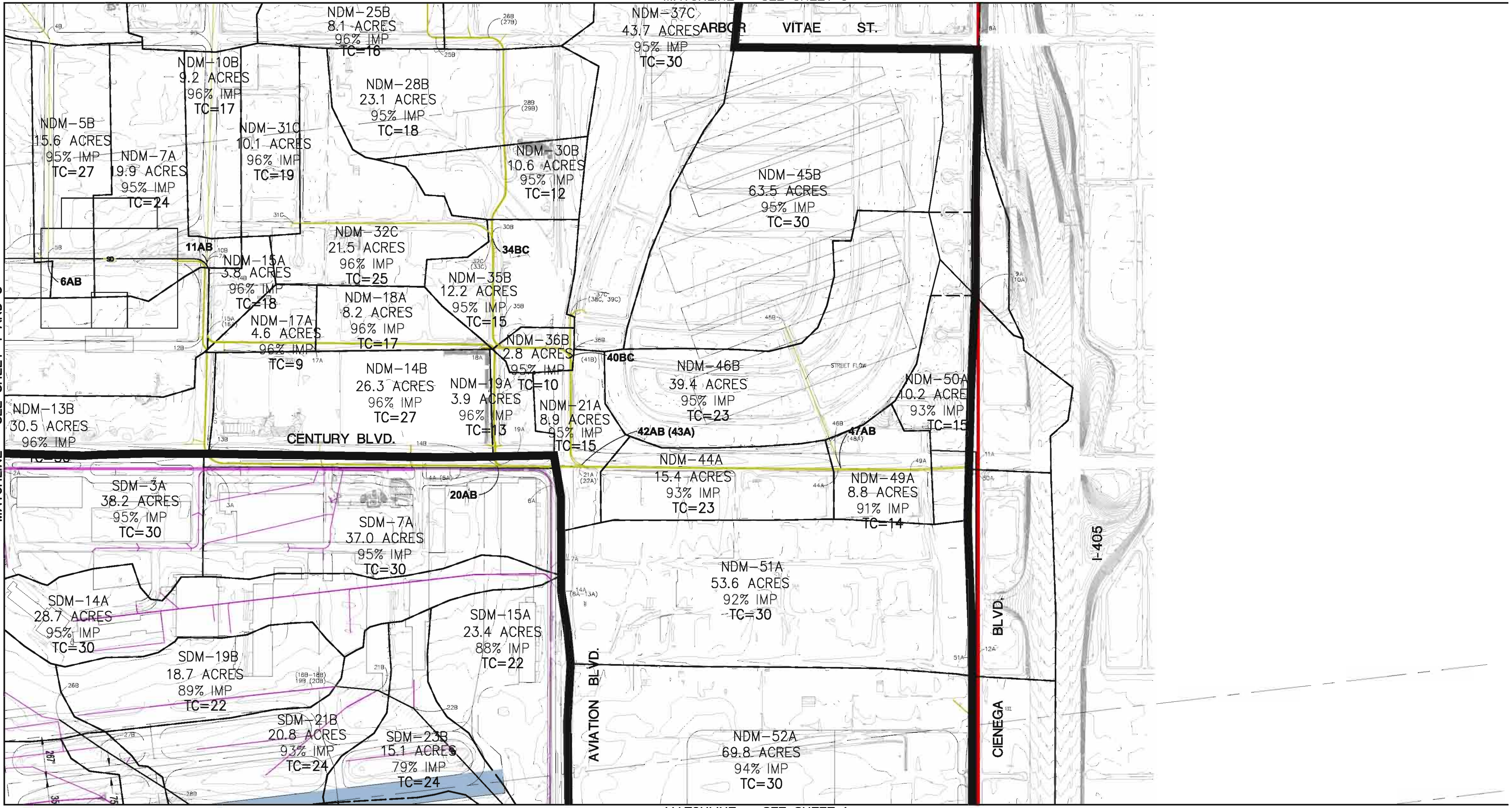
PSOMAS

DATE: 05–11–04 REVISED ON:
JOB No:1LAX030350 T. 08A2L
SHEET 1 OF 9

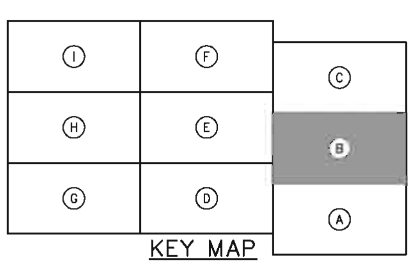
This page intentionally left blank.

MATCHLINE – SEE SHEET 3

MATCHLINE – SEE SHEET 4 AND 5



MATCHLINE – SEE SHEET 1



KEY MAP

GENERAL NOTES:

FOR DISCHARGE TABLE – PROPOSED STORM DRAIN SEE SHEET 9 OF 9 TABLE 1

LEGEND/ HYDROLOGIC DATA

50-YEAR 24-HOUR ISOHYET: 5.0
25-YEAR 24-HOUR ISOHYET: 4.39
10-YEAR 24-HOUR ISOHYET: 3.57

SD PROPOSED STORM DRAIN
DRAINAGE SUB-BASIN BOUNDARY
SUB-AREA BOUNDARY
SOIL GROUPS: 9,10,13,14,16,20
% IMPERVIOUS VALUES:

OPEN SPACE, SINGLE FAMILY RESID.= 0.42
RUNWAY, TAXIWAY-NORTH= 0.90
RUNWAY, TAXIWAY-SOUTH= 0.76
MULTI-FAMILY RESID.= 0.86
COMMERCIAL, OFFICE BUILDING, RESTAURANT= 0.91
OPERATIONS, FACILITIES, PARKING= 0.95
PROFESSIONAL BUILDING, HOTEL= 0.96
INDUSTRIAL= 0.91

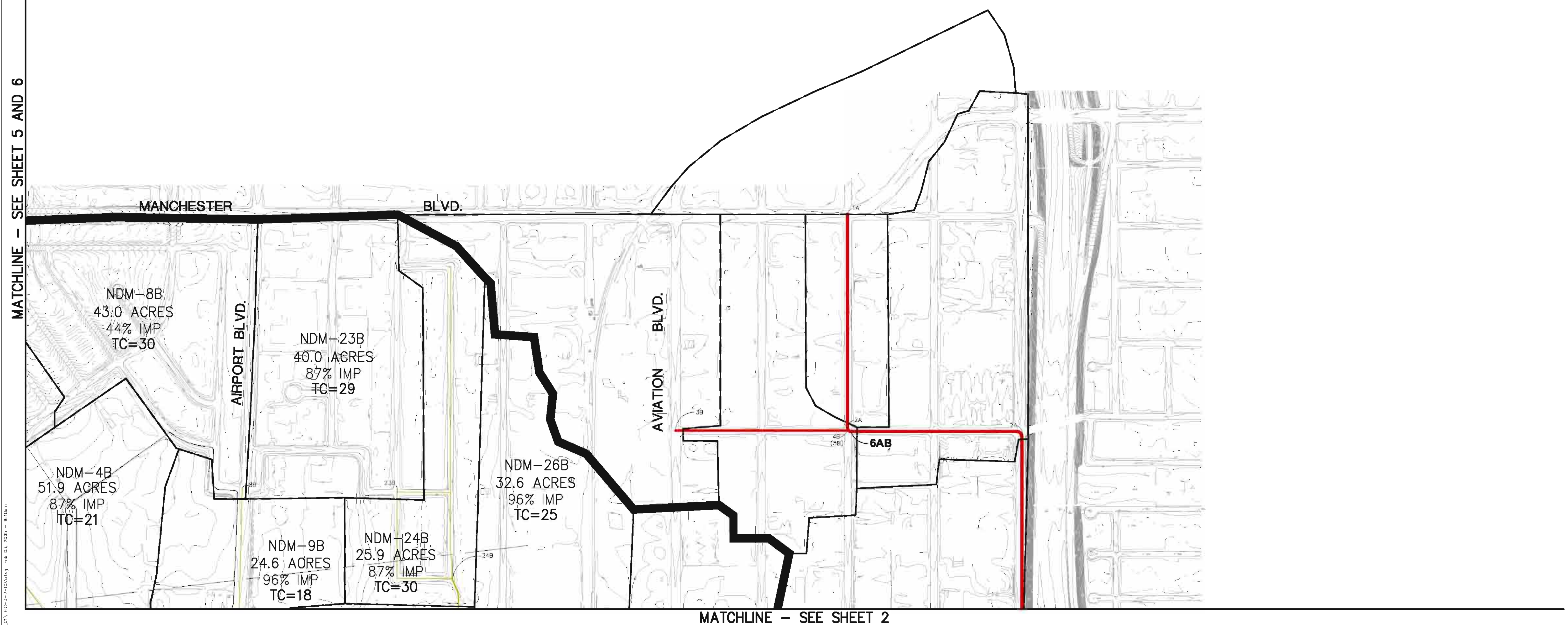
300' 150' 0' 300' 600'
GRAPHIC SCALE
Note: For reduced sized prints, original scale is in inches

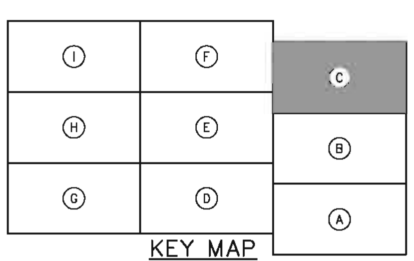
FIGURE 3-2
CONCEPTUAL DRAINAGE PLAN
HYDROLOGY MAP
PROPOSED CONDITION

PSOMAS

DATE: 05-11-04 REVISED ON:
JOB No:1LAX030350 T. 08A2L
SHEET 2 OF 9

This page intentionally left blank.





KEY MAP

GENERAL NOTES:

FOR DISCHARGE TABLE – PROPOSED STORM DRAIN SEE SHEET 9 OF 9 TABLE 1

LEGEND/ HYDROLOGIC DATA

50–YEAR 24–HOUR ISOHYET: 5.0
25–YEAR 24–HOUR ISOHYET: 4.39
10–YEAR 24–HOUR ISOHYET: 3.57

SD PROPOSED STORM DRAIN
DRAINAGE SUB–BASIN BOUNDARY
SUB–AREA BOUNDARY
SOIL GROUPS: 9,10,13,14,16,20
% IMPERVIOUS VALUES:

OPEN SPACE, SINGLE FAMILY RESID.= 0.42
RUNWAY, TAXIWAY–NORTH= 0.90
RUNWAY, TAXIWAY–SOUTH= 0.76
MULTI–FAMILY RESID.= 0.86
COMMERCIAL, OFFICE BUILDING, RESTAURANT= 0.91
OPERATIONS, FACILITIES, PARKING= 0.95
PROFESSIONAL BUILDING, HOTEL= 0.96
INDUSTRIAL= 0.91

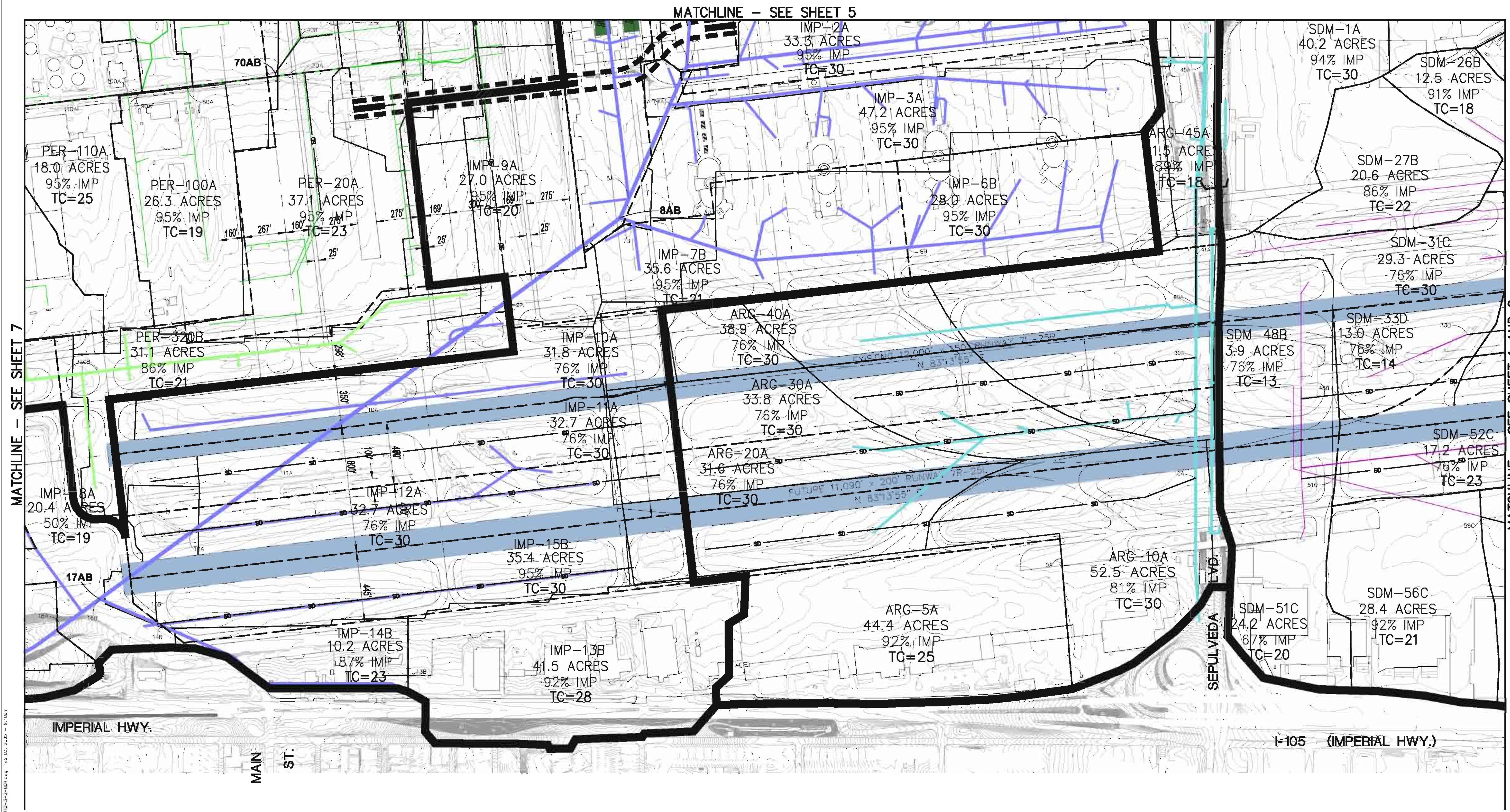
300' 150' 0' 300' 600'
GRAPHIC SCALE
Note: For reduced sized prints, original scale is in inches

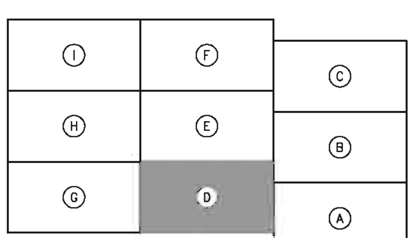
FIGURE 3-2
CONCEPTUAL DRAINAGE PLAN
HYDROLOGY MAP
PROPOSED CONDITION

PSOMAS

DATE: 05–11–04 REVISED ON:
JOB No:1LAX030350 T. 08A2L

This page intentionally left blank.





KEY MAP

GENERAL NOTES:

FOR DISCHARGE TABLE – PROPOSED STORM DRAIN SEE SHEET 9 OF 9 TABLE 1

LEGEND/ HYDROLOGIC DATA

50–YEAR 24–HOUR ISOHYET: 5.0
25–YEAR 24–HOUR ISOHYET: 4.39
10–YEAR 24–HOUR ISOHYET: 3.57

SD PROPOSED STORM DRAIN
DRAINAGE SUB–BASIN BOUNDARY
SUB–AREA BOUNDARY
SOIL GROUPS: 9,10,13,14,16,20
% IMPERVIOUS VALUES:

OPEN SPACE, SINGLE FAMILY RESID.= 0.42
RUNWAY, TAXIWAY–NORTH= 0.90
RUNWAY, TAXIWAY–SOUTH= 0.76
MULTI–FAMILY RESID.= 0.86
COMMERCIAL, OFFICE BUILDING, RESTAURANT= 0.91
OPERATIONS, FACILITIES, PARKING= 0.95
PROFESSIONAL BUILDING, HOTEL= 0.96
INDUSTRIAL= 0.91

300' 150' 0' 300' 600'
GRAPHIC SCALE
Note: For reduced sized prints, original scale is in inches

FIGURE 3-2
CONCEPTUAL DRAINAGE PLAN
HYDROLOGY MAP
PROPOSED CONDITION

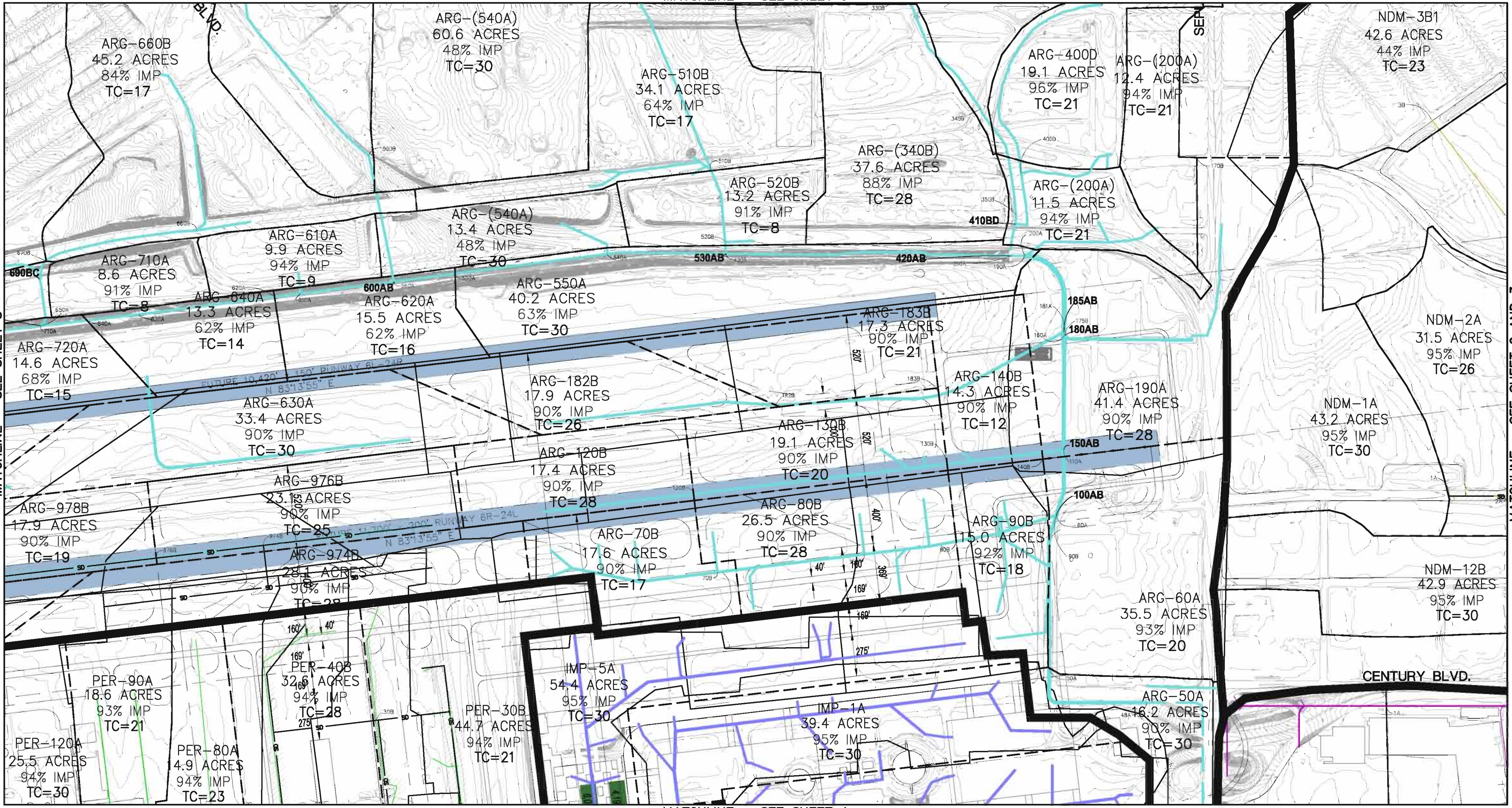
PSOMAS

DATE: 05–11–04 REVISED ON:
JOB No:1LAX030350 T. 08A2L
SHEET 4 OF 9

This page intentionally left blank.

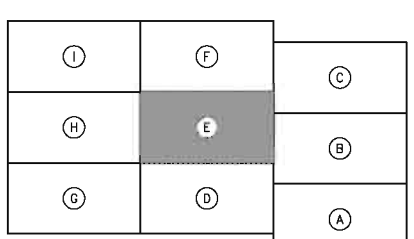
MATCHLINE – SEE SHEET 6

MATCHLINE – SEE SHEET 8



MATCHLINE – SEE SHEET 2 AND 3

MATCHLINE – SEE SHEET 4



KEY MAP

GENERAL NOTES:

FOR DISCHARGE TABLE – PROPOSED STORM DRAIN SEE SHEET 9 OF 9 TABLE 1

LEGEND/ HYDROLOGIC DATA

50-YEAR 24-HOUR ISOHYET: 5.0
25-YEAR 24-HOUR ISOHYET: 4.39
10-YEAR 24-HOUR ISOHYET: 3.57

SD PROPOSED STORM DRAIN
DRAINAGE SUB-BASIN BOUNDARY
SUB-AREA BOUNDARY
SOIL GROUPS: 9,10,13,14,16,20
% IMPERVIOUS VALUES:

OPEN SPACE, SINGLE FAMILY RESID.= 0.42
RUNWAY, TAXIWAY-NORTH= 0.90
RUNWAY, TAXIWAY-SOUTH= 0.76
MULTI-FAMILY RESID.= 0.86
COMMERCIAL, OFFICE BUILDING, RESTAURANT= 0.91
OPERATIONS, FACILITIES, PARKING= 0.95
PROFESSIONAL BUILDING, HOTEL= 0.96
INDUSTRIAL= 0.91

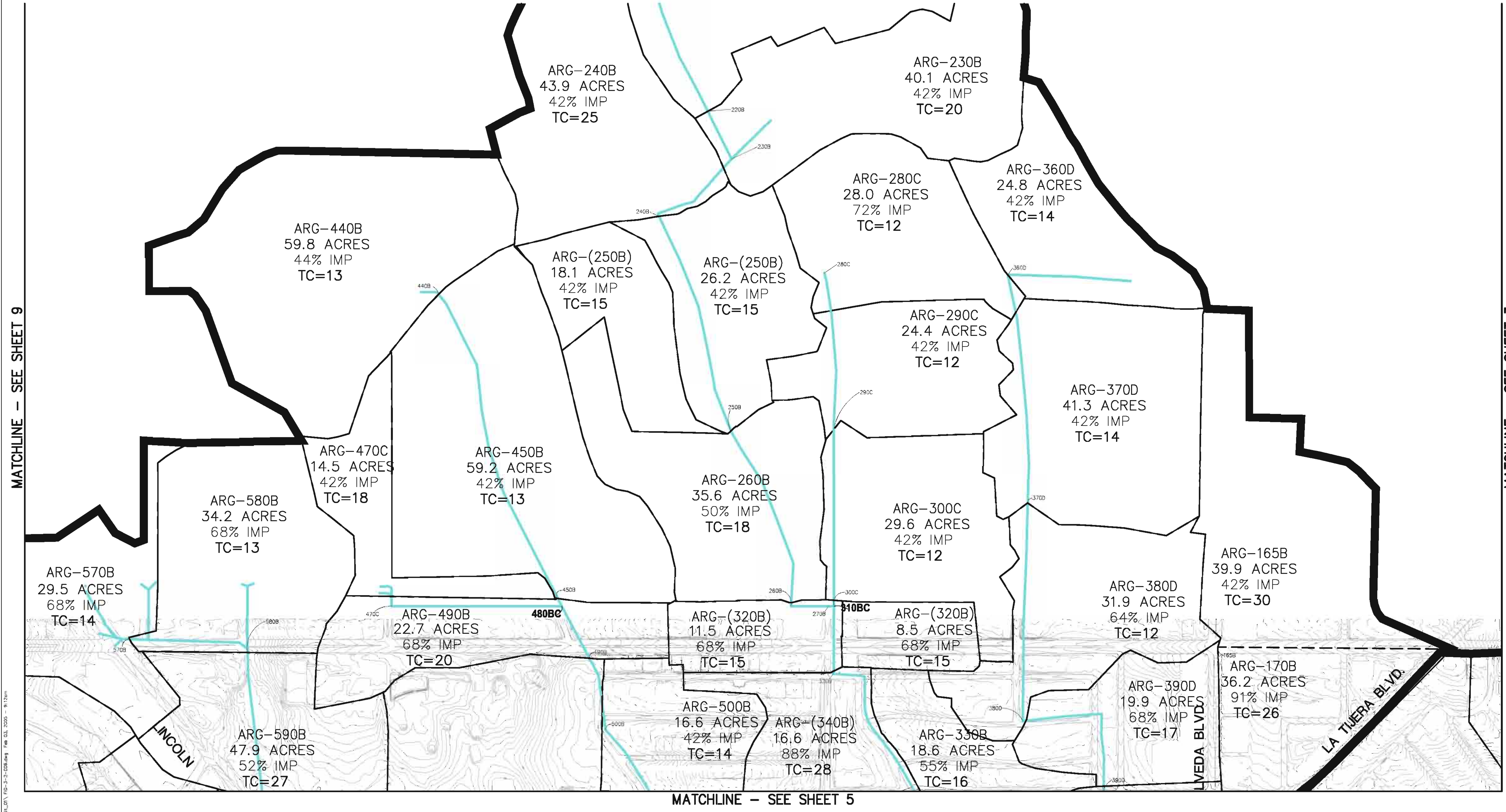
300' 150' 0' 300' 600'
GRAPHIC SCALE
Note: For reduced sized prints, original scale is in inches

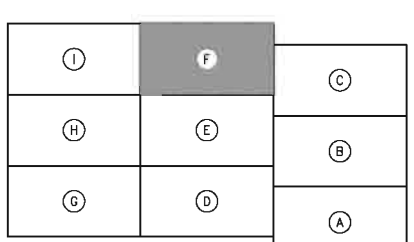
FIGURE 3-2
CONCEPTUAL DRAINAGE PLAN
HYDROLOGY MAP
PROPOSED CONDITION

PSOMAS

DATE: 05-11-04 REVISED ON:
JOB No:1LAX030350 T. 08A2L

This page intentionally left blank.





KEY MAP

GENERAL NOTES:

FOR DISCHARGE TABLE – PROPOSED STORM DRAIN SEE SHEET 9 OF 9 TABLE 1

LEGEND/ HYDROLOGIC DATA

50–YEAR 24–HOUR ISOHYET: 5.0
25–YEAR 24–HOUR ISOHYET: 4.39
10–YEAR 24–HOUR ISOHYET: 3.57

SD PROPOSED STORM DRAIN
DRAINAGE SUB–BASIN BOUNDARY
SUB–AREA BOUNDARY
SOIL GROUPS: 9,10,13,14,16,20
% IMPERVIOUS VALUES:

OPEN SPACE, SINGLE FAMILY RESID.= 0.42
RUNWAY, TAXIWAY–NORTH= 0.90
RUNWAY, TAXIWAY–SOUTH= 0.76
MULTI–FAMILY RESID.= 0.86
COMMERCIAL, OFFICE BUILDING, RESTAURANT= 0.91
OPERATIONS, FACILITIES, PARKING= 0.95
PROFESSIONAL BUILDING, HOTEL= 0.96
INDUSTRIAL= 0.91

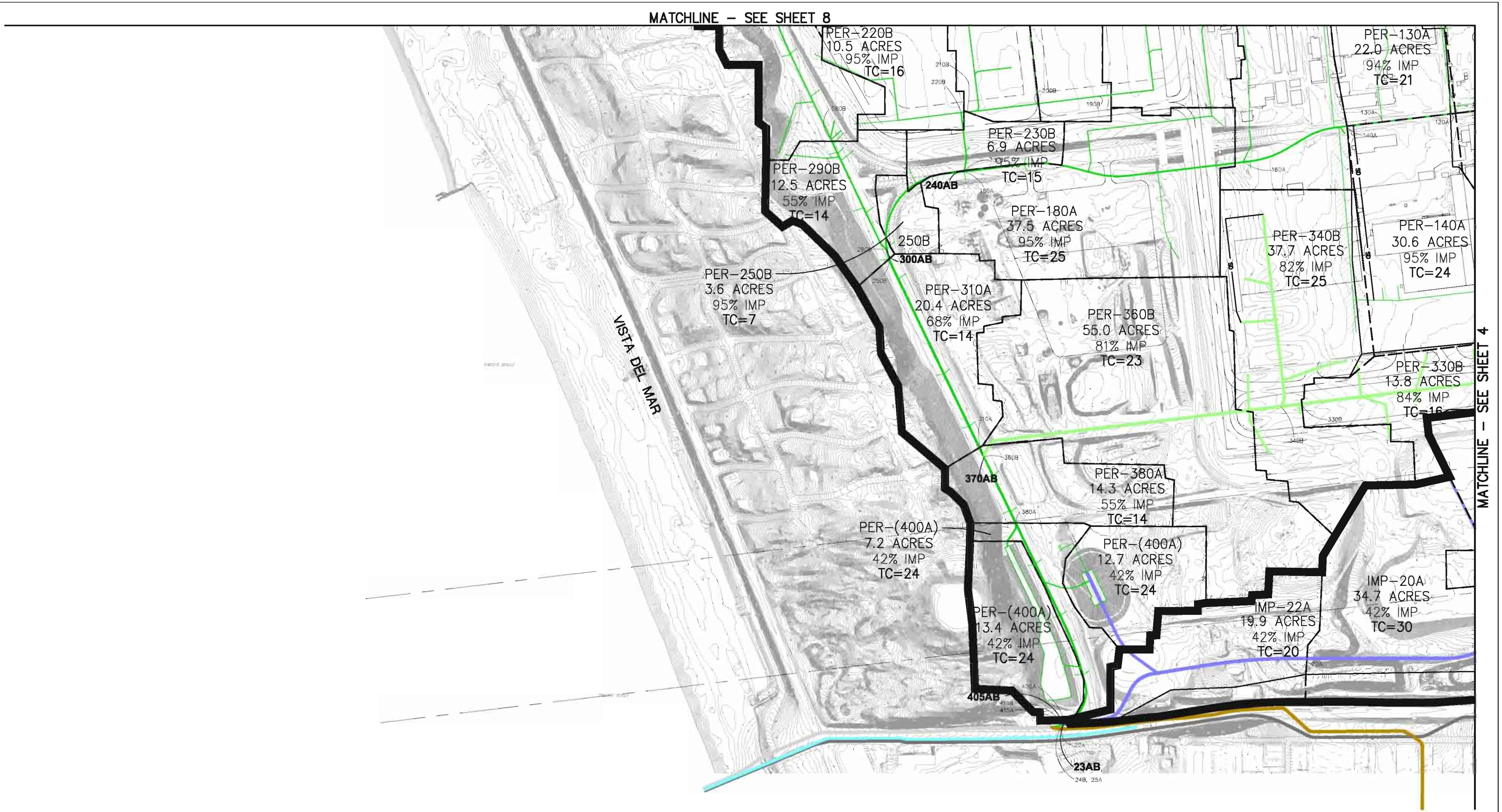
300' 150' 0' 300' 600'
GRAPHIC SCALE
Note: For reduced sized prints, original scale is in inches

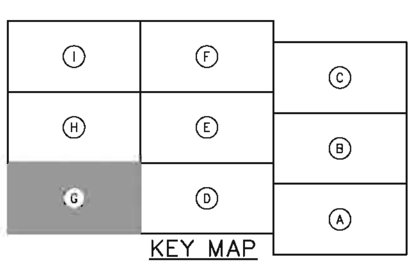
FIGURE 3-2
CONCEPTUAL DRAINAGE PLAN
HYDROLOGY MAP
PROPOSED CONDITION

PSOMAS

DATE: 05–11–04 REVISED ON:
JOB No:1LAX030350 T. 08A2L
SHEET 6 OF 9

This page intentionally left blank.





GENERAL NOTES:

FOR DISCHARGE TABLE – PROPOSED STORM DRAIN SEE SHEET 9 OF 9 TABLE 1

LEGEND/ HYDROLOGIC DATA

50–YEAR 24–HOUR ISOHYET: 5.0
25–YEAR 24–HOUR ISOHYET: 4.39
10–YEAR 24–HOUR ISOHYET: 3.57

SD PROPOSED STORM DRAIN
DRAINAGE SUB–BASIN BOUNDARY
SUB–AREA BOUNDARY
SOIL GROUPS: 9,10,13,14,16,20
% IMPERVIOUS VALUES:

OPEN SPACE, SINGLE FAMILY RESID.= 0.42
RUNWAY, TAXIWAY–NORTH= 0.90
RUNWAY, TAXIWAY–SOUTH= 0.76
MULTI–FAMILY RESID.= 0.86
COMMERCIAL, OFFICE BUILDING, RESTAURANT= 0.91
OPERATIONS, FACILITIES, PARKING= 0.95
PROFESSIONAL BUILDING, HOTEL= 0.96
INDUSTRIAL= 0.91

300' 150' 0' 300' 600'
GRAPHIC SCALE
Note: For reduced sized prints, original scale is in inches

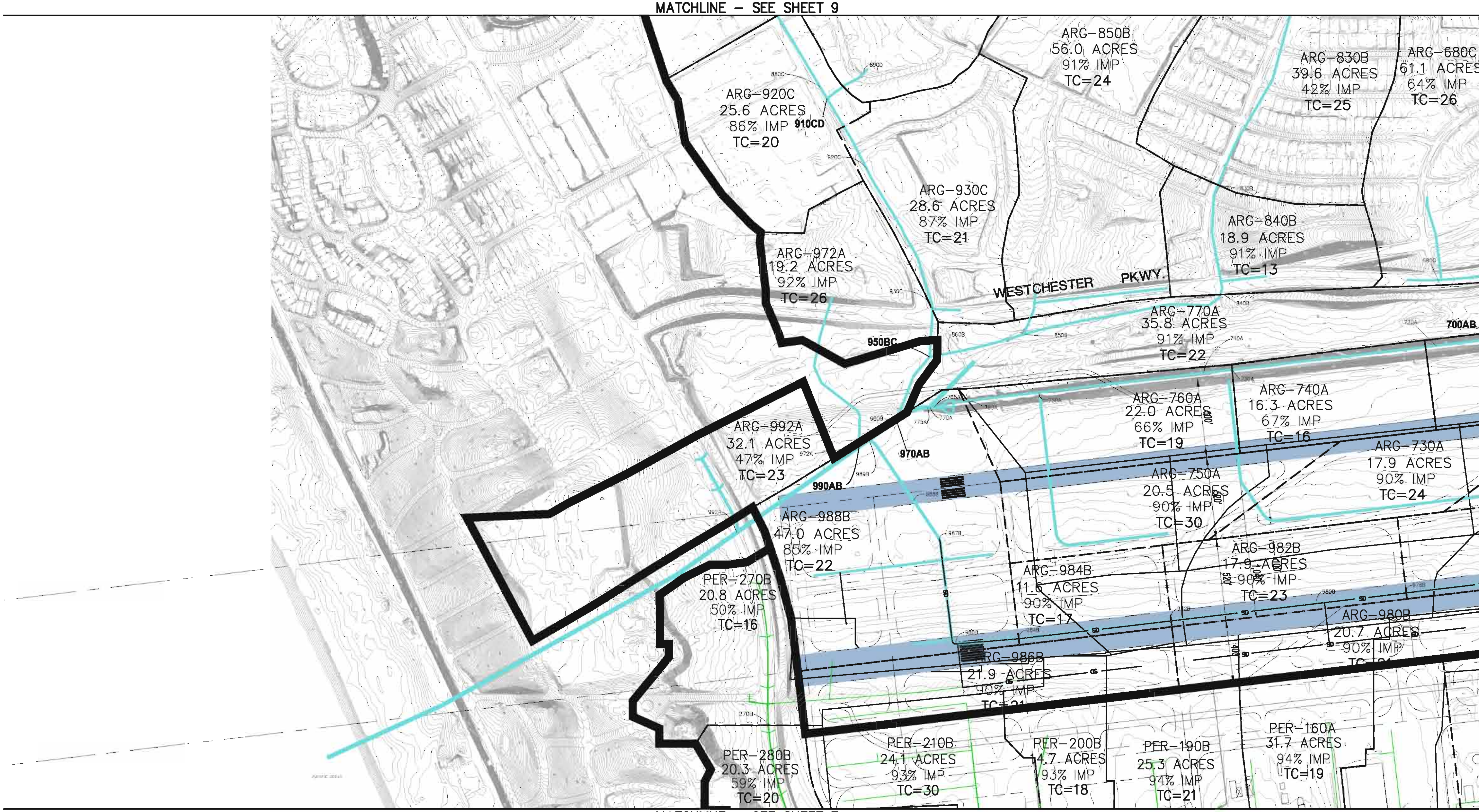
FIGURE 3-2
CONCEPTUAL DRAINAGE PLAN
HYDROLOGY MAP
PROPOSED CONDITION

PSOMAS

DATE: 05–11–04 REVISED ON:
JOB No:1LAX030350 T. 08A2L

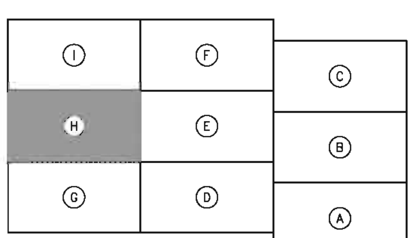
This page intentionally left blank.

MATCHLINE – SEE SHEET 9



MATCHLINE – SEE SHEET 5

MATCHLINE – SEE SHEET 7



KEY MAP

GENERAL NOTES:

FOR DISCHARGE TABLE – PROPOSED STORM DRAIN SEE SHEET 9 OF 9 TABLE 1

LEGEND/ HYDROLOGIC DATA

50–YEAR 24–HOUR ISOHYET: 5.0
25–YEAR 24–HOUR ISOHYET: 4.39
10–YEAR 24–HOUR ISOHYET: 3.57

SD PROPOSED STORM DRAIN
DRAINAGE SUB–BASIN BOUNDARY
SUB–AREA BOUNDARY
SOIL GROUPS: 9,10,13,14,16,20
% IMPERVIOUS VALUES:

OPEN SPACE, SINGLE FAMILY RESID.= 0.42
RUNWAY, TAXIWAY–NORTH= 0.90
RUNWAY, TAXIWAY–SOUTH= 0.76
MULTI–FAMILY RESID.= 0.86
COMMERCIAL, OFFICE BUILDING, RESTAURANT= 0.91
OPERATIONS, FACILITIES, PARKING= 0.95
PROFESSIONAL BUILDING, HOTEL= 0.96
INDUSTRIAL= 0.91

300' 150' 0' 300' 600'
GRAPHIC SCALE
Note: For reduced sized prints, original scale is in inches

FIGURE 3-2
CONCEPTUAL DRAINAGE PLAN
HYDROLOGY MAP
PROPOSED CONDITION

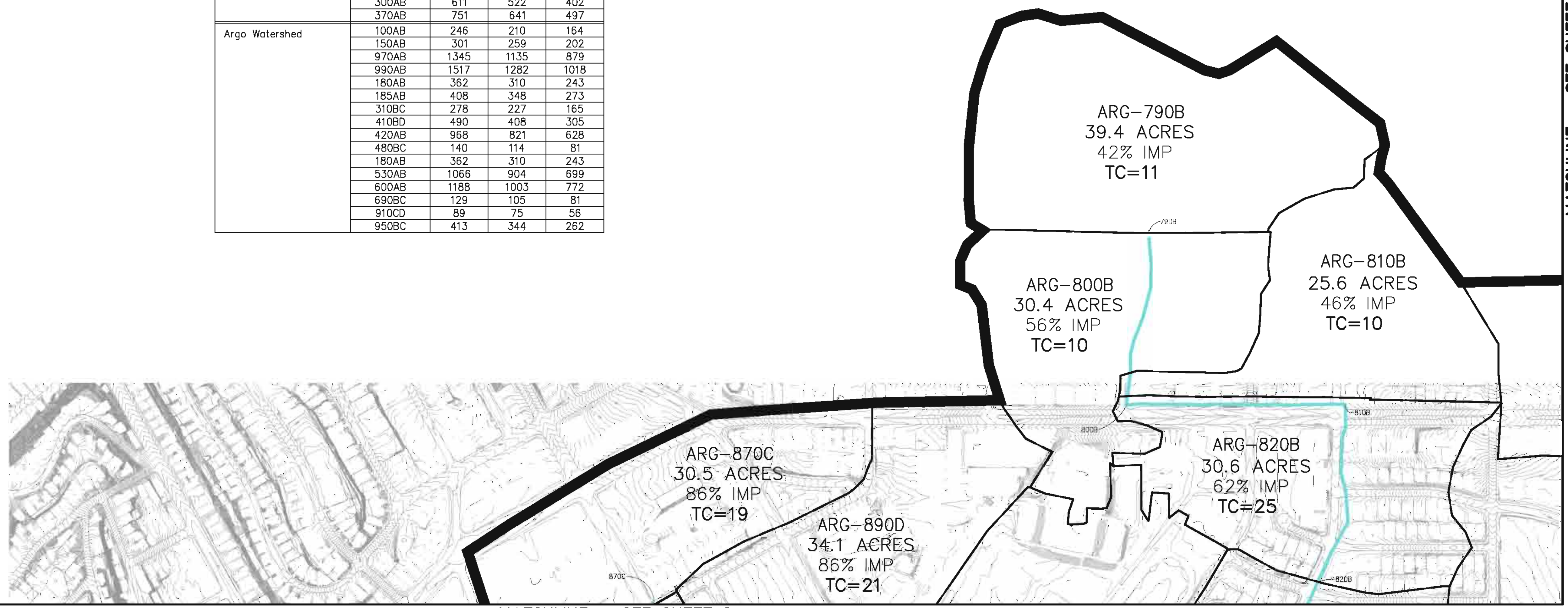
PSOMAS

DATE: 05–11–04 REVISED ON:
JOB No:1LAX030350 T. 08A2L

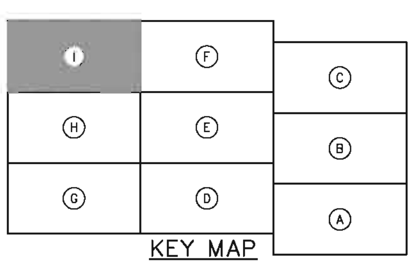
This page intentionally left blank.

TABLE 1

Discharge Table— Proposed Strom Drain				
	Confluence	Q50	Q25	Q10
Dominguez Channel North Watershed	6A	184	155	120
	11AB	276	234	181
	20AB	390	335	265
	34BC	215	184	146
	40BC	288	247	196
	42AB	666	569	458
	47AB	766	664	538
	57AB	944	813	646
Dominguez Channel South Watershed	24AB	NA	NA	NA
	38CD	54	46	36
	41BC	100	84	64
	44AB	386	329	257
	45AF	NA	NA	NA
	54BC	117	99	75
	64BC	268	226	174
	68AB	728	618	478
Imperial Watershed	8AB	296	259	208
	17AB	487	423	339
	23AB	NA	NA	NA
Pershing Watershed	70AB	159	134	103
	240AB	560	478	370
	300AB	611	522	402
	370AB	751	641	497
Argo Watershed	100AB	246	210	164
	150AB	301	259	202
	970AB	1345	1135	879
	990AB	1517	1282	1018
	180AB	362	310	243
	185AB	408	348	273
	310BC	278	227	165
	410BD	490	408	305
	420AB	968	821	628
	480BC	140	114	81
	180AB	362	310	243
	530AB	1066	904	699
	600AB	1188	1003	772
	690BC	129	105	81
	910CD	89	75	56
	950BC	413	344	262



MATCHLINE – SEE SHEET 8



KEY MAP

GENERAL NOTES:

FOR DISCHARGE TABLE – PROPOSED STORM DRAIN SEE SHEET 9 OF 9 TABLE 1

LEGEND/ HYDROLOGIC DATA

50–YEAR 24–HOUR ISOHYET: 5.0
25–YEAR 24–HOUR ISOHYET: 4.39
10–YEAR 24–HOUR ISOHYET: 3.57

SD — PROPOSED STORM DRAIN
DRAINAGE SUB–BASIN BOUNDARY
SUB–AREA BOUNDARY
SOIL GROUPS: 9,10,13,14,16,20
% IMPERVIOUS VALUES:

OPEN SPACE, SINGLE FAMILY RESID.= 0.42
RUNWAY, TAXIWAY–NORTH= 0.90
RUNWAY, TAXIWAY–SOUTH= 0.76
MULTI–FAMILY RESID.= 0.86
COMMERCIAL, OFFICE BUILDING, RESTAURANT= 0.91
OPERATIONS, FACILITIES, PARKING= 0.95
PROFESSIONAL BUILDING, HOTEL= 0.96
INDUSTRIAL= 0.91

300' 150' 0' 300' 600'
GRAPHIC SCALE
Note: For reduced sized prints, original scale is in inches

FIGURE 3-2
CONCEPTUAL DRAINAGE PLAN
HYDROLOGY MAP
PROPOSED CONDITION

PSOMAS

DATE: 05-11-04 REVISED ON:
JOB No:1LAX030350 T. 08A2L
SHEET 9 OF 9

This page intentionally left blank.

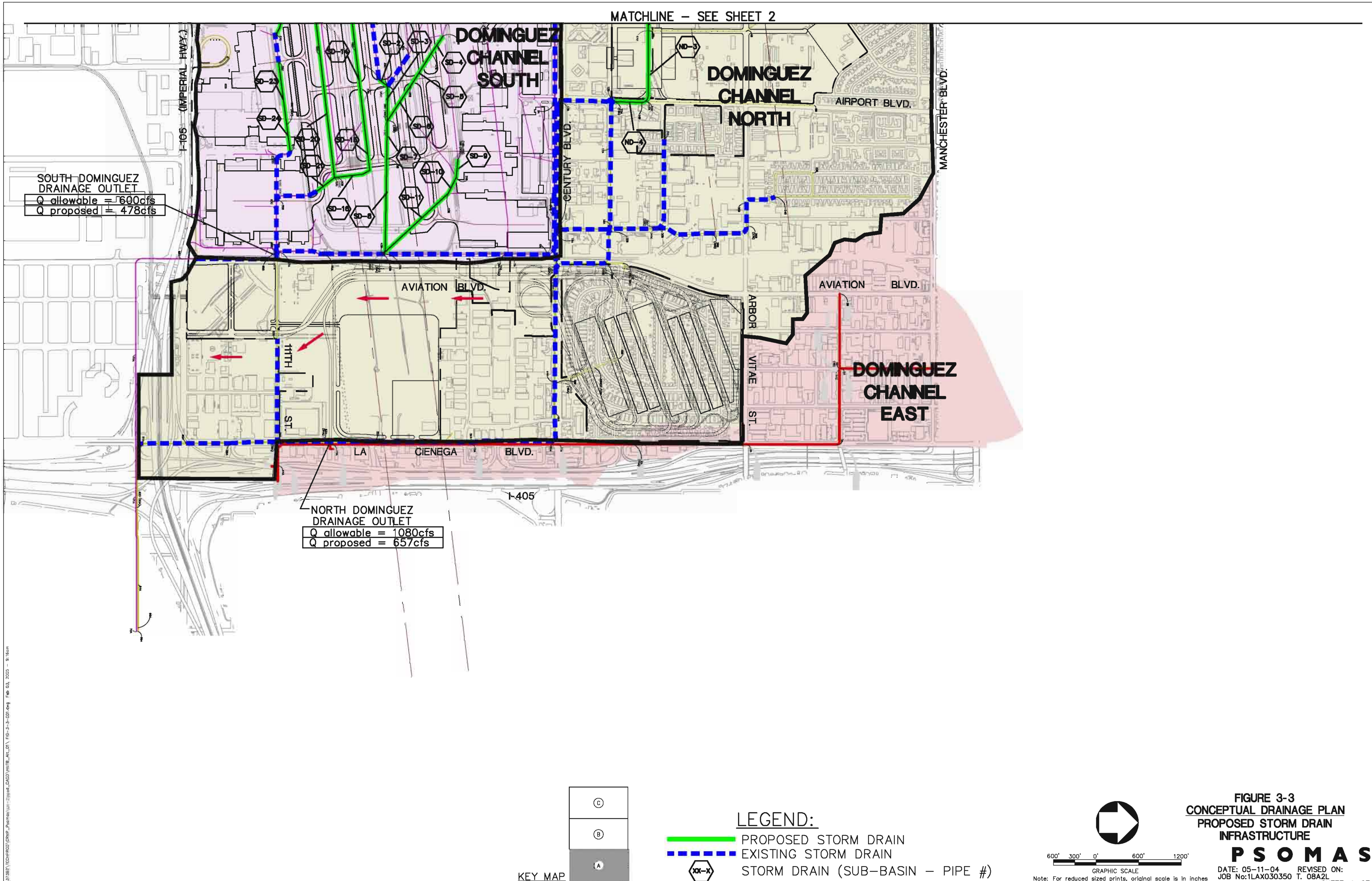


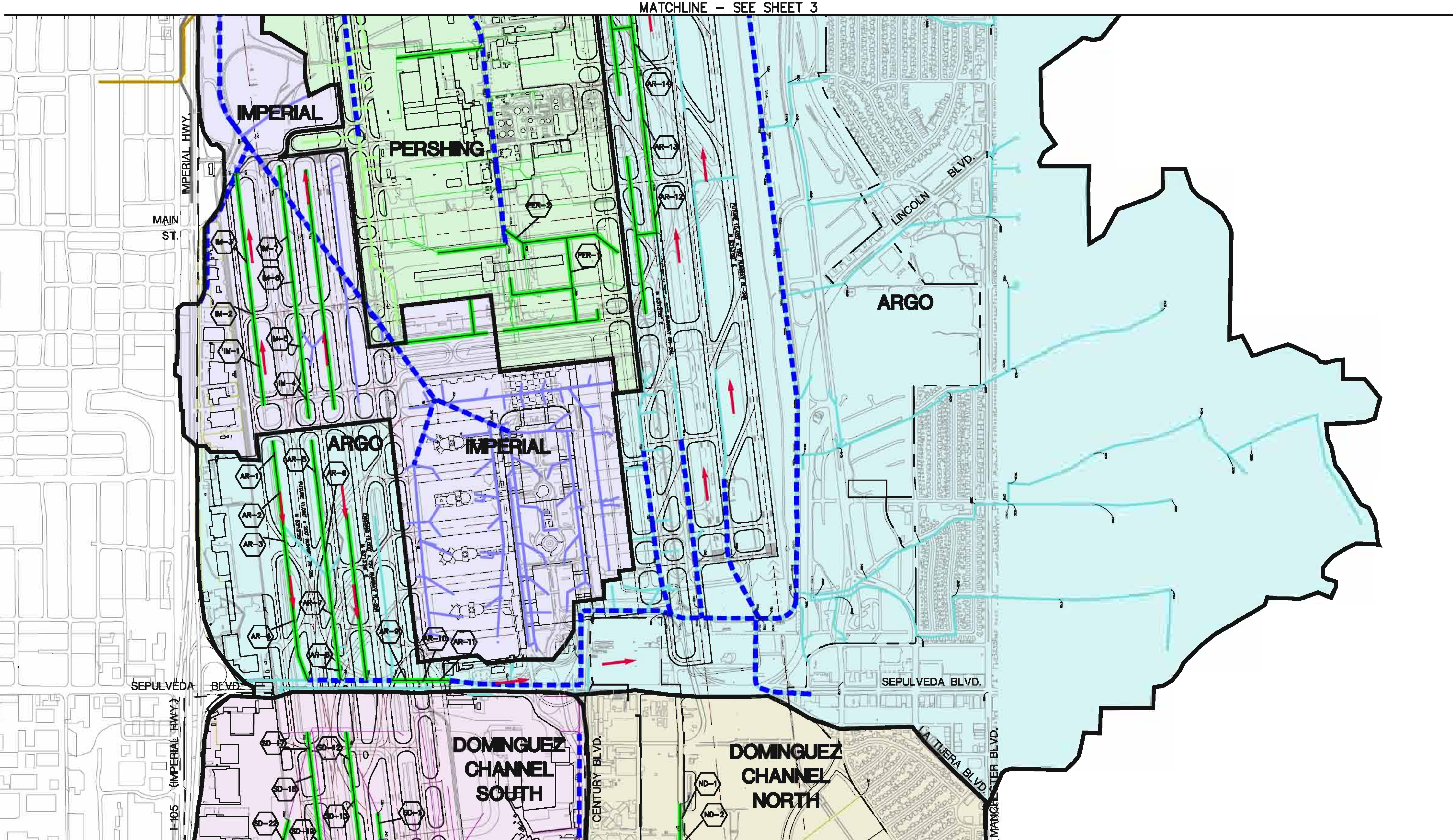
FIGURE 3-3
CONCEPTUAL DRAINAGE PLAN
PROPOSED STORM DRAIN INFRASTRUCTURE

PSOMAS

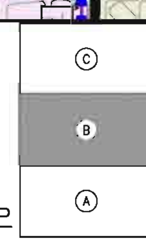
DATE: 05-11-04 REVISED ON:
JOB No:1LAX030350 T. 08A2L
SHEET 1 OF 3

This page intentionally left blank.

MATCHLINE – SEE SHEET 3



MATCHLINE – SEE SHEET 1



KEY MAP

LEGEND:

PROPOSED STORM DRAIN

EXISTING STORM DRAIN

XX-X STORM DRAIN (SUB-BASIN – PIPE #)

600' 300' 0' 600' 1200'

GRAPHIC SCALE

Note: For reduced sized prints, original scale is in inches

PIPE STATUS DETERMINED BY COMPARING PEAK FLOWS TO 90% QCAP VALUE

FIGURE 3-3

CONCEPTUAL DRAINAGE PLAN

PROPOSED STORM DRAIN INFRASTRUCTURE

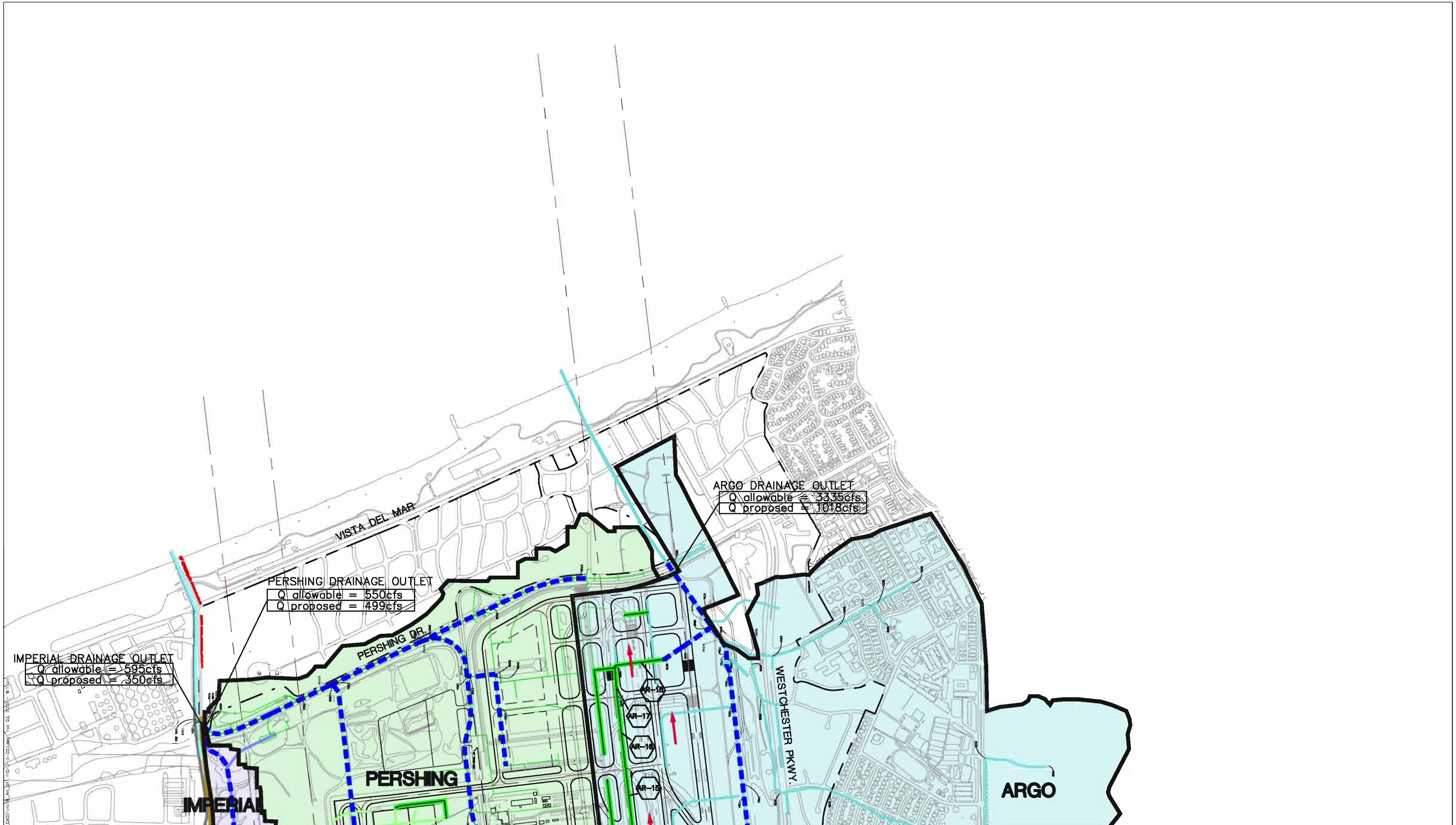
PSOMAS

DATE: 05-11-04 REVISED ON:

JOB No:1LAX030350 T. 08A2L

SHEET 2 OF 3

This page intentionally left blank.



MATCHLINE – SEE SHEET 2

KEY MAP

C

B

A

LEGEND:

PROPOSED STORM DRAIN

EXISTING STORM DRAIN

XX–X STORM DRAIN (SUB–BASIN – PIPE #)

600' 300' 0' 600' 1200'

GRAPHIC SCALE

Note: For reduced sized prints, original scale is in inches

PIPE STATUS DETERMINED BY COMPARING PEAK FLOWS TO 90% QCAP VALUE

FIGURE 3-3

CONCEPTUAL DRAINAGE PLAN

PROPOSED STORM DRAIN INFRASTRUCTURE

PSOMAS

DATE: 05-11-04 REVISED ON:

JOB No:1LAX030350 T. 08A2L

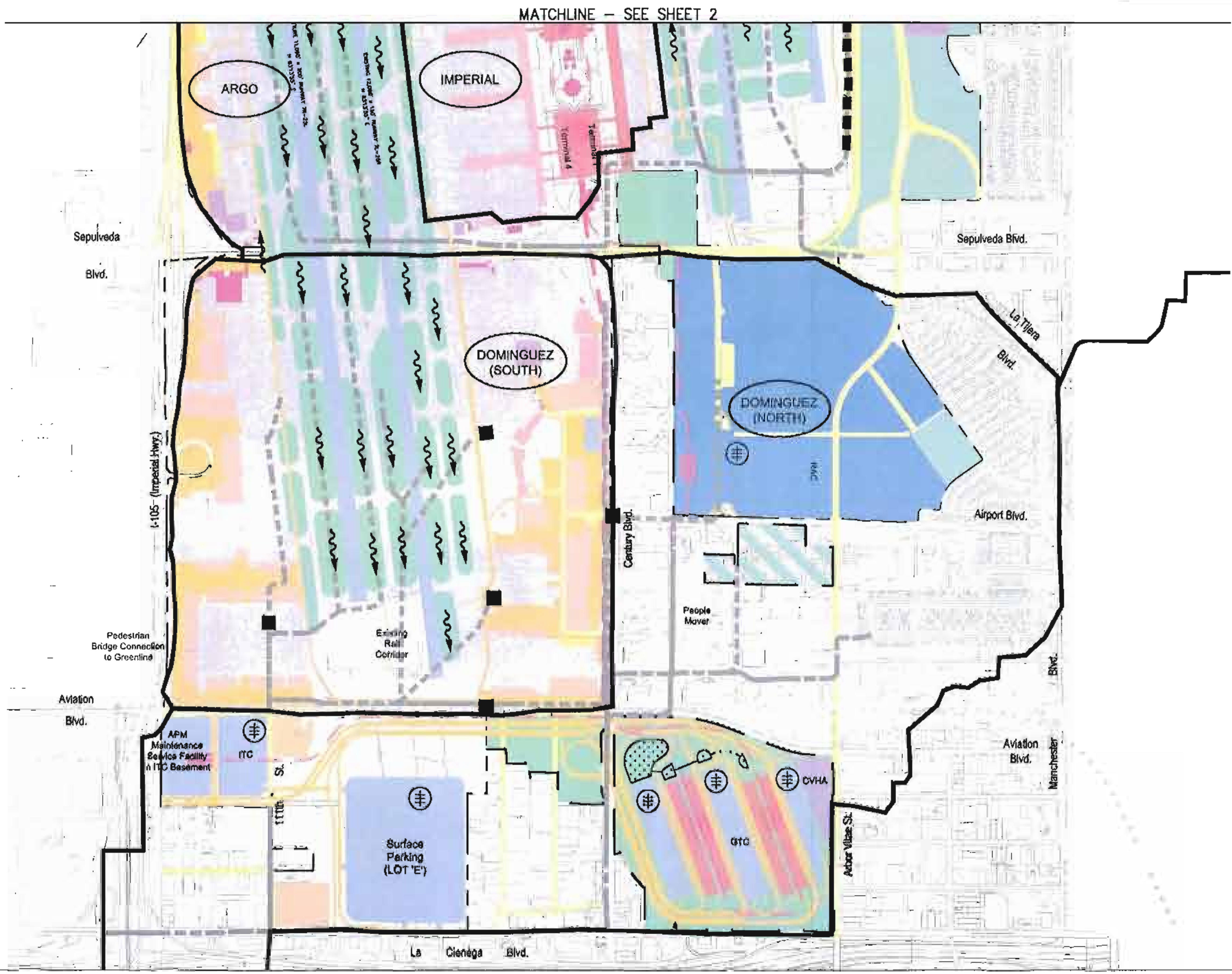
SHEET 3 OF 3

This page intentionally left blank.

Appendix B
Water Quality BMPs

- **Land Use Based Ratings**
- **Storm Water BMP Costs**

This page intentionally left blank.



RECOMMENDED TREATMENT CONTROL BMP OPTIONS

Site Location	Predominant land Use (s)	Project Specific BMP's	Sub-Regional BMP's	Regional BMP's[A]
Dominguez North Sub-Area				
GTC	Parking	Drain Inserts	Bioretention	N/A
Parking Lot E	Parking	Drain Inserts	Vegetated Swales/ Bioretention	N/A
ITC	Parking	Drain Inserts	Bioretention (roof)	N/A
RAC	Parking	Drain Inserts	Vegetated Swales/ Bioretention	N/A
Dominguez South Sub-Area				
Runway	Airport	Drain Inserts	Vegetated Swales	N/A
Aprons	Airport	Drain Inserts / Water Quality Inlets[B]	Media Filters[B]	N/A
Argo Sub-Area				
Airport, Non-Runway	Airport	Drain Inserts / Water Quality Inlets[B]	Media Filters[B]	Detention-Infiltration[C]
Runways	Airport	Drain Inserts	Vegetated Swales	Detention-Infiltration[C]
Off-Site	All	N/A	N/A	Detention-Infiltration[C]
Pershing Sub-Area				
Total Pershing	Airport, O/S, Parking	Drain Inserts / Water Quality Inlets[B]	Media Filters[B]	Extended Detention/ Retention[D]
Imperial Sub-Area				
Runway	Airport	Drain Inserts	Vegetated Swales	N/A
Non-Runway	Airport, Comm, O/S	Drain Inserts / Water Quality Inlets[B]	Vegetated Swales/ Bioretention Media Filters[D]	Extended Detention/ Retention[D]

KEY MAP

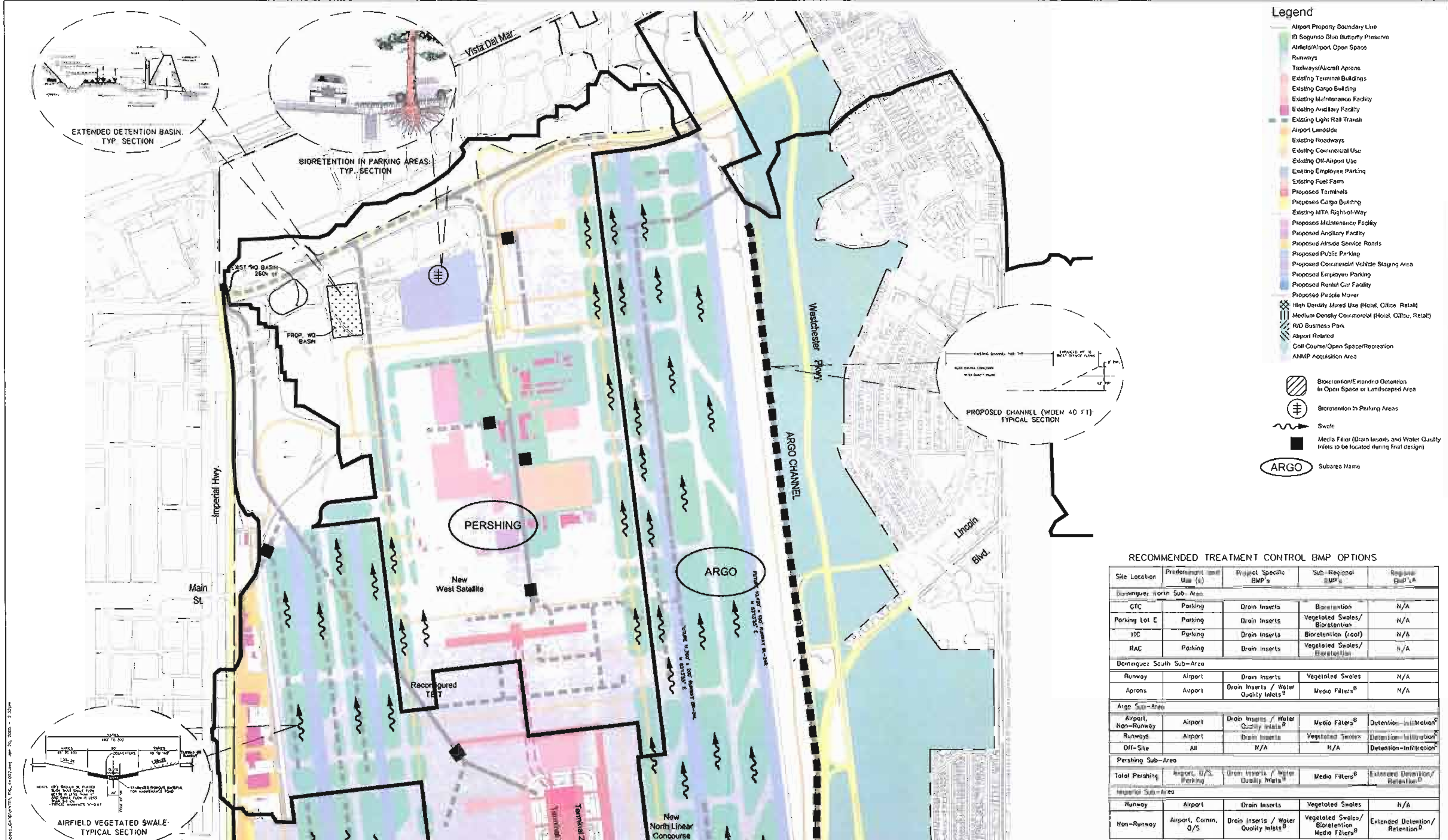
600' 300' 0' 600' 1200'
GRAPHIC SCALE
Note: For reduced sized prints, original scale is in inches

FIGURE 4-2
RECOMMENDED TREATMENT CONTROL BMP OPTIONS

Los Angeles International Airport

2015 Alternative D

This page intentionally left blank.



RECOMMENDED TREATMENT CONTROL BMP OPTIONS

Site Location	Predominant Land Use (s)	Project Specific BMP's	Sub-Regional BMP's	Regional BMP's[A]
Dominguez North Sub-Area				
GTC	Parking	Drain Inserts	Bioretention	N/A
Parking Lot E	Parking	Drain Inserts	Vegetated Swales/ Bioretention	N/A
ITC	Parking	Drain Inserts	Bioretention (roof)	N/A
RAC	Parking	Drain Inserts	Vegetated Swales/ Bioretention	N/A
Dominguez South Sub-Area				
Runway	Airport	Drain Inserts	Vegetated Swales	N/A
Aprons	Airport	Drain Inserts / Water Quality Inlets[B]	Media Filters[B]	N/A
Argo Sub-Area				
Airport, Non-Runway	Airport	Drain Inserts / Water Quality Inlets[B]	Media Filters[B]	Detention-Infiltration[C]
Runways	Airport	Drain Inserts	Vegetated Swales	Detention-Infiltration[C]
Off-Site	All	N/A	N/A	Detention-Infiltration[C]
Pershing Sub-Area				
Total Pershing	Airport, O/S, Parking	Drain Inserts / Water Quality Inlets[B]	Media Filters[B]	Extended Detention/ Retention[D]
Imperial Sub-Area				
Runway	Airport	Drain Inserts	Vegetated Swales	N/A
Non-Runway	Airport, Comm, O/S	Drain Inserts / Water Quality Inlets[B]	Vegetated Swales/ Bioretention Media Filters[B]	Extended Detention/ Retention[D]

FIGURE 4-2
RECOMMENDED TREATMENT CONTROL
BMP OPTIONS

Los Angeles International Airport

2015 Alternative D

This page intentionally left blank.

Weighting Procedure to Determine Land Use Based Ratings for BMPs

Land use based ratings for the BMPs were determined by the following procedure.

The constituent ratings for a given land use (summarized in Table 4.2-5) were multiplied by the BMP removal ratings for the constituents.

Sediment rating For Open Space (2)	X	Removal Efficiency rating For Vegetated Swales (2)	=	4
Nutrients rating For Open Space (2)	X	Removal Efficiency rating For Vegetated Swales (1)	=	2
Heavy Metals rating For Open Space (1)	X	Removal Efficiency rating For Vegetated Swales (2)	=	2
Organics rating For Open Space (1)	X	Removal Efficiency rating For Vegetated Swales (2)	=	2
Trash/Debris rating For Open Space (2)	X	Removal Efficiency rating For Vegetated Swales (1)	=	2
Oxygen Demanding Substances rating For Open Space (1)	X	Removal Efficiency rating For Vegetated Swales (1)	=	1
Oils/Grease rating For Open Space (1)	X	Removal Efficiency rating For Vegetated Swales (2)	=	2
Bacteria/Viruses rating For Open Space (2)	X	Removal Efficiency rating For Vegetated Swales (1)	=	2

These factors were then averaged, and the BMP rating was derived by taking the square root of this average.

For Open Space and Vegetated Swales

Average product of Constituent Rating and Removal Efficiency = 2.1

BMP rating of Vegetated Swales for Open Space = 1.5

This procedure was applied for all of the identified land uses and potential BMPs to get land use based ratings.

Stormwater BMP Costs
Upper Range

BMP			WQ Volume			Unit Costs (per m^3 treated)		
Location	Category	Type	(ac-ft)	(ft^3)	(m^3)	Construction	Present Value O&M	Life Cycle
Argo								
Airport: Non-Airfield	On-site	Drainage Inserts	16	712,751	20,183	$ 15	$ 29	$ 44
	Planning	Oil/Water Separators				$ 1,970	$ 21	$ 1,991
	Regional	Detention/Infiltration				$ 35	$ 5	$ 40
Airfield	On-site	Drainage Inserts	36	1,587,218	44,945	$ 15	$ 29	$ 44
	Planning	Biofilter Swales				$ 20	$ 19	$ 39
Off-Site	Regional	Detention/Infiltration	109	4,731,705	133,987	$ 35	$ 5	$ 40
Imperial								
Non-Airfield	On-site	Drainage Inserts	23	984,275	27,872	$ 15	$ 29	$ 44
	Planning	Biofilter Swales				$ 20	$ 19	$ 39
		Bioretention				$ 20	$ 19	$ 39
		Oil/Water Separators				$ 1,970	$ 21	$ 1,991
	Regional	Retention				$ 35	$ 5	$ 40
Airfield	On-site	Drainage Inserts	12	509,108	14,416	$ 15	$ 29	$ 44
	Planning	Biofilter Swales				$ 20	$ 19	$ 39
Pershing								
Total	On-site	Drainage Inserts	56	2,427,744	68,746	$ 15	$ 29	$ 44
	Planning	Oil/Water Separators				$ 1,970	$ 21	$ 1,991
	Regional	Retention				$ 35	$ 5	$ 40
Dominguez								
GTC	On-site	Drainage Inserts	9	389,318	11,024	$ 15	$ 29	$ 44
	Planning	Bioretention				$ 20	$ 19	$ 39
RAC	On-site	Drainage Inserts	16	682,803	19,335	$ 15	$ 29	$ 44
	Planning	Bioretention				$ 20	$ 19	$ 39
		Detention				$ 35	$ 5	$ 40
Parking Lot 'E'	On-site	Drainage Inserts	11	467,181	13,229	$ 15	$ 29	$ 44
	Planning	Biofilter Swales				$ 20	$ 19	$ 39
		Bioretention				$ 20	$ 19	$ 39
ITC	On-site	Drainage Inserts	2	107,811	3,053	$ 15	$ 29	$ 44
	Planning	Bioretention				$ 20	$ 19	$ 39
Airfield	On-site	Drainage Inserts	15	674,817	19,109	$ 15	$ 29	$ 44
	Planning	Biofilter Swales				$ 20	$ 19	$ 39
Non-Airfield (aprons)	On-site	Drainage Inserts	26	1,120,037	31,716	$ 15	$ 29	$ 44
	Planning	Oil/Water Separators				$ 1,970	$ 21	$ 1,991

Note: (1) Costs for Oil/Water Separator are retrofit costs only all other costs are for new construction
Note: (2) NA = Not Applicable

Costs are approximate and for planning purposes only.

Appendix C
Pollutant Load Analysis with Conceptual Drainage Plan BMPs

This page intentionally left blank.

LAX Master Plan Alternative D Pollutant Load Analysis Based on Conceptual Drainage Plan BMPs

Introduction

As addressed in Section 4.7 of the LAX Master Plan Final EIR, implementation of the Master Plan would have potential impacts related to hydrology and water quality. In recognition of these potential impacts, LAWA included Master Plan Commitment HWQ-1. The overall objective of HWQ-1 is to identify and commit to construct a drainage infrastructure for the selected Master Plan alternative that provides adequate drainage capacity to prevent flooding, control peak flow discharges, and incorporates Best Management Practices (BMPs) to minimize the effect of airport operations on surface water quality in two primary receiving waters, Santa Monica Bay and the Dominguez Channel.

Pursuant to HWQ-1, LAWA prepared the LAX Master Plan Alternative D Conceptual Drainage Plan. The Conceptual Drainage Plan provides an overview of drainage and water quality conditions and proposes options for addressing potential impacts from Master Plan Alternative D. The conceptual drainage plan provides the basis by which detailed project specific drainage improvement plans shall be designed in conjunction with site engineering specific to each Master Plan project associated with Alternative D. BMPs will be incorporated to minimize the effect of Airport operations on surface water quality and to prevent a net increase in pollutant loads to surface water resulting from the selected LAX Master Plan Alternative D.

The purpose of this Technical Memorandum is to present the results of an updated pollutant load analysis for the entire Alternative D planning area that takes into account the pollutant loads achievable through implementation of the BMPs identified in the Conceptual Drainage Plan that will be incorporated into project designs as specific projects are implemented. The analysis is intended to assess the ability of the overall BMPs plan to meet the goal of achieving no net increase in pollutant loads to receiving water bodies from implementation of the Master Plan projects under Alternative D.

General Approach and Methodology

The methodologies used to analyze drainage and water quality impacts associated with baseline conditions and build alternatives are unchanged from those presented in the LAX Master Plan Final EIR. These same methods were applied to the analysis of Alternative D but with the addition of BMPs as proposed in the Conceptual Drainage Plan.

Storm Water Event Mean Concentrations

The source of event mean concentrations (EMCs) for the pollutants of concern used are the same for all land uses as previously applied in the Supplemental Hydrology and Water Quality Technical Report of the LAX Master Plan Final EIR (see Table 1). Two sources were used for EMCs for the airport land uses. They include the following:

- EMCs calculated from storm water samples collected by the American Association of Airport Executives (AAAE) at over 605 airports nationwide in preparation of its storm water group permit application in 1992. AAAE EMCs were used for total suspended solids (TSS), total phosphorus, total Kjeldahl nitrogen (TKN), oil and grease (O&G), 5-day biochemical oxygen demand (BOD_5), and chemical oxygen demand (COD), as reported in the study entitled *Predicting Pollutant Loads in Airport Storm Water Runoff - Advanced Spatial Statistics*.[1] These data are deemed appropriate for these land uses in the absence of LAX-specific data, which are either not available for the constituents of concern or for which there have been insufficient samples collected to date.

- LACDPW 1994-2000 data for transportation land uses was used for total copper, total lead, and total zinc in the Supplemental Hydrology and Water Quality Technical Report of the LAX Master Plan Final EIR. Storm water samples collected as part of the AAAE permit application did not include analysis for these three metals. LACDPW 1994-2000 data for transportation land uses were also used for the newly added constituents (ammonia, total coliform bacteria, fecal coliform bacteria, and fecal enterococcus bacteria) described in Section 3.3, *Pollutants of Concern*.

EMCs for non-airport land uses were obtained from the LACDPW Summary Water Quality Data - Storm Water Quality Data Tables (1994-2000).

[1] Ostrom, Brenda, Predicting Pollutant Loads In Airport Storm water Runoff - Advanced Spatial Statistics, May 12, 1994.

Table 1
Revised Event Mean Concentrations for Storm Water Runoff By Land Use

Pollutant	Pollutant Concentrations by Land Use (mg/L, unless specified) [5]						
	Airport Operations[4]	Airport Open Space[4]	Industrial	Commercial	High Density Residential[4]	Open Space[4]	Transpor-tation
	100% Impervious	45% Impervious	100% Impervious	100% Impervious	100% Impervious	35% Impervious	80% Impervious
Total Suspended Solids	19.01 [2]	19.01 [2]	240	66	95	186	78
Total Phosphorus	0.24 [2]	0.24 [2]	0.41	0.39	0.39	0.16	0.44
Total Kjeldahl Nitrogen	1.07 [2]	1.07 [2]	3	3.4	2.9	0.79	1.9
Total Copper	0.06	0.06	0.03	0.04	0.02	0.02	0.06
Total Lead	0.01	0.01	0.02	0.02	0.01	0 [1]	0.01
Total Zinc	0.29	0.29	0.64	0.24	0.08	0.05	0.29
Oil and Grease	2.29 [2]	2.29 [2]	1.7	3.3	1.3	0 [1]	3.1
5-Day Biochemical Oxygen Demand	6.58 [2]	6.58 [2]	20	27	16	12	21
Chemical Oxygen Demand	45.7 [2]	45.7 [2]	80	98	89	17	50
Ammonia	0.29	0.29	0.59	1.26	0.41	0.13	0.29
Total Coliform Bacteria [3]	6.9E+05	6.9E+05	4.5E+05	1.1E+06	1.4E+06	9.2E+03	6.9E+05
Fecal Coliform Bacteria [3]	3.3E+05	3.3E+05	3.4E+05	5.3E+05	9.3E+05	1.4E+03	3.3E+05
Fecal Enterococcus Bacteria [3]	3.2E+04	3.2E+04	9.8E+04	8.6E+04	6.1E+05	6.8E+02	3.2E+04

[1] As noted by LACDPW, values not meaningful, therefore 0 was adopted.

[2] Ostrom, Brenda, Predicting Pollutant Loads In Airport Storm Water Runoff - Advanced Spatial Statistics, May 12, 1994.

[3] Event Mean Concentration in units of organisms/year

[4] The LACPDW EMC for transportation was used for airport operations and airport open space land uses (except where otherwise noted); LACDPW vacant EMC was used for the open space land use; and the LACPDW high density/single family residential EMC was used for the residential land use category.

[5] Unless noted otherwise, data are from Los Angeles County Department of Public Works, Summary Water Quality Data - Storm Water Quality Data Tables (1994 - 2000), http://ladpw.org/wmd/npdes/9400_wq_tbl/Table_4-12.pdf.

Source: Camp Dresser & McKee Inc., 2003.

Average Annual Precipitation

As described in the Supplemental Hydrology and Water Quality Technical Report of the LAX Master Plan Final EIR, average annual precipitation is one of the factors used in calculating average annual storm water pollutant loads. Average annual precipitation recorded at LAX Airport is 12.23 inches per year. This rainfall is unchanged from that used in the Supplemental Hydrology and Water Quality Technical Report, and was used in this analysis to calculate pollutant loads with incorporation of BMPs.

Estimation of Storm Water Annual Pollutant Loads without BMPs

Estimation of storm water pollutant loading to a receiving water body requires information about the study area land use distribution, average annual precipitation, and EMC data for pollutants of concern. Percent imperviousness and runoff coefficients are calculated from the land use distribution by the relationships used in LAX Master Plan Final EIR. A detailed discussion of this methodology is found in the Supplemental Hydrology and Water Quality Technical Report of the LAX Master Plan Final EIR. Pollutant loads for Baseline Conditions and for Alternative D were presented in the Supplemental Hydrology and Water Quality Technical Report of the LAX Master Plan Final EIR, Tables S2 and S12, respectively.

Pollutant Loads with BMPs

Introduction

To address potential impacts related to hydrology and water quality, LAWA included Master Plan Commitment HWQ-1 in the LAX Master Plan Final EIR. This commitment requires the development of a Conceptual Drainage Plan to assess area-wide drainage flows at a level of detail sufficient to identify the overall improvements necessary to prevent flooding and preserve water quality. The overall objective of HWQ-1 is a drainage infrastructure that provides adequate drainage capacity to prevent flooding and control peak flow discharges, that incorporates Best Management Practices (BMPs) to minimize the effect of airport operations on surface water quality, and that prevents a net increase of pollutant loads to the two primary receiving waters, Santa Monica Bay and the Dominguez Channel.

As part of this commitment, the Conceptual Drainage Plan identifies BMPs that will meet the requirements in the City of Los Angeles Standard Urban Storm Water Mitigation Plan (SUSMP) through incorporation of source control, structural, and treatment control BMPs. Lists of potential methods to reduce peak flow rates and BMPs to infiltrate or treat stormwater runoff are included in Master Plan Commitment HWQ-1.

In order to apply these BMPs to the LAX Master Plan Alternative D pollutant load calculation, it is important to understand how the Conceptual Drainage Plan sub-divided the Santa Monica Bay and Dominguez Channel Watersheds, as defined in the LAX Master Plan Final EIR, into additional sub-areas. This watershed delineation was necessary from a hydrologic perspective in the course of determining the conceptual runoff plan for Alternative D.

As described in Section 2.3, *Hydrologic Boundaries*, of the Conceptual Drainage Plan, the Santa Monica Bay watershed, consists of four sub-areas, the Argo, Imperial, Culver, and Vista Del Mar sub-areas. Culver and Vista Del Mar sub-areas are localized and do not have any significant development/ redevelopment under the LAX Master Plan Alternative D and therefore were not evaluated in the Conceptual Drainage Plan.

For purposes of the Conceptual Drainage Plan, the Imperial sub-area was further sub-divided into the Imperial and Pershing sub-areas. Therefore, the Santa Monica Bay watershed is sub-divided into the following:

- Argo sub-area
- Imperial sub-area
- Pershing sub-area

For purposes of the Conceptual Drainage Plan, the Dominguez Channel Watershed is sub-divided into the following:

- Dominguez North sub-area
- Dominguez South sub-area

Recommended BMPs
Based upon recommendations from the Conceptual Drainage Plan, the following range of BMPs are recommended to be incorporated in various locations to infiltrate or treat storm water runoff and dry weather flows, and control peak flow rates for LAX Master Plan Alternative D (Table 4-10, Treatment Control BMP Limitations and Benefits, of the Conceptual Drainage Plan, describes the BMPs in greater detail.)

- Vegetated swales
- Bio-retention
- Extended Detention
- Detention-Infiltration basins
- Media Filter

In Section 4.4.1, Treatment Control BMPs, of the Conceptual Drainage Plan, Table 4-15 through Table 4-19 present a series of recommended BMPs that could be incorporated in reducing pollutant loads for Alternative D. A tributary area associated with each land use type within the sub-area is also presented. The tables identify various levels of BMP options including: project-specific, subregional and regional BMPs. As discussed in Section 4.4.1.3 of the Conceptual Drainage Plan, project-specific BMPs are recommended to be implemented as supplemental measures only if the recommended sub-regional and regional BMPs are not feasible for the project area due to site constraints. The sub-regional and regional BMPs are the primary BMP measures to be implemented. If project-specific BMPs are implemented in combination with sub-regional and regional BMPs, the project-specific BMPs would be providing an additional incremental pollutant removal.

However, the sub-regional and regional BMPs represent the full commitment of water quality measures as Alternative D is completed. Therefore, the pollutant load analysis focuses on the sub-regional and regional BMPs and does not attempt to factor in any additional reduction from project-specific BMPs. This may result in a slight underestimation of the total pollutant load reduction. Table 2 lists those BMPs and associated tributary areas as presented in the Conceptual Drainage Plan.

Table 2
Recommended BMPs for Alternative D – Enhance Safety and Security Plan (2015)

	Recommended Treatment BMPs	Tributary Area (acres)
Santa Monica Bay Watershed		
Argo Sub-Area		
Airport, Non-runway	Detention-Infiltration	210
Runways	Detention-Infiltration	530
Northside (1)	Detention-Infiltration	207
Off-site (2)	Detention/Infiltration	1,373
Imperial Sub-Area		
Runways	Vegetated Swale	170
Non-runways	Vegetated Swale/Media Filter	290
Pershing Sub-area	Extended Detention/Retention	760
Dominguez Channel Watershed		
Dominquez North Sub-area		
Ground Transportation Center (GTC)	Bioretention	130
Parking Lot E	Bioretention	59 (3)
Intermodal Transportation Center (ITC)	Bioretention	30
Rental Car Facility (RAC)	Bioretention	190
Dominquez South Sub-area		
Runways	Vegetated Swale	260
Aprons	Vegetated Swale/Media Filter	330

(1) Table 4-15, Water Quality Treatment Requirements Argo Sub-area, of the Conceptual Drainage Plan listed an “Offsite” tributary area of 1,580 acres to be treated by a detention-infiltration BMP. CDM determined that of the 1,580 acres described as “offsite,” 207 acres actually lies within the LAX Master Plan boundary. CDM designated this area as “Northside.”

(2) Of the 1580 acres treated by detention-infiltration BMP, 1,373 acres lies outside the LAX Master Plan boundary and continues to be referenced as “offsite.”

(3) The tributary area for this BMP was shown as 130 acres in the Conceptual Drainage Plan. The revised tributary area should be 59 acres based on the review of Figure 4-2, Recommended Treatment Control Options, of the Conceptual Drainage Plan.

Source: LAWA, Conceptual Drainage Plan, 2005.

Performance of structural BMPs varies considerably based on their design and influent concentration.[2] In 1999, USEPA published estimated ranges of pollutant removal efficiencies for structural BMPs based on substantial document review. The ranges of removal efficiencies were discussed in the Supplemental Hydrology and Water Quality Technical Report of the LAX Master Plan Final EIR and are presented in Table 3.

2 U.S. Environmental Protection Agency, Preliminary Data Summary of Urban Stormwater Best Management Practices Methodology, August 1999.

Table 3 Structural BMP Expected Pollutant Removal Efficiency				
BMP Type	**Typical Pollutant Removal (percent)**			
	Suspended Solids	**Nitrogen**	**Phosphorus**	**Metals**
Dry Detention Basins	30-35	15-45	15-45	15-45
Retention Basins	50-80	30-65	30-65	50-80
Infiltration Basins	50-80	50-80	50-80	50-80
Infiltration Trenches/Dry Wells	50-80	50-80	15-45	50-80
Porous Pavement	65-100	65-100	30-65	65-100
Grassed Swales	30-65	15-45	15-45	15-45
Vegetated Filter Strips	50-80	50-80	50-80	30-65
Surface Sand Filters	50-80	<30	50-80	50-80
Other Media Filters	65-100	15-45	0	50-80

In addition to these general performance ranges based on reported studies prior to 1999, substantial additional data and reports have been published[3,4] and were reviewed for the purposes of this pollutant load analysis, including extensive BMP pilot plant studies recently completed by Caltrans.[5] As more data becomes available, BMP performance can be expressed in both typical percent removal, as well as achievable effluent concentration. For the purposes of this analysis, percent removal estimates are used. Based on a review of the range of performance data from the cited studies, removal efficiency factors for the selected BMPs and the constituents of concern used for this pollutant load analysis are shown in Table 4.

Table 4 BMP Pollutant Removal (%) Efficiency for Conceptual Drainage Plan LAX Master Plan Alternative D BMPs					
	Vegetated Swales	**Media Filters**	**Bioretention**	**Extended Detention/ Retention**	**Detention-Infiltration**
TSS	50	80	50	65	80
Total P	0	40	0	20	80
Total N	30	20	30	30	80
Total Cu	60	50	60	50	80
Total Pb	60	75	60	75	80
Total Zn	60	75	60	50	80
O&G	50	40	0	0	80
BOD5	0	60	60	25	80
COD	0	60	60	25	80
Ammonia	30	35	60	30	80
Total Coliform	0	55	0	60	80
Fecal Coliform	0	55	0	60	80
Fecal Enterococcus	0	55	0	60	80

[3] Center for Watershed Protection, Ellicott City Maryland, National Pollutant Removal Performance Database for Storm Water Treatment Practices 2nd Edition, June 2000
[4] American Society of Civil Engineers and USEPA National Storm Water BMP Database. http://www.bmpdatabase.org
[5] California Department of Transportation BMP Retrofit Pilot Program. Final Report CTSW-RT-01-050. January 2004

Calculating Pollutant Loads with Recommended Treatment BMPs

Estimation of storm water pollutant loading to a receiving water body requires knowledge of land use type, land use area, associated percent imperviousness, runoff coefficients, average annual precipitation, and EMC data for pollutants of concern. The methodology used in the Supplemental Hydrology and Water Quality Technical Report of the LAX Master Plan Final EIR relates land uses to percent imperviousness and EMCs to develop "per-acre" pollutant loadings.

To estimate reductions in load as a result of potential BMPs, land use distributions in each of the BMP tributary areas presented in Table 2 were extracted from the Baseline and Alternative D land use map included as part of the LAX Master Plan Final EIR. This land use map includes seven land use types; airport operations, airport open space, industrial, commercial, residential, open space, and transportation.

Figure 4-2, Recommended Treatment Control BMP Options, of the Conceptual Drainage Plan, Appendix A, depicts the general location of the BMPs and the drainage tributary area treated by each proposed BMP. For example, the Conceptual Drainage Plan recommends a detention-infiltration BMP for airport (non-runway) areas within the Argo sub-area. This tributary area was described to be 210 acres. By referring to Figure 4-2 of the Conceptual Drainage Plan, approximately 50 percent of the 210 acre area was estimated to lie within airport operations, while the remaining area lies within airport open space. This process was repeated for each sub-area and assigned land use type areas. Table 5 shows the corresponding distribution for land use type area for each BMP tributary area.

Incorporation of treatment BMPs in the calculation of pollutant loads requires additional knowledge concerning the pollutant removal efficiency and expected percent capture of the selected BMP. The Conceptual Drainage Plan commitment is for BMPs to be sized to meet either the water quality flow or volume SUSMP criteria. Using these sizing criteria will allow the BMPs to treat at least eighty percent (80%) of the volume of long-term average annual storm water runoff.

Therefore, the average annual total pollutant removed for each constituent is calculated in the following manner:

- Average annual pollutant load removed = (Annual load diverted to BMP) x (80% Capture) x (% Removal efficiency)

Based upon the incorporation of the BMPs as discussed above, the average annual pollutant load for LAX Master Plan Alternative D with incorporation of BMPs was calculated and compared with the baseline conditions.

Table 5
Corresponding Land Use Type for BMP Tributary Areas

		Total Tributary Area (acres)	Airport Operations (acres)	Airport Open Space (acres)	Industrial (acres)	Commercial (acres)	Residential (acres)	Open Space (acres)	Transportation
Argo Sub-area									
Airport, Non-runway	Detention- Infiltration	210	110	100	0	0	0	0	0
Runways	Detention- Infiltration	530	530	0	0	0	0	0	0
Northside	Detention- Infiltration	207	0	0	96	60	0	52	0
Off-Site	Detention- Infiltration	1,373	0	0	275	137	687	275	0
Pershing Sub-area									
Total Pershing	Extended Detention/ Retention	760	660	100	0	0	0	0	0
Imperial Sub-area									
Runways	Vegetated Swales	170	170	0	0	0	0	0	0
Non-runways	Vegetated Swale/Media Filter	290	230	60	0	0	0	0	0
Dominguez N. Sub-area									
GTC	Bioretention	130	130	0	0	0	0	0	0
Parking lot E	Bioretention	59	59	0	0	0	0	0	0
ITC	Bioretention	30	30	0	0	0	0	0	0
RAC	Bioretention	190	190	0	0	0	0	0	0
Dominguez S. Sub-area									
Runway	Vegetated Swale	260	260	0	0	0	0	0	0
Aprons	Vegetated Swale/Media Filter	330	330	0	0	0	0	0	0

Table 6 shows the baseline estimated average annual pollutant loads for each constituent by land use category, segregated into the two major watersheds (Santa Monica Bay and Dominguez Channel) for baseline conditions. Table 7 shows the estimated average annual pollutant loads for each constituent by land use category and watershed for the LAX Master Plan that would result from the post-development land use conditions under Alternative D, prior to the treatment of runoff with BMPs.

Table 8 shows the average annual pollutant loads for each constituent, segregated into the two major watersheds (Santa Monica Bay and Dominguez Channel) as well as the total project under baseline conditions (from Table 6); under Alternative D land use changes without the addition of BMPs (under Table 7); and with incorporation of BMP pollutant reductions.

Analysis of Pollutant Loads

Alternative D without Conceptual Drainage Plan BMPs

Estimated average annual pollutant loads to Santa Monica Bay under Alternative D would increase over baseline conditions for all parameters except total suspended solids (TSS) and fecal enterococcus, which would decrease by 8 percent and 30 percent, respectively. The increase in pollutant loading for all other constituents would be less than 10 percent.

The changes in pollutant loads resulting from land use changes proposed in Alternative D would not be evenly distributed between the two watersheds. In the Dominguez watershed, most parameters would decrease as a result of the land use change. Only copper, zinc, and oil and grease would increase. Overall, pollutant load increases as a result of Alternative D would primarily impact the Santa Monica Bay watershed.

Alternative D with Conceptual Drainage Plan BMPs

When incorporating suggested BMPs into the Alternative D site plan, estimated average annual pollutant loads from the airport property would decrease compared to baseline conditions for all parameters by at least 10 percent and for most pollutants the net reduction would be significantly greater, ranging up to 50 percent. This is a result of ultimately providing treatment to nearly all of the runoff from the airport property.

Table 6
Estimated Pollutant Loads
Baseline Conditions

Region within Hydrology and Water Quality Study Area	Parameter	Land-use Classifications							Pollutant Load Subtotals (lbs/yr)
		Airport Operations (lbs/yr)	Airport Open Space (lbs/yr)	Industrial (lbs/yr)	Commercial (lbs/yr)	Residential (lbs/yr)	Open Space (lbs/yr)	Transportation (lbs/yr)	
Santa Monica Bay Watershed									
	TSS	65,542	8,733	10,816	1,487	0	122,189	13,848	222,617
	Total P	827	110	18	9	0	105	78	1,148
	Total N	3,689	492	135	77	0	519	337	5,249
	Total Cu	193	26	1	1	0	10	10	241
	Total Pb	34	5	1	0	0	0	2	42
	Total Zn	1,003	134	29	5	0	30	52	1,253
	O&G	7,895	1,052	77	74	0	0	550	9,649
	BOD_5	22,686	3,023	901	608	0	7,883	3,728	38,830
	COD	157,562	20,995	3,605	2,208	0	11,168	8,877	204,416
	Ammonia	1,000	133	27	28	0	85	51	1,325
	Total Coliform[1]	1.35E+11	1.80E+10	1.16E+09	1.45E+09	0.00E+00	3.41E+08	6.96E+09	1.63E+11
	Fecal Coliform[1]	6.41E+10	8.54E+09	8.62E+08	6.74E+08	0.00E+00	5.19E+07	3.30E+09	7.76E+10
	Fecal Enterococcus[1]	6.24E+09	8.32E+08	2.50E+08	1.10E+08	0.00E+00	2.52E+07	3.21E+08	7.78E+09
Dominguez Channel Watershed									
	TSS	37,869	689	155,217	9,370	30,827	1,627	11,673	247,271
	Total P	478	9	265	55	127	1	66	1,001
	Total N	2,131	39	1,940	483	941	7	284	5,825
	Total Cu	112	2	21	6	5	0	8	153
	Total Pb	20	0	11	3	3	0	1	39
	Total Zn	580	11	414	34	26	0	44	1,108
	O&G	4,562	83	1,099	468	422	0	464	7,098
	BOD_5	13,108	238	12,935	3,833	5,192	105	3,143	38,553
	COD	91,036	1,656	51,739	13,913	28,880	149	7,483	194,855
	Ammonia	578	11	382	179	133	1	43	1,326
	Total Coliform[1]	7.80E+10	1.42E+09	1.66E+10	9.16E+09	2.51E+10	4.55E+06	5.86E+09	1.36E+11

Table 6 (Continued)
Estimated Pollutant Loads
Baseline Conditions

Region within Hydrology and Water Quality Study Area	Parameter	Land-use Classifications							Pollutant Load Subtotals (lbs/yr)
		Airport Operations (lbs/yr)	Airport Open Space (lbs/yr)	Industrial (lbs/yr)	Commercial (lbs/yr)	Residential (lbs/yr)	Open Space (lbs/yr)	Transportation (lbs/yr)	
	Fecal Coliform[1]	3.70E+10	6.74E+08	1.24E+10	4.25E+09	1.71E+10	6.91E+05	2.78E+09	7.43E+10
	Fecal Enterococcus[1]	3.61E+09	6.56E+07	3.59E+09	6.93E+08	1.12E+10	3.36E+05	2.71E+08	1.94E+10
Total Pollutant Loading									
	TSS	103,410	9,422	166,033	10,857	30,827	123,816	25,521	469,887
	Total P	1,306	119	284	64	127	107	144	2,149
	Total N	5,821	530	2,075	559	941	526	622	11,074
	Total Cu	305	28	22	6	5	10	18	394
	Total Pb	54	5	12	3	3	0	3	81
	Total Zn	1,583	144	443	40	26	31	95	2,361
	O&G	12,457	1,135	1,176	543	422	0	1,014	16,747
	BOD_5	35,794	3,261	13,836	4,442	5,192	7,988	6,871	77,384
	COD	248,598	22,651	55,344	16,121	28,880	11,317	16,360	39,9271
	Ammonia	1,578	144	408	207	133	87	95	2,651
	Total Coliform[1]	2.13E+11	1.94E+10	1.78E+10	1.06E+10	2.51E+10	3.46E+08	1.28E+10	2.99E+11
	Fecal Coliform[1]	1.01E+11	9.22E+09	1.32E+10	4.92E+09	1.71E+10	5.26E+07	6.08E+09	1.52E+11
	Fecal Enterococcus[1]	9.85E+09	8.97E+08	3.84E+09	8.03E+08	1.12E+10	2.56E+07	5.92E+08	2.72E+10
Load expressed in organisms/yr									
Source: Camp Dresser & McKee Inc., 2003									

Table 7
Estimated Pollutant Loads
Alternative D (2015) without BMPs

Region within Hydrology and Water Quality Study Area	Parameter	Land Use Classifications							Pollutant Load Subtotals (lbs/yr)
		Airport Operations (lbs/yr)	Airport Open Space (lbs/yr)	Industrial (lbs/yr)	Commercial (lbs/yr)	Residential (lbs/yr)	Open Space (lbs/yr)	Transportation (lbs/yr)	
Santa Monica Bay Watershed									
	TSS	66,982	8,006	51,858	15,968	0	86,770	13,921	243,505
	Total P	846	101	89	94	0	75	79	1,283
	TKN	3,770	451	648	823	0	369	339	6,399
	Total Cu	197	24	7	9	0	7	10	254
	Total Pb	35	4	4	4	0	0	2	49
	Total Zn	1,025	123	138	58	0	21	52	1,418
	O&G	8,069	964	367	798	0	0	553	10,752
	BOD_5	23,185	2,771	4,321	6,533	0	5,598	3,748	46,156
	COD	161,025	19,246	17,286	23,711	0	7,931	8,924	238,122
	Ammonia	1,022	122	127	305	0	61	52	1,689
	Total Coliform[1]	1.38E+11	1.65E+10	5.55E+09	1.56E+10	0	2.42E+08	6.99E+09	1.83E+11
	Fecal Coliform[1]	6.55E+10	7.83E+09	4.13E+09	7.24E+09	0	3.69E+07	3.32E+09	8.81E+10
	Fecal Enterococcus[1]	6.38E+09	7.62E+08	1.20E+09	1.18E+09	0	1.79E+07	3.23E+08	9.86E+09
Dominguez Channel Watershed									
	TSS	50,196	0	120,432	2,314	2,808	1,590	13,196	190,536
	Total P	634	0	206	14	12	1	74	940
	TKN	2,825	0	1,505	119	86	7	321	4,864
	Total Cu	148	0	16	1	0	0	9	175
	Total Pb	26	0	9	1	0	0	2	38
	Total Zn	768	0	321	8	2	0	49	1,150
	O&G	6,047	0	853	116	38	0	524	7,578
	BOD_5	17,375	0	10,036	947	473	103	3,553	32,485
	COD	120,671	0	40,144	3,436	2,631	145	8,459	175,486
	Ammonia	766	0	296	44	12	1	49	1,168

Table 7 (Continued)
Estimated Pollutant Loads
Alternative D (2015) without BMPs

Region within Hydrology and Water Quality Study Area	Parameter	Land Use Classifications							Pollutant Load Subtotals (lbs/yr)
		Airport Operations (lbs/yr)	Airport Open Space (lbs/yr)	Industrial (lbs/yr)	Commercial (lbs/yr)	Residential (lbs/yr)	Open Space (lbs/yr)	Transportation (lbs/yr)	
	Total Coliform[1]	1.03E+11	0	1.29E+10	2.26E+09	2.29E+09	4.44E+06	6.63E+09	1.28E+11
	Fecal Coliform[1]	4.91E+10	0	9.60E+09	1.05E+09	1.56E+09	6.76E+05	3.15E+09	6.45E+10
	Fecal Enterococcus[1]	4.78E+09	0	2.79E+09	1.71E+08	1.02E+09	3.28E+05	3.06E+08	9.07E+09
Total Pollutant Loading									
	TSS	117,178	8,006	172,290	18,282	2,808	88,360	27,117	434,041
	Total P	1,479	101	294	108	12	76	153	2,223
	TKN	6,596	451	2,154	942	86	375	661	11,263
	Total Cu	345	24	23	11	0	7	19	430
	Total Pb	62	4	12	5	0	0	3	87
	Total Zn	1,794	123	459	67	2	22	101	2,568
	O&G	14,116	964	1,220	914	38	0	1,078	18,331
	BOD_5	40,559	2,771	14,358	7,479	473	5,701	7,301	78,641
	COD	281,696	19,246	57,430	27,146	2,631	8,076	17,382	413,608
	Ammonia	1,788	122	424	349	12	62	101	2,857
	Total Coliform[1]	2.41E+11	1.65E+10	1.84E+10	1.79E+10	2.29E+09	2.47E+08	1.36E+10	3.10E+11
	Fecal Coliform[1]	1.15E+11	7.83E+09	1.37E+10	8.29E+09	1.56E+09	3.75E+07	6.47E+09	1.53E+11
	Fecal Enterococcus[1]	1.12E+10	7.62E+08	3.99E+09	1.35E+09	1.02E+09	1.82E+07	6.29E+08	1.89E+10

Load expressed in organisms/yr

Source: Camp Dresser & McKee Inc., 2003

Table 8
Estimated Pollutant Loads for Baseline, Alternative D, and Alternative D with Conceptual Drainage Plan BMPs Incorporated

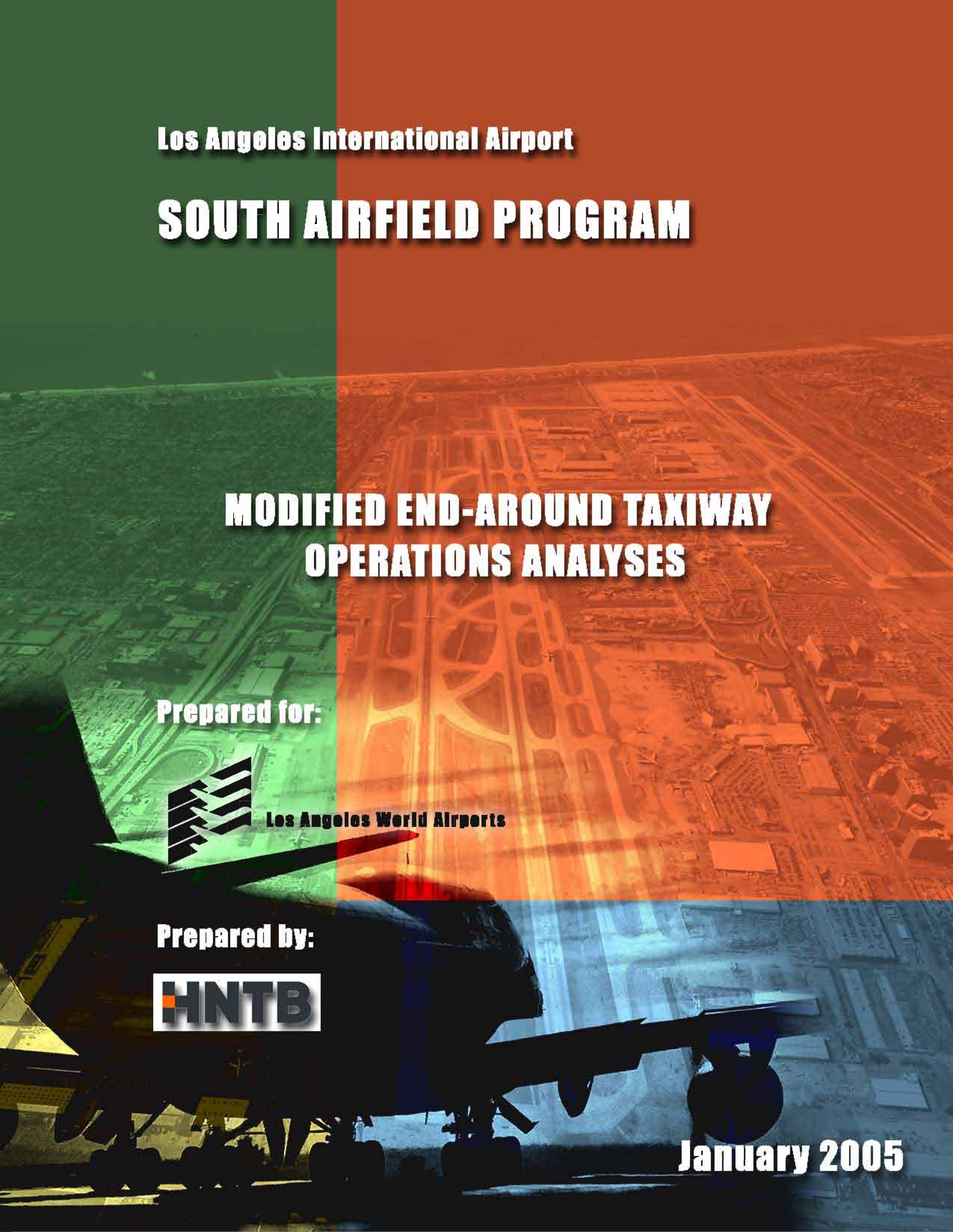
Pollutant	Santa Monica Bay Watershed (lbs/yr)				Dominguez Channel Watershed (lbs/yr)				Total LAX Airport (lbs/yr)			
	Baseline	Alternative D	Alternative D with BMPs	% Difference between Alt D with BMPs and Baseline	Baseline	Alternative D	Alternative D with BMPs	% Difference between Alt D with BMPs and Baseline	Baseline	Alternative D	Alternative D with BMPs	% Difference between Alt D with BMPs and Baseline
TSS	222,617	243,497	155,015	-30	247,271	190,536	171,722	-31	469,887	434,033	326,737	-30
Total P	1,148	1,283	863	-25	1,001	940	912	-9	2,149	2,223	1,775	-17
TKN	5,249	6,399	3,960	-25	5,825	4,864	4,318	-26	11,074	11,263	8,278	-25
Total Cu	241	254	129	-46	153	175	116	-24	394	430	246	-38
Total Pb	42	49	21	-51	39	38	26	-33	81	87	47	-42
Total Zn	1,253	1,418	684	-45	1,108	1,150	823	-26	2,361	2,568	1,506	-36
O&G	9,649	10,752	7,110	-26	7,098	7,578	6,429	-9	16,747	18,331	13,539	-19
BOD	38,830	46,155	31,058	-20	38,553	32,485	31,311	-19	77,384	78,641	62,369	-19
COD	204,416	238,121	151,301	-26	194,855	175,486	167,330	-14	399,271	413,607	318,631	-20
Ammonia	1,325	1,689	1,022	-23	1,326	1,168	1,007	-24	2,651	2,857	2,029	-23
Total Coliform[1]	1.6E+11	1.8E+11	9.9E+10	-39	1.4E+11	1.3E+11	1.0E+11	-24	3.0E+11	3.1E+11	2.0E+11	-32
Fecal Coliform[1]	7.8E+10	8.8E+10	4.8E+10	-39	7.4E+10	6.4E+10	5.3E+10	-28	1.5E+11	1.5E+11	1.0E+11	-34
Enterococcus[1]	7.8E+09	9.9E+09	5.2E+09	-33	1.9E+10	9.1E+09	8.0E+09	-59	2.7E+10	1.9E+10	1.3E+10	-51

[1] Expressed in organism/year

This page intentionally left blank.

Appendix B Modified End-Around Taxiway Operations Analyses

This page intentionally left blank.



Los Angeles International Airport

SOUTH AIRFIELD PROGRAM

MODIFIED END-AROUND TAXIWAY OPERATIONS ANALYSES

Prepared for:

Los Angeles World Airports

Prepared by:

HNTB

January 2005

This page intentionally left blank.

TABLE OF CONTENTS

Section / Title — Page

EXECUTIVE SUMMARY

A planning study was conducted to evaluate two modifications to a previously presented end-around taxiway alternative for the south airfield at Los Angeles International Airport. Results of this planning study confirm Los Angeles World Airport's (LAWA's) previous recommendation to implement the center taxiway on the south airfield.

The planning study validates and strengthens the findings of the Final Report of the Southside Airfield and New Large Aircraft (NLA) Studies (the Final Report) published in 2004. The Full Length Center Taxiway Alternative B2, overall, is more feasible than either one of the modified end-around taxiway designs and provides the greatest benefits during all LAX operating conditions without causing excessive delay.

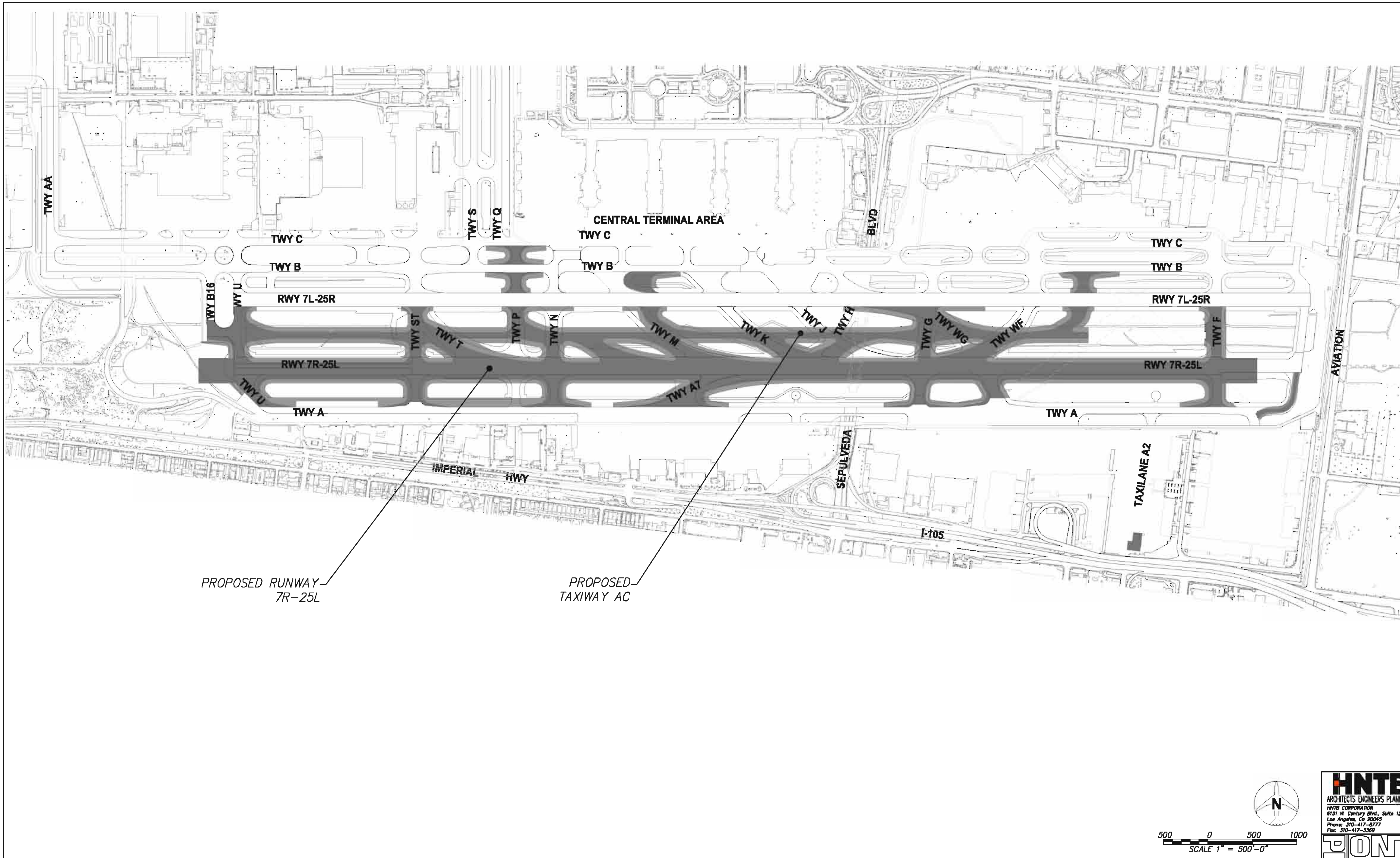
Based on the analysis performed and documented in this planning study, it is recommended that LAWA proceed with the implementation of the Full Length Center Taxiway, Alternative B2, as presented in the Final Report.

1.0 INTRODUCTION

In 2003, LAWA evaluated a variety of design options to improve the runway and taxiway system on the south airfield at LAX. The study's purpose was to minimize or eliminate runway incursions in the south airfield to the greatest degree practicable, while maintaining efficient airfield operations and retaining cost-effectiveness. LAWA teamed with Federal Aviation Administration (FAA) and the National Aeronautics and Space Administration (NASA) Ames Research Center to conduct a study at NASA's air traffic control tower (ATCT) simulation facility, Future Flight Central. The team simulated the operation of LAX from the ATCT to test and evaluate various airfield infrastructure improvements and operational procedures to boost runway safety, while maintaining the existing efficient operation of the airfield.

The Final Report compared the various design options as to their effects on airfield delay (measured as to both taxi time and taxi delay), the anticipated number and location of runway crossings, and their relative cost and noise impacts on the surrounding communities. Compared to the end-around taxiway design options, the Final Report found that the proposed center taxiway design would impact airport operations the least in terms of taxi time and delay. Furthermore, the center taxiway design would have the least noise impacts on the surrounding community, in particular the City of El Segundo, since the center taxiway would route taxiing aircraft away from noise sensitive areas. In contrast, the end-around taxiway designs generally would introduce additional taxi noise closer to El Segundo as more aircraft would be directed to proposed taxiways located closer to noise sensitive areas than any existing portion of the airfield. In fact, all of the proposed end-around taxiway designs studied for the south airfield at LAX would result in the construction of new taxiways closer to El Segundo homes and apartments than any existing portion of the LAX airfield.

Consistent with Alternative D of the LAX Master Plan, the Final Report recommended construction of a new center taxiway (hereinafter referred to as the center taxiway design) between Runways 7R-25L and 7L-25R on the south airfield (**Figure 1**). This center taxiway design would shift existing Runway 7R-25L 55.42 feet south of its current location and would construct a new parallel taxiway



Draft Deliberative Material for Discussion Purposes Only

FIGURE 1
PROPOSED SOUTH AIRFIELD LAYOUT

HNTB
ARCHITECTS ENGINEERS PLANNERS
HNTB CORPORATION
6151 W. Century Blvd., Suite 1200
Los Angeles, Ca 90045
Phone: 310-417-8777
Fax: 310-417-5369

ONT PMD LAX VNY

midway between the relocated Runway 7R-25L and existing Runway 7L-25R. Relocation of Runway 7R-25L would provide an 800-foot separation distance between the runway centerlines and a taxiway centerline separation distance of 400 feet from each of the two runways. This design would also leave Taxiway A in its current location resulting in a centerline separation distance of 445 feet between Taxiway A and relocated Runway 7R-25L.

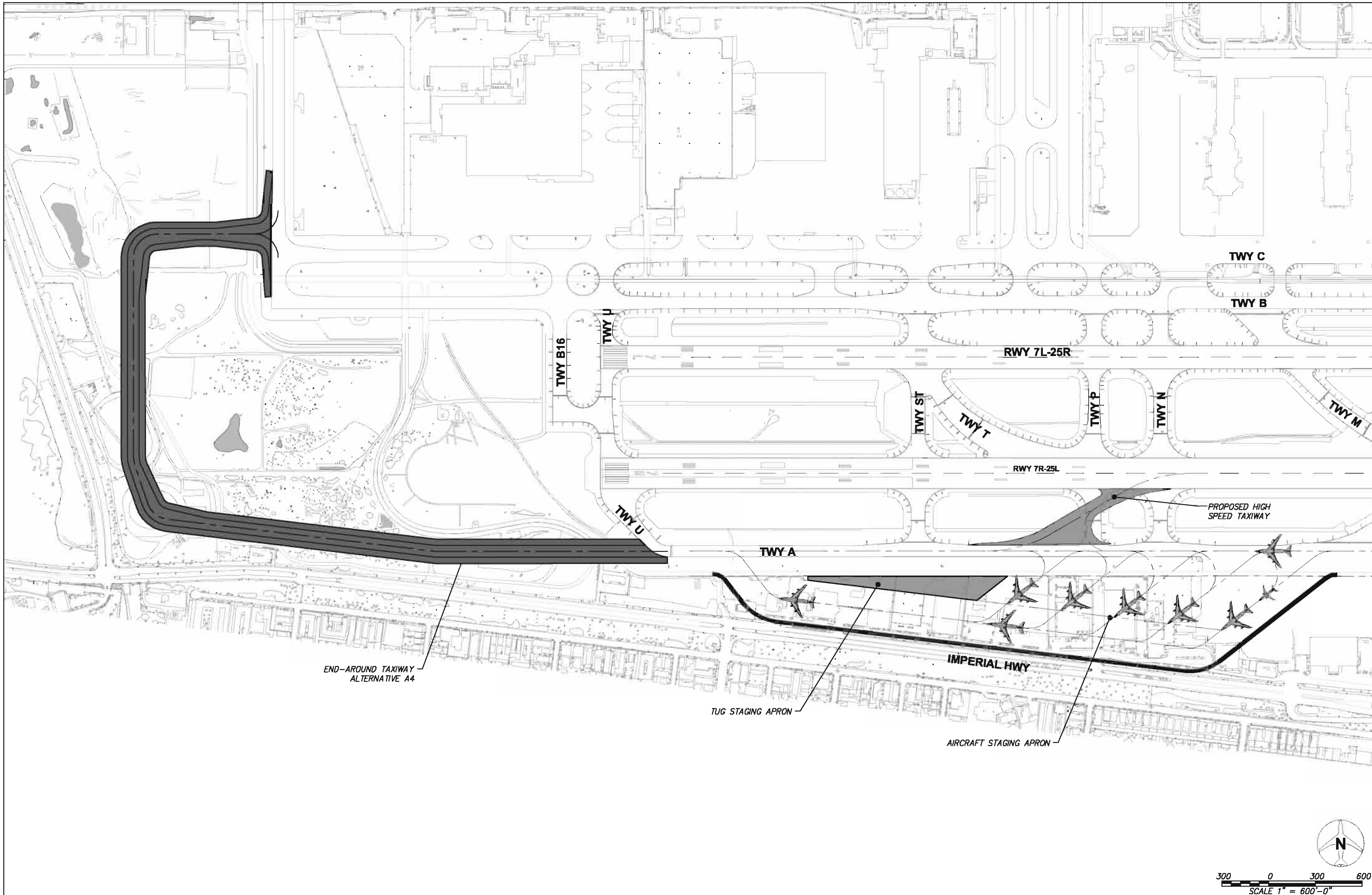
Following completion of the Final Report, the City of El Segundo requested further evaluation of one of the non-recommended end-around taxiway design options described in the Final Report – Alternative A4 (hereinafter referred to as the end-around taxiway design). As depicted in **Figure 2**, this end-around taxiway design envisioned a new taxiway that would extend west from Taxiway A approximately 3,500 feet, then turn north, roughly parallel to Pershing Drive, a distance of approximately 1,800 feet and then continue east approximately 900 feet where the taxiway would join Taxiway AA north of Taxiway C.

Under the end-around taxiway design, Runway 7R-25L would remain in its current location. Aircraft arriving on Runway 25L would exit the runway to the south (left) and taxi west along Taxiway A using the end-around taxiway to reach the LAX Central Complex (**Figure 3**), which includes the Central Terminal Area (CTA) and west maintenance areas. The distance arriving aircraft must taxi to reach the LAX Central Complex in this design would increase substantially relative to the other alternatives. The taxi-only noise contours resulting from this end-around taxiway design would increase taxi noise in the residential areas near the west end of the two south runways due to increased taxi operations in those areas resulting from the design. In contrast to current conditions where arriving aircraft do not operate in this portion of the south airfield, under the end-around taxiway design, all aircraft arriving on Runway 7R-25L, destined for the Central Complex, would be required to taxi through this area.

No portion of the current LAX airfield is as close to a residential area as the southwest airfield in the vicinity of the Runway 7R end and the west end of Taxiway A. Aircraft operations in this portion of the airfield are limited today and would continue to be limited with construction of the Final Report's recommended center taxiway. The taxi-only noise contour associated with construction of the Final Report's center taxiway design is nearly identical to the existing Baseline condition, since arriving aircraft would not need to taxi adjacent to this noise sensitive area.

Although the Final Report did not recommend the end-around taxiway design, this planning study responds to El Segundo's request for further study of that design option by evaluating two El Segundo-suggested modifications to it. El Segundo indicated that both suggested end-around modifications might reduce noise impacts on nearby El Segundo residential areas by maintaining Runway 7R-25L in its existing location and modifying the end-around taxiway operation to introduce potential noise-reducing enhancements.

The first end-around taxiway modification suggested by El Segundo addresses the possible need for aircraft to adjust their engine power settings to compensate for any grade differences, particularly up-grade, in their taxi route. Under this modification, the end-around taxiway would be constructed so that it would be at grade with existing Taxiway A, and aircraft would remain under their own power to taxi to their final destination at the Airport. Modifying the grade would reduce the ascents and descents of the taxiway surface, thereby reducing the need for pilots to throttle engines up to a noisier level in order to taxi aircraft up hill. The modified end-around taxiway design would allow pilots to

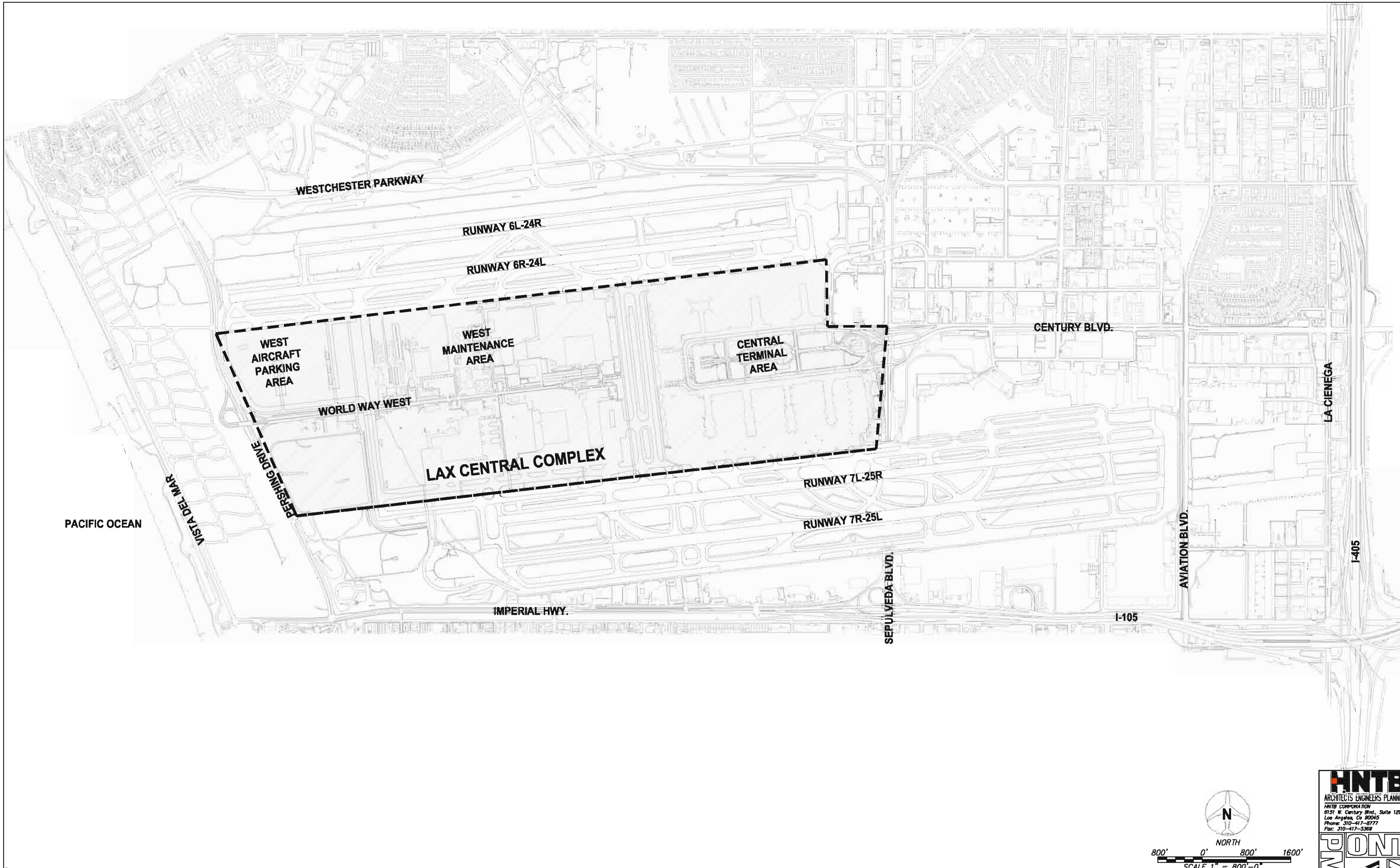


HNTB
ARCHITECTS ENGINEERS PLANNERS
HNTB CORPORATION
6151 W. Century Blvd., Suite 1200
Los Angeles, Ca 90045
Phone: 310-417-8777
Fax: 310-417-5369

ONT PMD LAX VNY

FIGURE 2
PREFERRED ALTERNATIVES

Draft Deliberative Material for Discussion Purposes Only



Draft Deliberative Material for Discussion Purposes Only

FIGURE 3
AIRPORT LAYOUT

HNTB
ARCHITECTS ENGINEERS PLANNERS
HNTB CORPORATION
6151 W. Century Blvd., Suite 1200
Los Angeles, Ca 90045
Phone: 310-417-8777
Fax: 310-417-5369

ONT PMD LAX VNY

taxi through the noise sensitive area using the least amount of engine thrust feasible thus reducing engine noise as much as possible. For the purposes of this study, this proposed modification is termed the "end-around taxiway at-grade" design.

Under El Segundo's second suggested modification, tractor tugs would move most turbojet aircraft from their runway exiting point on the south airfield to their final destination at the Airport. Under this modification, these tugs would tow aircraft from a proposed apron staging area located near the west end of Taxiway A to the LAX Central Complex (Figure 3). For the purposes of this study, this proposed modification will be termed "end-around taxiway with tugs" design.

2.0 PURPOSE AND SCOPE

At the request of the City of El Segundo, this planning study considers two specific modifications to the FAA- and LAWA-recommended center taxiway design. The two suggested modifications must still meet LAWA's goal of reducing or eliminating the risk of runway incursions on the south airfield at LAX, while maintaining airfield efficiency and being cost-effective. Thus study compares both suggested end-around taxiway modifications to the center taxiway design. The relative performance of each design, as compared to the current conditions baseline, is determined through simulation modeling, which predicts taxi times, taxi delays, and noise footprints for each design, as well as for the baseline. Taxi time and delay information is also used to predict air quality impacts associated with each design and with the baseline.

This planning study is not intended as a comprehensive environmental analysis. Rather, it is simply a response to El Segundo's request that LAWA further evaluate the two suggested modifications of the end-around taxiway design. Due to limitations of simulation modeling, evaluation of the end-around taxiway at-grade design is based on engineering rather than environmental factors. FAA-approved simulation and modeling computer programs are not capable of differentiating the subtle noise variations associated with taxiway grade differences for taxiing aircraft. Therefore, noise and air quality impacts, to the extent that they can feasibly be modeled, are used in this study simply to assist in gauging the overall relative benefits or impacts of the two suggested modifications to the end-around taxiway design.

3.0 INHERENT PROBLEMS WITH THE END-AROUND TAXIWAY APPROACH

End-around or perimeter taxiways, as they are commonly referred to, have been proposed at several airports. In theory, Air Traffic Control (ATC) can use end-around taxiways to route aircraft around the ends of active runways, which would otherwise have to be crossed in order for the aircraft to reach its final destination on the airfield. End-around taxiways can thus reduce, or in some cases, eliminate the need for runway crossings. But these theoretical benefits come at the expense of substantially longer taxi times and increased delays as well as associated costs resulting from the longer taxi distance.

In addition, end-around taxiways are nonetheless still constructed underneath aircraft arrival and departure paths not totally eliminating intersecting paths. In theory, end-around taxiway alignments can allow aircraft to remain clear of the surfaces designed to protect the airspace at the ends of the runways keeping safe vertical clearance between the aircraft on the ground and the aircraft in flight immediately above. However, these surfaces are designed for an all encompassing aircraft fleet mix and are, therefore, highly restrictive. Compounding the situation, each airline applies its own criteria when determining its fleet operating parameters, which often exceed the parameters established by the FAA and International Civil Aviation Organization (ICAO). Overall, these considerations can substantially reduce theoretical end-around taxiway efficiencies.

Beyond this, all end-around taxiway designs proposed for LAX address west flow operations only. During periods that the Airport operates in east flow with aircraft arriving Runway 7R and 6L, the existing operation would continue. There are two reasons for this.

First, the east edge of the Airport is bounded by heavily developed land including two major roadway thoroughfares, Aviation Boulevard and Interstate Highway 405. Relocation of Interstate Highway 405 further east is not considered to be feasible. There is insufficient area in which an end-around taxiway could be developed connecting the east end of the airfield to the LAX Central Complex.

Second, aircraft would not be able to exit Runway 7R onto Taxiway A and taxi west underneath the Runway 7R arrival path. There is insufficient clearance underneath the arrival path due to the convergence of Imperial Highway and the Runway 7R arrival path. In order for the end-around taxiway to be in use while aircraft are arriving Runway 7R, Imperial Highway and Pershing Drive would have to be relocated further south and west respectively. Relocation of Imperial Highway further south would require the acquisition and demolition of residences in the City of El Segundo while relocation of Pershing Drive further west would require development of the existing El Segundo Blue Butterfly Habitat Restoration Area located in the sand dunes west of LAX. The environmental impacts associated with these options are considered unfavorable.

LAX operates in east flow approximately 6 percent of the time. In contrast, all end-around taxiway designs do not address runway incursion risks during these operations. The proposed center taxiway design reduces runway incursion risks regardless of the airport operation.

4.0 TWO SUGGESTED MODIFICATIONS OF THE END-AROUND TAXIWAY DESIGN

4.1 End-Around Taxiway At-Grade Design

As described in the Final Report, the end-around taxiway alignment would traverse rugged terrain. The topography of the site includes significant grade differences of up to 45 feet. The modified design evaluated for this planning study would mitigate the grade changes of the taxiway, thereby reducing the need for taxing aircraft to power-up to climb any incline, consequently reducing the generated engine noise. To the greatest practicable extent, the modified design would maintain a level grade between each end of the end-around taxiway.

4.1.1 Overview of the At-Grade Design

The modified design is defined by its horizontal and vertical alignments. The horizontal alignment defines where the centerline of the taxiway is located, while the vertical alignment defines the elevation of the centerline and the edges of pavement in terms of longitudinal and transverse grades. The FAA provides criteria for the design of aircraft operating surfaces such as runways and taxiways.

This criterion is included in the FAA Advisory Circular 150-5300-13 – "Airport Design," which defines maximum pavement grades on which particular aircraft can operate.

The criteria defined for aircraft design Group V, with approach categories C and D, apply to the end-around taxiway designs. For this aircraft type, the FAA restricts the longitudinal grade to a maximum of one and one half percent (1.5%). Changes in longitudinal grades are transitioned with parabolic vertical curves. The length of the vertical curve is determined by the grade difference and should be no less than 100 feet long for every one percent (1%) difference in grade.

The centerline alignment of the at-grade design modification begins at the west end of Taxiway A and continues westward adjacent to the north side of Imperial Highway. It then turns 90 degrees north, roughly parallel to Pershing Drive. The north-south section of the end-around taxiway crosses the extended centerlines of Runways 7L-25R and 7R-25L. The taxiway elevation and alignment would allow a Boeing 747-400, with a tail height of 63.66 feet, to clear the Runway 25R departure surface. The Runway 25R departure surface starts 200 feet west of west endpoint of Runway 25R-7L. The departure surface has a slope of 62.5:1 (62.5 feet horizontal for every vertical foot rise). This Obstacle Clearance Surface follows the requirements of the ICAO and is widely used by the airlines in their computation of operating procedures. The final segment of the end-around taxiway has an east-west alignment and intersects existing Taxiway AA. The proposed end-around taxiway alignment would not allow an Airbus A380 to clear the Runway 25R departure surface.

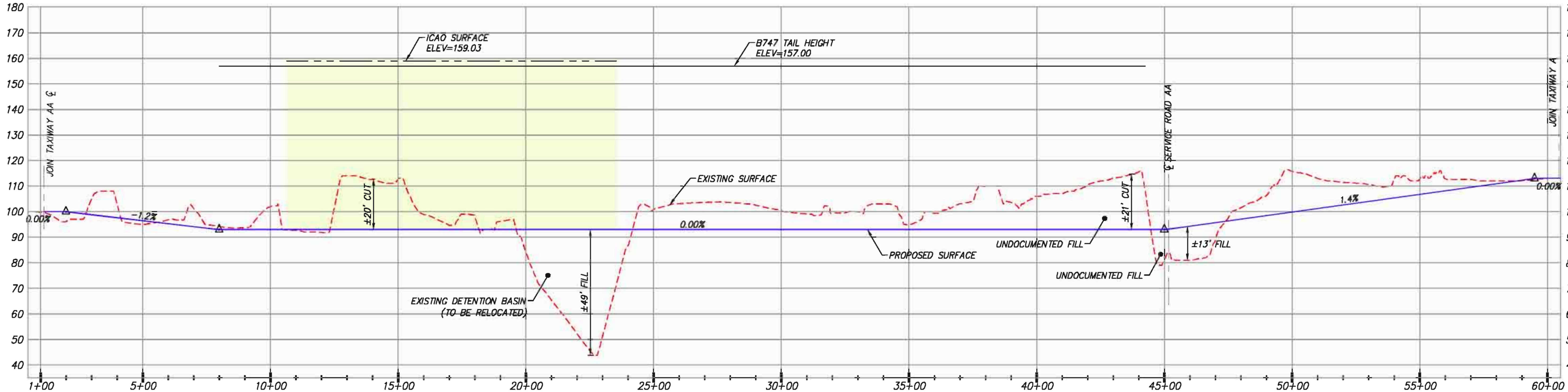
Because the north-south segment of the end-around taxiway would require a lower elevation than the existing west end of Taxiway A in order to accommodate a Boeing 747-400 underneath the Runway 25R departure surface, the initial east-west segment of the end-around taxiway would have a grade of 1.4 percent from east to west. The initial east-west segment of the end-around taxiway would be downhill for the exclusively west-bound taxiway traffic. The decline in elevation would allow aircraft to avoid using higher engine thrust to traverse this segment of the end-around taxiway closest to the residential area due south.

The profile of the north-south segment of the end-around taxiway would have a constant elevation in order to provide sufficient clearance for Boeing 747-400 aircraft taxiing along this segment underneath the Runway 25R departure surface.

The final east-west segment linking the end-around taxiway to existing Taxiway AA would have an incline gradient of 1.2 percent to bring the aircraft back up to the elevation of Taxiway AA, which is approximately 100 feet mean sea level (MSL). However, at this point, aircraft would be located further away from residential areas south of LAX and the alignment of the aircraft would direct the majority of engine noise west, away from residential areas.

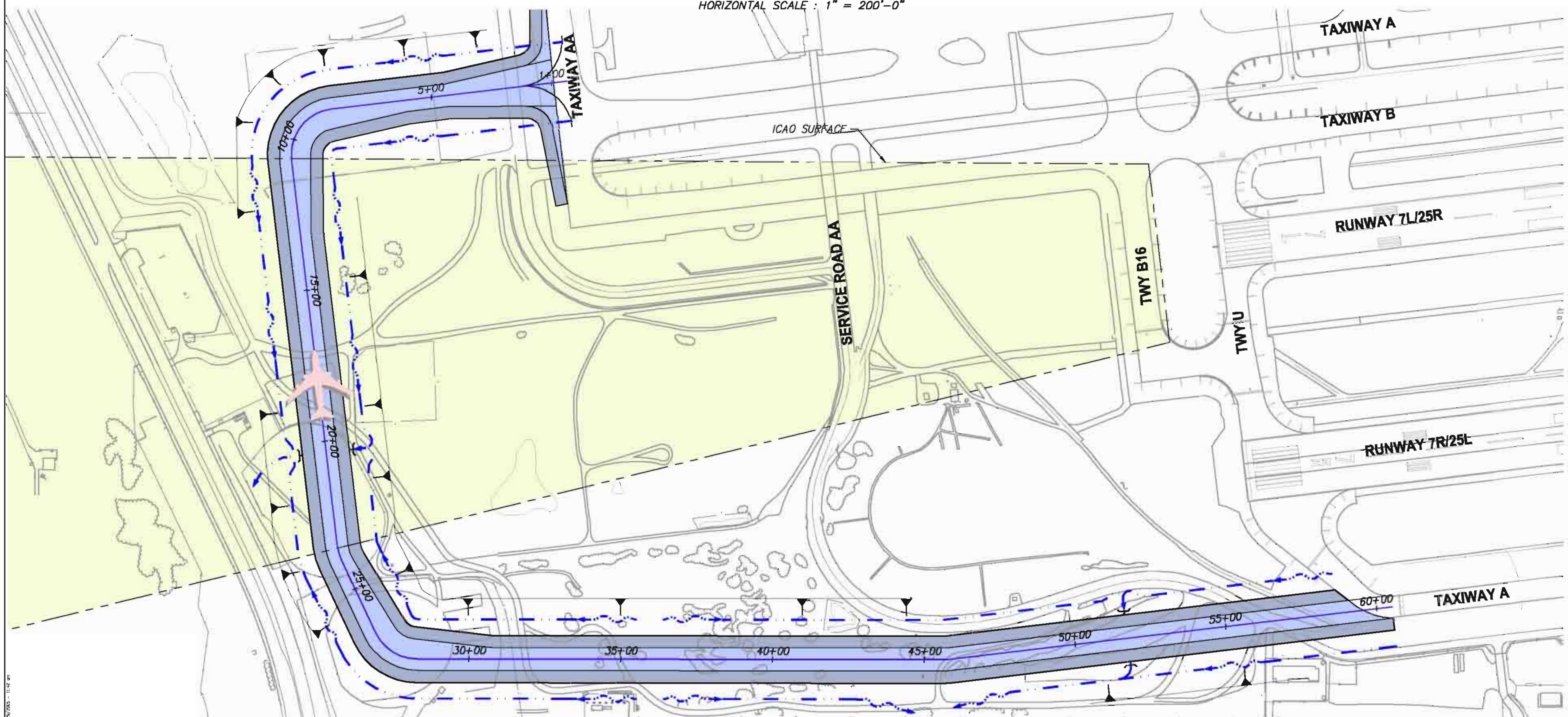
The total grade differential between the start point (at the west end of existing Taxiway A) and the end point (at the intersection of Taxiway AA) of the end-around taxiway is approximately 13 feet. **Figure 4** depicts the horizontal (plan) and vertical (profile) alignments of the at-grade design modification.

Engine thrust levels for aircraft taxi operations are not solely dependent on the taxiway grade. Higher engine thrust may be used to "break-away" from a stationary position, if there is a strong headwind,



PROFILE

VERTICAL SCALE : 1" = 20'-0"
HORIZONTAL SCALE : 1" = 200'-0"



PLAN

SCALE : 1" = 200'-0"

200' 0 200' 400'
SCALE 1" = 200'-0"

FIGURE 4
AT-GRADE ALTERNATIVE
PLAN AND PROFILE

HNTB
ARCHITECTS ENGINEERS PLANNERS
HNTB CORPORATION
6151 W. Century Blvd., Suite 1200
Los Angeles, Ca 90045
Phone: 310-417-8777
Fax: 310-417-5369

ONT PMD LAX VNY

or to accelerate to a faster taxi speed after slowing down to negotiate a turn. Minimizing the grade changes of the taxiway may reduce, but could not be expected to eliminate, the need for taxiing aircraft to use higher engine thrust settings during taxi operations.

4.1.2 Engineering Considerations Associated with the At-Grade Design

As depicted in Figure 4, the proposed vertical alignment of the at-grade design modification requires significant cuts and fills. The FAA provides guidance for determining the transverse grades allowed on taxiways and the adjacent surfaces for the safe aircraft operations. The areas adjacent to the taxiway comprise the taxiway safety area and Taxiway Object Free Area (TOFA). To promote positive transverse drainage, the safety area should be sloped away from the taxiway to a maximum grade of 5 percent. FAA recommends that grades outside of the safety area do not exceed a slope of 4:1 to match the existing slope.

4.2 End-Around Taxiway with Tugs Design

In response to El Segundo's request, this study evaluates a modified end-around taxiway with tugs design. Under this modification, all Runway 25L arrivals would reach the LAX Central Complex via the proposed end-around taxiway. However, in this modification, all jet aircraft would first stop at a staging apron in the vicinity of the existing Imperial Terminal south of Taxiway A where pilots would shut down the aircraft engines. Tugs would then tow aircraft from the staging apron to their assigned gate or other parking area. Aircraft destined for the cargo and general aviation (GA) areas south of Taxiway A would proceed as they do today under their own power.

4.2.1 Overview of the Tugs Design

This suggested modification would require a staging area large enough to accommodate the arrival rate of Runway 25L such that aircraft exiting the runway would have an area available to stop, power-off, be hooked-up to a tug and then towed to their gate or final position. The staging area site is constrained, however, as it is bounded by Imperial Highway on the south and Taxiway A to the north. Since Taxiway A and Imperial Highway converge, the site is narrower toward the west. The site is approximately 42 acres.

The return of tugs from the LAX Central Complex to the tug staging area would also necessitate construction of a new or expanded service road in order to prevent the return of tugs from interfering with the existing traffic volume of other service vehicles that use these roads.

The fleet of tugs would be sized appropriately to the traffic demand and the reliability rate of the tugs. Because there is no precedent for this type of operation, it is unknown whether any existing tug would be capable of towing fully loaded aircraft a distance of several miles multiple times every day in a reliable fashion.

A bank of tug tractors would need to be staged in an area clear of the aircraft operations area. Further, a ground control tower similar to those used by airlines to control their ramp operations would be required to marshal ground operations in the vicinity of the proposed apron. Due to the distance between the ATCT and the proposed apron, this area would not be under direct ATC supervision, as it is with other non-movement areas. The tug operator would begin towing the aircraft to its assigned arrival gate or other destination in the Central Complex via the end-around taxiway after receiving clearance from LAX ground control. There is no precedent for this type of operation. According to existing ATC personnel, there is limited visibility of this remote portion of the airfield, and it often becomes heavily congested.

The proposed location of the apron staging area is currently a cargo and in-flight/catering operations area. These existing operations would be displaced either on- or off-airport. The proposed alignment of the new end-around taxiway also traverses over a storm-water detention basin and the Aircraft Rescue and Fire Fighting (ARFF) training facility, and it would require relocation of the Police Shooting Range and high voltage underground power lines. These facilities would also have to be relocated or modified.

4.2.2 Aircraft Tug Operations

In order to better understand El Segundo's suggested end-around taxiway with tugs design modification, this section describes operation of aircraft tractor tugs.

Aircraft tractor tugs are diesel-powered vehicles commonly used to push and pull all types of aircraft around an airfield. They are driven by a tug operator, and they push and pull aircraft via the nose (front) landing gear. Older tugs connect to an aircraft's nose gear by a metal tow bar approximately 10 feet in length. One end of the bar connects to the aircraft while the other connects to the tug. Most modern tugs are called "towbarless tugs" because the metal tow bar between the aircraft and tug is eliminated. Instead, the tug attaches directly to the nose gear allowing for faster operation and easier control by the tug driver. Because tug operations move aircraft on the airfield without the use of the aircraft engines, they can contribute to quieter operations.

There are three types of tug operations:

- Pushbacks
- Maintenance Towing
- Dispatch Towing

A. Pushbacks

In pushback operations, tugs push aircraft back from a parked position, such as at a passenger gate or cargo apron. Although aircraft can power backwards using their engines, the jet blast in an area congested with other equipment and people is unsafe. For this reason, tugs are typically used to push aircraft away from the terminal gate when the aircraft prepare for departure or when they must be moved to other locations.

After an aircraft is cleared to leave the gate by ATC, a tug pushes the aircraft from the gate onto a taxilane or a taxiway, a distance typically within a few hundred feet. The tug operator wears headphones while maneuvering the aircraft, allowing him to communicate with the pilot and also hear communications between the pilot and the ATC. Once the tug operator has positioned the aircraft on a taxiway or taxilane, the tug operator detaches the tug from the aircraft. The pilot typically begins to start the aircraft engines while being pushed from the gate. Once the tug operator has detached the tug from the aircraft, checked the nose landing gear and cleared the tug from the aircraft, he signals the pilot from the ground, using his hands, that the aircraft and tug are clear of each other. Assuming the pilot has clearance from ATC, the pilot is then free to taxi the aircraft under its own power.

B. Maintenance Towing

Airlines often use tugs to reposition aircraft, because tugs can easily and cost-effectively maneuver aircraft for this purpose. Aircraft engines consume large quantities of fuel and require a lengthy start-up time of up to five minutes or longer. Because of the extremely limited visibility from the cockpit (especially toward the rear of the aircraft) and the safety issues associated with reverse thrust, it can be much easier to use tugs to maneuver aircraft in the apron area. Aircraft undergoing maintenance procedures may need to be repositioned several times within an airline's maintenance areas. Further, tugs must be used when aircraft engines are not operable during engine maintenance operations. Pilots are not needed for these operations as maintenance personnel are typically trained to move aircraft using a tug.

C. Dispatch Towing

Dispatch towing involves moving aircraft over long distances on the ground. At LAX, many foreign airlines relocate their unloaded aircraft from the Tom Bradley International Terminal (TBIT) to the west gate aircraft parking area while the aircraft are between flights. Passengers and cargo are unloaded after an international flight arrives at its TBIT gate. If an aircraft is not scheduled to depart within a relatively short period of time, the aircraft must be relocated to the west gate aircraft parking area so that other arriving and departing international flights can use TBIT's passenger gates. Most foreign airlines operating at LAX contract with ground service companies that own and operate aircraft tugs. These companies handle much of the foreign aircraft servicing at LAX including the dispatch towing of aircraft from the CTA (including TBIT) to the west gate aircraft parking area.

Using tugs for dispatch towing operations saves fuel by not requiring the use of the aircraft engines and prevents wear on expensive aircraft engine parts. It is, however, slow and cumbersome, which is not an issue for these foreign operations as typically they are not flights bound to a tight schedule. Consequently, ATC gives dispatch towing operations the lowest priority on the airfield, and they are required to yield to virtually all other taxiway traffic. It can take as long as 45 minutes to tow aircraft from the CTA to the west gate aircraft parking area, a distance via taxiway of two to three miles.

United Airlines has experimented with towing fully loaded aircraft from the terminal gates to the end of the departure runway end in order to save the fuel, provide additional range, and, in theory, save money. United used tugs for its wide-body, long-haul flights, towing them from the terminal gate to the departure runway end. Once at the departure runway end, the tug was detached and the pilot would start the aircraft engines, and, after warm-up, taxi onto the runway end and take off. This experimental program, which used United's Boeing 747 & Boeing 777, was unsuccessful and was almost immediately abandoned.

The operation failed because it caused substantial delay to each of the flights at departure. Towing over these long distances was much slower than when they taxied under their own power. The United flights that were being towed to the runway and going through engine start-up procedures at the runway end also delayed other airline's flights that were "stuck" behind the slow-moving aircraft.

5.0 APRON STAGING AREA CONCEPTUAL LAYOUTS

Three conceptual layouts were developed for the staging apron where aircraft would hold while tug vehicles are connected. These layouts are depicted in **Figures 5**, **6** and **7**. In general, all three

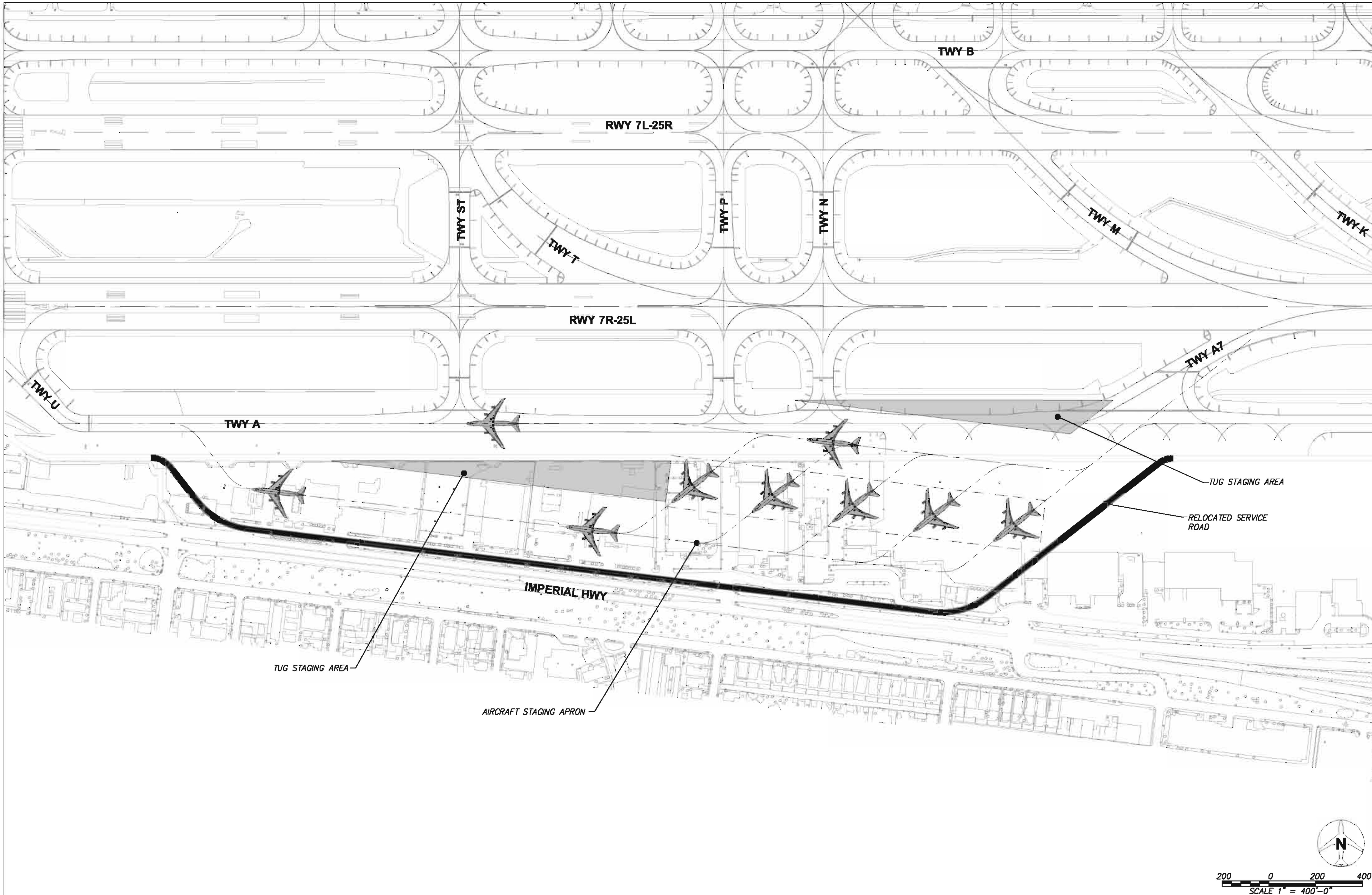
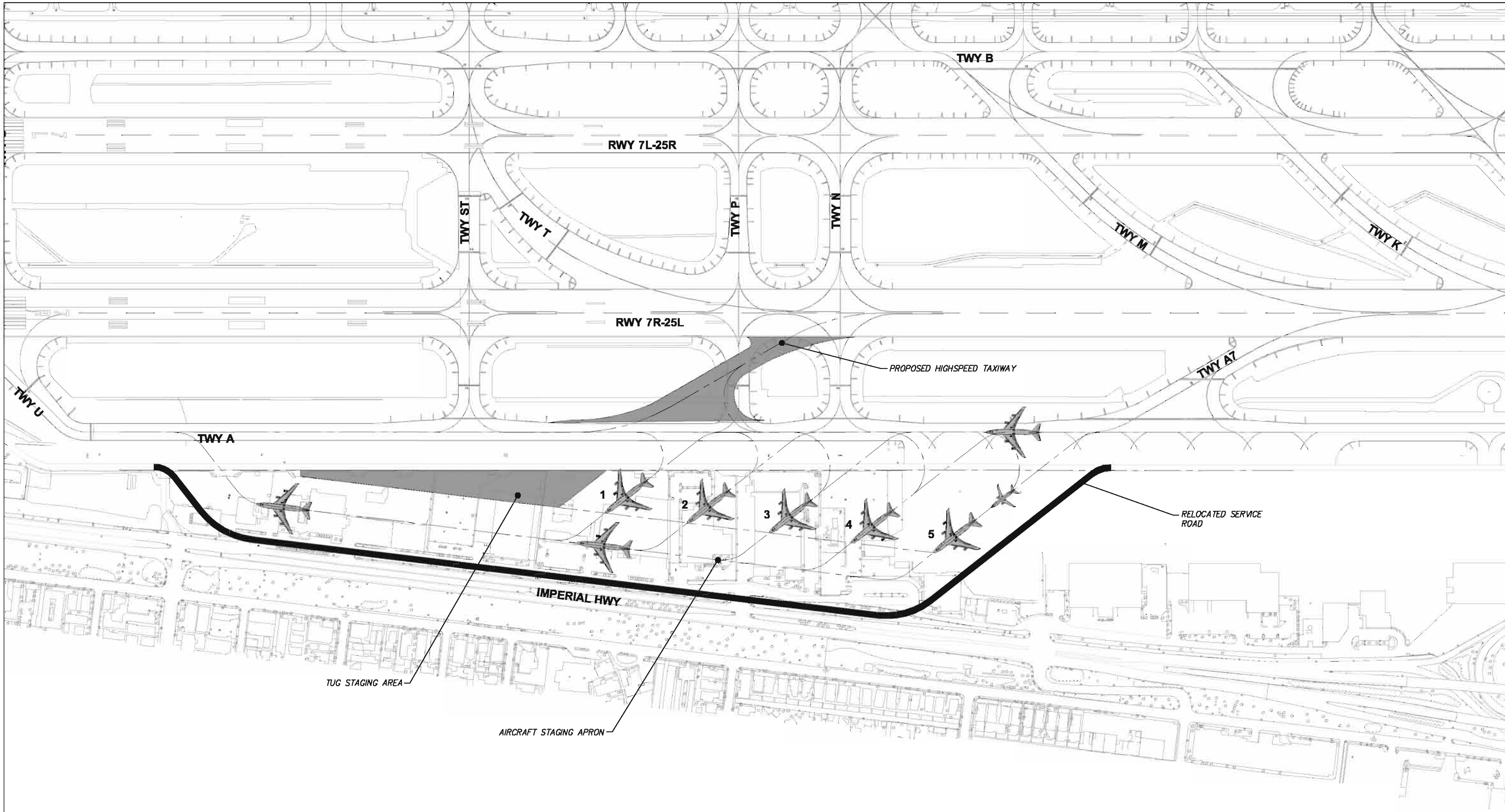


FIGURE 5
CONCEPTUAL LAYOUT 1

HNTB
ARCHITECTS ENGINEERS PLANNERS
HNTB CORPORATION
6151 W. Century Blvd., Suite 1200
Los Angeles, Ca 90045
Phone: 310-417-8777
Fax: 310-417-5369

ONT
PMD
LAX
VNY



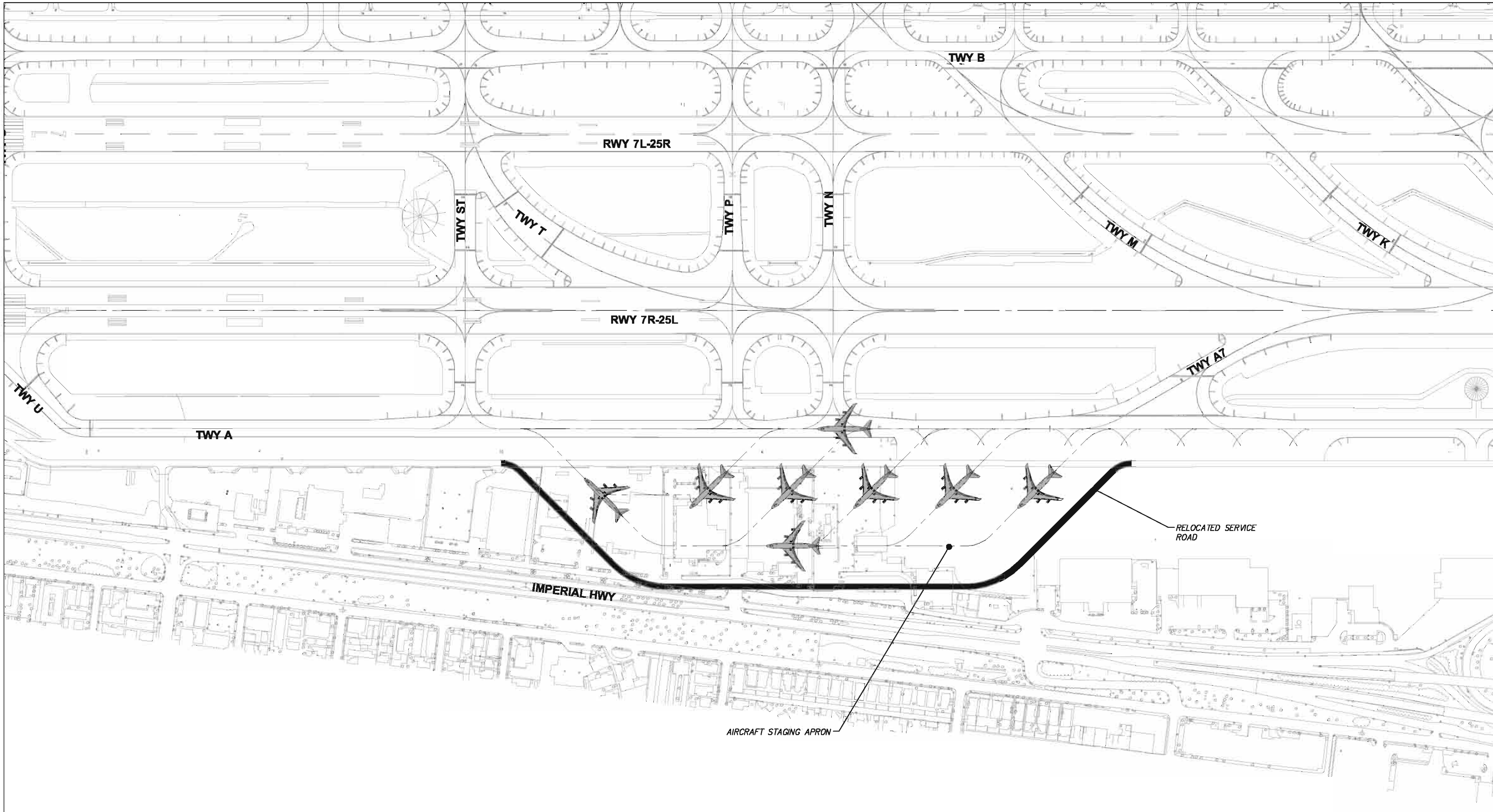
N

200 0 200 400
SCALE 1" = 400'-0"

HNTB
ARCHITECTS ENGINEERS PLANNERS
HNTB CORPORATION
6151 W. Century Blvd., Suite 1200
Los Angeles, Ca 90045
Phone: 310-417-8777
Fax: 310-417-5369

ONT PMD LAX VNY

FIGURE 6
CONCEPTUAL LAYOUT 2



N

200 0 200 400
SCALE 1" = 400'-0"

HNTB
ARCHITECTS ENGINEERS PLANNERS
HNTB CORPORATION
6151 W. Century Blvd., Suite 1200
Los Angeles, Ca 90045
Phone: 310-417-8777
Fax: 310-417-5369

ONT PMD LAX VNY

FIGURE 7
CONCEPTUAL LAYOUT 3

conceptual layouts function similarly; however the Conceptual Layout 2 would meet more of LAWA's requirements. Because LAX normally operates in west flow with aircraft arriving and departing to the west, the most favorable location for the staging apron would be the western end of the south runway complex nearest the point aircraft exit the arrival Runway 25L after landing.

Four high-speed exit taxiways off Runway 25L presently accommodate arrivals exiting to the north. High-speed exit taxiways are acute-angled taxiways between a runway and a parallel taxiway that allow aircraft to exit the runway at a slightly higher speed than taxiways constructed at an angle perpendicular to the runway. However, there is only one existing high-speed exit available south off Runway 25L. Taxiway A7 is located approximately 5,300 feet west of the Runway 25L threshold and connects with Taxiway A on the south. Taxiway A extends the full length of the runway and is parallel to Runway 7R-25L. Runway 7R-25L and Taxiway A have a 500-foot centerline-to-centerline separation distance.

There are four additional taxiways connecting Runway 7R-25L and Taxiway A west of Taxiway A7: Taxiway N, Taxiway P, Taxiway ST and Taxiway U. Taxiway U is located at the far west end of Runway 7R-25L. Each of these taxiways is perpendicular to Runway 7R-25L.

Approximately 90 percent of all aircraft arriving on Runway 25L would exit using the existing high-speed exit Taxiway A7. A second high-speed exit taxiway would be required approximately 2,100 feet further west of Taxiway A7 (Figure 6). One hundred percent of the forecast fleet mix could exit at one of these two high-speed exit taxiways. Both high-speed exit taxiways are in the vicinity of the proposed apron staging area, which would minimize the length of time aircraft must taxi under their own power to reach the proposed apron staging area.

The proposed apron staging area could be located west of the existing Qantas Airlines freight building located at 6555 West Imperial Highway. The proposed site is roughly bounded by the Qantas Freight building to the east, Imperial Highway to the south, Main Street to the west and Taxiway A to the north (see Section 6.0, Land Use, regarding the displaced facilities that are currently located in this area).

Each of the three apron staging area conceptual layouts would provide three primary components:

1. Five aircraft hold positions, each capable of accommodating a large wide-body aircraft such as a Boeing 747-400.
2. A staging area for the tug vehicles and other support equipment.
3. A supplemental ramp control tower for ground control operators to maintain a clear line of sight on operations in this area.

Although five aircraft staging positions would be provided to accommodate peak arrival operations, the number of required aircraft staging positions would rarely exceed three. The relatively high potential for tug vehicle malfunctions, however, necessitates one additional position in the event that a position is occupied due to a malfunctioning vehicle. A second additional hold position would accommodate aircraft that arrive prior to their schedule arrival time. Aircraft without an available arrival gate would need to be held on the staging apron until their scheduled arrival gate is available. Finally, the apron staging area must be large enough to prevent queues from building onto Taxiway A, which would potentially impede arriving aircraft from exiting the runway after landing. Aircraft arriving on the north airfield destined for the cargo or GA facilities south of Taxiway A would be required to cross the south airfield runways at Taxiways G or F as Taxiway A would accommodate west bound traffic only west of Taxiway A7. Today, these aircraft cross the south airfield at Taxiway N or further west to avoid the heavily congested Taxiways B and C south of the LAX CTA.

A. Conceptual Layout 1 (Figure 5)

Conceptual Layout 1 would involve construction of an apron accommodating five large wide-body hold positions, a ramp control tower, and two tug staging areas. A portion of Taxiway A would be realigned to parallel with the proposed staging area exit taxilane, which is aligned parallel to Imperial Highway south of the airport property. Each of the five aircraft staging positions would accommodate two narrow-body aircraft or one large wide-body aircraft. The eastern tug equipment area would require that service vehicles traveling from the equipment area to the aircraft staging area cross active Taxiway A. Conceptual Layout 1 provides fewer aircraft staging positions than Conceptual Layout 2. Although it offers additional tug equipment area, it has the substantial disadvantage of having an active taxiway separate tugs and other ground support equipment (GSE) from the aircraft staging area.

B. Conceptual Layout 2 (Figure 6)

In Conceptual Layout 2, Taxiway A would not be realigned and there would not be a second tug equipment and GSE area. Conceptual Layout 2 would provide five hold positions for aircraft staging. The two easternmost hold positions would be able to accommodate additional narrow-body aircraft due to the additional distance between the staging apron taxilane and existing Taxiway A.

C. Conceptual Layout 3 (Figure 7)

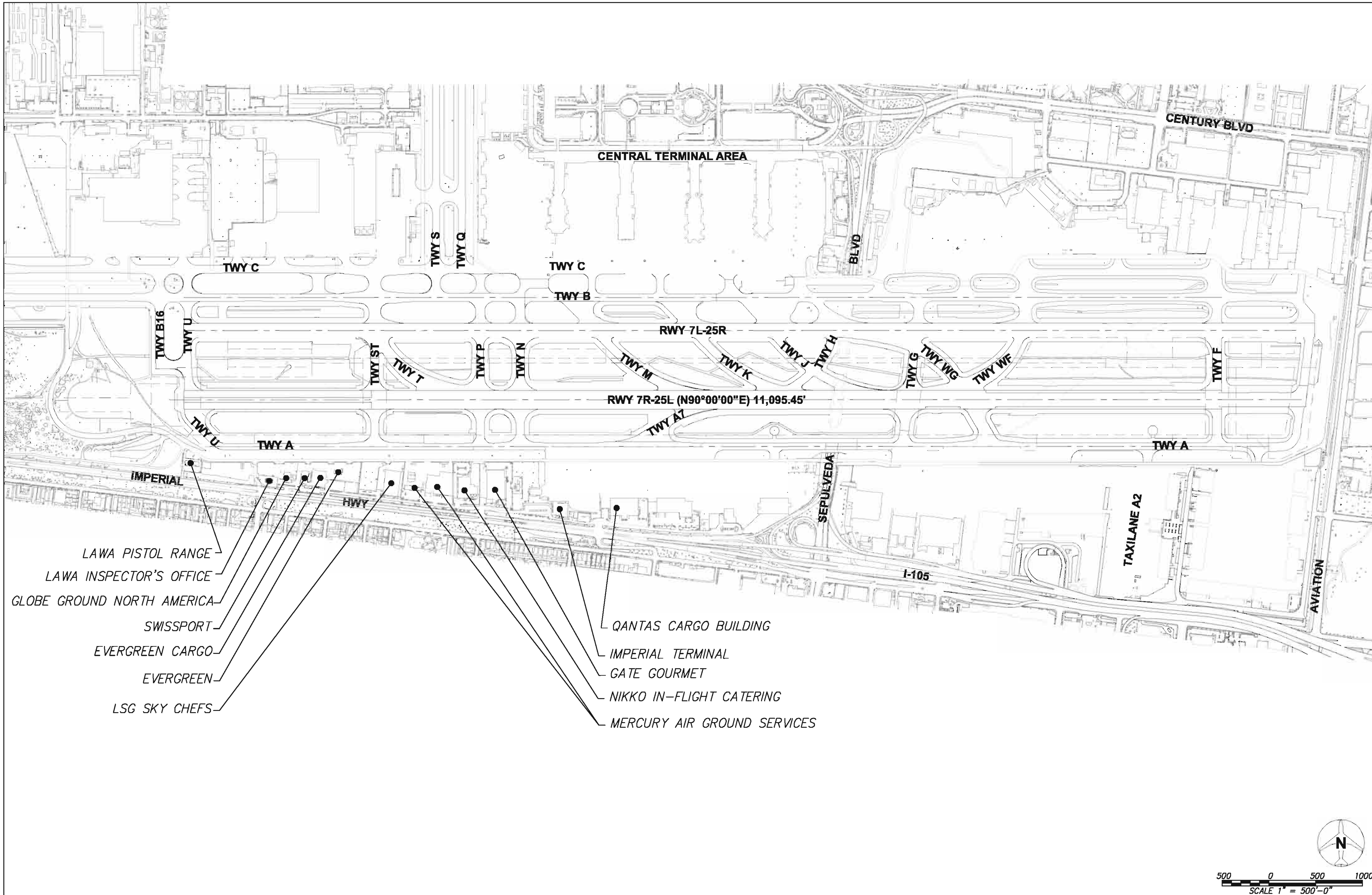
Conceptual Layout 3 would accommodate three aircraft hold positions of equal size, each of which would accommodate one large wide-body aircraft and two narrow-body aircraft. Conceptual Layout 3 provides the smallest total apron area, potentially helping preserve some of the existing facilities that would otherwise require relocation. However, Conceptual Layout 3 does not maximize use of the available area and does not provide the maximum potential staging area. Conceptual Layouts 1 and 2 both provide additional taxi-lanes for queuing of aircraft prior to their entry onto the end-around taxiway, but Conceptual Layout 3 fails to provide any significant queuing area on the aircraft staging apron.

D. Most Favorable Conceptual Layout

Conceptual Layout 2 would be the most favorable Conceptual Layout because it:

1. Provides the required number of available aircraft staging positions.
2. Provides sufficient tug and GSE area.
3. Provides the maximum amount of aircraft queuing area.
4. Does not relocate or displace existing Taxiway A.

Each Conceptual Layout provides an equipment staging area for tug vehicles and other GSE.



Draft Deliberative Material for Discussion Purposes Only

FIGURE 8
EXISTING SOUTH AIRFIELD LAYOUT

HNTB
ARCHITECTS ENGINEERS PLANNERS
HNTB CORPORATION
6151 W. Century Blvd., Suite 1200
Los Angeles, Ca 90045
Phone: 310-417-8777
Fax: 310-417-5369

ONT PMD LAX VNY

Conceptual Layouts 1 and 2 provide five positions for large wide-body aircraft to hold while awaiting hook-up to a tug vehicle. However, Conceptual Layout 2 provides additional room for two or three aircraft behind the two eastern hold positions for additional aircraft to hold clear of Taxiway A.

Conceptual Layouts 1 and 2 also provide a 1,200-foot taxilane parallel to Imperial Highway, which provides an additional area for aircraft to queue prior to entering Taxiway A and the end-around taxiway. This queuing area, separate from Taxiway A, could be critically important in the event of extensive delays. Because of the added potential for delay due to the use of tug vehicles and the complexity of this operation, such a queuing area is critical to efficient airfield operations. Conceptual Layout 3 fails to maximize the availability of area to queue aircraft without congesting Taxiway A.

Conceptual Layouts 1 and 2 both provide an additional 1,200 feet of taxilane which is sufficient to queue up to four large wide-body aircraft without impeding Taxiway A.

Finally, in contrast to Conceptual Layout 1, Conceptual Layout 2 would not displace the existing Taxiway A centerline. Realignment of Taxiway A would provide additional tug equipment storage area north of Taxiway A. However, tugs and other service vehicles would be required to cross a very busy taxiway in the vicinity of high-speed runway exits to access the aircraft staging area. Further, Conceptual Layout 2 would be the safest conceptual layout by maintaining the existing alignment of Taxiway A, which avoids potential pilot confusion when taxiing in low visibility conditions.

For these reasons, Conceptual Layout 2 is the most favorable Conceptual Layout for the design of the aircraft/tug staging apron.

6.0 LAND USE

The land use impacts associated with the end-around taxiway design have been previously described in the Final Report. The Final Report stated the need to relocate the following facilities to construct the end-around taxiway: the existing LAX police shooting range, the detention pond located near the intersection of Pershing Boulevard and Imperial Highway, and the high voltage power lines that are buried in the area west of Runways 7R-25L and 7L-25R.

Introduction of a staging apron where aircraft would stop and shut down would introduce additional land use requirements and would displace several existing facilities not previously earmarked for relocation.

The new apron would be constructed in the area south of Taxiway A and west of the existing Qantas Freight building in the southwestern portion of the LAX airfield. This would displace multiple airport tenants that currently occupy the area (along West Imperial Highway). Under this design, the facilities listed below would need to be relocated elsewhere either on or off of airport property (**Figure 8**).

- Imperial Terminal (Museum and Charter Aircraft Terminal)
- Gate Gourmet (Flight Kitchen)
- Nikko In-flight Catering (Flight Kitchen)
- Mercury Air Ground Services (Airline Service)

- LSG Sky Chefs (Flight Kitchen)
- Evergreen Cargo (Cargo/Airline Service)
- Swissport (Airline Service)
- Globe Ground North America (Airline Service)
- LAWA Inspector's Office (Airport Administration)

In addition, one of two Airport Surveillance Radar (ASR) Antennas is located in this area and would require relocation. The ASR-9 is a radar antenna used to monitor aircraft up to an altitude of 25,000 feet that are operating in the LAX terminal area (within 60 nautical miles of the airport). It is a navigational aid (NAVAID) owned and operated by the FAA. It produces radar data used by the FAA's ATC to monitor flights in the vicinity of LAX. The ASR-9 is located between Imperial Terminal and Gate Gourmet south of Taxiway A. Because of the sensitive nature of the information the ASR provides, there are extensive siting requirements and restrictions to its location. Antennas should be located at least 1,500 feet from any building or object that might cause signal reflections and at least one-half mile (0.8 km) from other electronic equipment. ASR antennas may be elevated to obtain line-of-sight clearance. Typical ASR heights range from 25 to 85 feet above ground.

Recently adopted LAX zoning and land use restrictions currently prohibit aircraft from taxiing in the area proposed for construction of the staging apron. As stated in the Los Angeles International Airport Specific Plan (the Specific Plan), approved December 14, 2004, Section 8, Land Use, Subsection D, Imperial Terminal Area, aircraft are not allowed to taxi under power within the LAX-A Zone – Imperial Terminal Area.

> *The Imperial Terminal Area is the approximately 42.5 acre are north of Imperial Highway between Main Street and California Street. In this area, aircraft maneuvering may be conducted by tug and tow procedures. The use regulations both permitted and prohibited uses, specified in this section for the LAX-A Zone shall apply, except, the following uses shall be prohibited:*
>
> *a. Aircraft under power*

The Imperial Terminal Area, as defined in the Specific Plan is bounded to the north by Taxiway A. In order for aircraft to taxi into position on the proposed aircraft staging apron, south of Taxiway A, the power use prohibitions would have to be modified or eliminated to permit aircraft under power.

Prohibition of taxi operations south of Taxiway A was instituted to protect the neighboring City of El Segundo from noise impacts associated with the limited aircraft taxiing in the portion of the airfield located closest to residential areas. Should this design be implemented, 100 percent of aircraft (more than 400 per day) that arrive on Runway 25L would taxi in this area, which would require the abolition of any taxi restrictions.

Additionally, the recently adopted LAX Zone designates the area as M3 (heavy industrial).

Key factors to be considered in determining new sites for existing facilities that may have to be located off of airport property include proximity of the proposed site to the Airport and access to the Airport. Each of the tenants that would be displaced due to construction of the proposed apron has an important role in the operation of the airport. Flight kitchens and ground service providers operate at a high level of efficiency. Relocation would typically require that these facilities are able to operate at an equal or greater level of service in the future so as to avoid any degradation of service.

Each airport tenant provides revenue for the operation of the airport. Relocating facilities off of the airport site, and replacing them with a non-revenue producing land use (such as the proposed staging apron) would negatively impact airport finances.

LAWA is bound by lease agreements with varying terms and conditions with each of the tenants. Any development action in the areas of the airport currently under lease exposes LAWA to potential legal action unless the agreements expire prior to any development action.

Additionally, there are significant time constraints associated with facility relocation. It is particularly time consuming to relocate sensitive NAVAID facilities such as the ASR-9 and conduct the required sensitivity testing of the new facility prior to the decommissioning and dismantling of the existing facility. As mentioned previously, each existing tenant would need to be relocated prior to demolition of any existing facility. Completion of all of these tasks must take place prior to beginning construction of the proposed apron.

The combined tenant facilities located within the proposed apron staging area encompass approximately 42 acres of land and generate over $3.5 million in annual revenue for LAWA. Brief descriptions of each facility are provided below (from east to west):

A. Imperial Terminal

Imperial Terminal is located at 6661 West Imperial Highway. It is the easternmost building within the proposed apron area. The terminal facility is approximately 22,910 square feet. The building currently houses the Flight Path Aviation Historical Museum. The ramp area outside the building is used by various charter air carriers. The passengers of those carriers are transported between this ramp and the CTA via bus, and the terminal building is not used for passenger processing activities at all. The terminal accommodated a total of 585 aircraft operations (97 departures and 488 arrivals) in 2002.

B. Gate Gourmet

Gate Gourmet is located at 6701 West Imperial Highway. The facility building is approximately 62,660 square feet. It operates as a flight kitchen and provides catering services to airlines. The current Gate Gourmet lease agreement is effective through May 27, 2023.

C. Nikko In-flight Catering

Nikko In-flight Catering is located at 6751 West Imperial Highway. The building is approximately 38,060 square feet. Nikko In-flight Catering operates as a flight kitchen and provides catering services to airlines. The current Nikko Catering lease agreement is effective through June 30, 2006.

D. Mercury Air Ground Services

Mercury Air Ground Services is located at 6851 West Imperial Highway. The building is approximately 68,860 square feet. Mercury provides ground handling services to the airlines. Aviation ground service companies are an integral component of the operations at LAX. Many foreign carriers rely heavily on local ground service companies to provide services for their flights. Services include passenger processing (check-in, baggage handling, etc.), customer/ramp service personnel, flight planning and scheduling, food services, ground handling services, aircraft maintenance and repair, flight operations personnel (weight and balance calculations), transportation/shuttle service, and security services. The existing Mercury lease agreement is effective through December 31, 2009.

E. LSG Sky Chefs

LSG Sky Chefs is located at the 6901 West Imperial Highway. The building is approximately 44,680 square feet. LSG Sky Chefs operates as a flight kitchen and provides catering services to airlines. The LSG lease agreement is effective through December 31, 2005.

F. Evergreen Cargo

Evergreen Cargo is located at 6951/7001 West Imperial Highway. The combined buildings are approximately 30,740 square feet. Evergreen provides ground handling services. The tenant lease agreement is effective through March 31, 2010.

G. Swissport

Swissport is located at 7007 West Imperial Highway. The building is approximately 15,340 square feet. Swissport provides ground handling, cargo, executive aviation, and maintenance services. Swissport's existing lease agreement is effective through March 31, 2010.

H. Globe Ground North America

Globe Ground North America is located at 7025 West Imperial Highway. The building is approximately 8,140 square feet. Globe Ground provides ground handling services to the airlines. The Globe Ground lease agreement is effective through May 31, 2006.

I. LAWA Inspector's Office

The LAWA Inspector's Office building is located at the westernmost part of the proposed apron area and is approximately 2,706 square feet. The engineering personnel within the Inspector's Office are responsible for engineering, construction, and surveying on the Airport. As a LAWA administrative facility, the Inspector's office is not an airport tenant and has no lease agreement with LAWA.

7.0 STAGING AND PHASING ISSUES

Implementation of either of the suggested design modifications would affect the operations of the Airport and its environs.

Construction of either design modification would need to be staged to maintain the existing safe and efficient airfield operating conditions throughout implementation process. The implementation process would consist of the following stages:

A. Preparation

New facilities would be constructed on or around the airport to accommodate the various airport tenants displaced by the proposed development.

B. Demolition

Existing facilities would be removed from the development site to make way for preparation of and construction of the proposed improvements. This would include demolition of existing structures, facilities and infrastructure located in the construction area.

C. Site Preparation

Grading and other site preparation would begin to allow for construction of the airfield surfaces (taxiways and apron).

D. Construction

Any new facilities, including paving and supporting infrastructure would be constructed. This includes ancillary facilities such as GSE staging and maintenance areas, and the ramp control tower.

E. Testing, Operation and Maintenance

The safety components of the newly constructed airfield facilities (e.g., NAVAIDS and lights) would be tested for operational accuracy.

8.0 COMPARATIVE EVALUATION

As described above, the evaluation of the end-around taxiway with tugs design modification uses computer simulation and modeling to determine its performance with respect to certain specific airport planning metrics including delay (in terms of minutes per aircraft operation) and noise and air quality impacts. This planning study also compares the performance of the end-around taxiway with tugs modification to the recommended center taxiway design.

9.0 CAPACITY / DELAY EVALUATION

Certain expected operational impacts of the end-around taxiway with tugs design modification were measured using an enhanced derivative of the Airport and Airspace Simulation Model (SIMMOD™) known as SIMMOD PRO! This model determines average taxi time and delay for aircraft operations at a given airport, based on the number and layout of the runways, taxiways, aprons and gates.

The model has been validated by the FAA, and is an industry standard analysis tool used by airport planners and operators, airlines, airspace designers, and ATC authorities for conducting high-fidelity simulations of current and proposed airport and airspace operations. SIMMOD™ is designed to "play out" airport and airspace operations within the computer and calculate specific expected consequences of potential operating conditions. It has the capability and flexibility to address a wide range of "what if" questions related to airport and airspace capacity, delay, and efficiency.

9.1 Demand Schedule

A key assumption the model requires to accurately reflect the behavior of the airfield layout is a Demand Schedule. Here, the Demand Schedule used is one day's flight information for a given airport. Each flight's arrival or departure time, airline, and aircraft type is included in the demand schedule.

The 2005 Demand Schedule developed for the LAX Master Plan was used for two primary reasons. First, the 2005 Demand Schedule is close to today's actual flight activity, which will help determine how the airport might operate at the existing demand level with the proposed modifications. Second, the 2005 Demand Schedule reflects airline scheduling behavior based on all four existing runways being available for operations. In previous simulations for the South Airfield Studies, a forecast demand schedule was developed to reflect airline behavior during interim runway closures. In this case, use of such a schedule would not have been appropriate.

9.2 Capacity/Delay Simulation Assumptions

For purposes of this analysis, only one predominate runway operating configuration (west flow) was simulated. West flow occurs when aircraft are landing and taking off to the west. Visual Flight Rules (VFR) or "good" weather, account for nearly 70 percent of the time during this Plan. Therefore, the West Plan under VFR weather, with visual approaches, was selected as the most representative configuration to be modeled. In general, during Visual or "clear sky" conditions, aircraft can reduce their interval between subsequent arrivals on final approach to the airport by applying visual separations, therefore increasing the number of aircraft that can land and take off.

The end-around taxiway with tugs design would only be used when the airport is operating in west flow (as noted earlier, the center taxiway design addresses runway safety improvements during both west and east flow). LAX operates in west flow approximately 94 percent of the time; however, visual conditions are not present 100 percent of that time.

With implementation of the suggested design, all aircraft arriving Runway 25L would exit the runway south to Taxiway A. Aircraft are then separated into one of three categories: non-jet, jet or south field destination. Non-jet powered aircraft, due to their relatively quiet nature, would not be required to be tugged to the terminal area and would continue to taxi under their own power via the end-around taxiway. Aircraft destined for the cargo complex or GA complex, located south of Taxiway A, would also continue under their own power to their respective destinations.

All jets destined for the LAX Central Complex area (all airport facilities between the runways), however, would be required to taxi to the proposed staging apron (see Figure 2) where the pilots would shut down the engines while the aircraft is connected to a tug. The aircraft would then be towed to its gate, or other destination, via the end-around taxiway.

To project the length of time required to tow aircraft from the proposed apron to the CTA, the model must know the speed at which they are tugged as well as the time it takes for the aircraft to be hooked up to a tug tractor. Based on performance data obtained from one of the largest manufacturers of modern "towbarless" tugs, the towing speed was modeled as 13 knots (15 mph). Based on observations of tug hook-up times on the LAX airfield in December 2004, the modeled tug hook-up time was two minutes.

The minimum amount of time elapsing from the time an aircraft exits the runway until it begins its journey under tow from the proposed apron to the arrival gate is three minutes. Turbojet aircraft engines require a minimum of three minutes of low load (idle or taxi) operation time after exiting the runway. Additionally, for safety reasons, aircraft cannot be moved under power of a tug while the engines are running. However, it is possible for the tug operator to connect the tug to the aircraft while the aircraft is stationary and the engines are idling. Therefore, the three minutes of required idling time and the two minutes tug hook-up time are not compounded.

As an example, an aircraft can exit Runway 25L and stop at one of the available tug hook-up positions in 30 seconds. It then takes the tug operator two minutes to connect the tug to the aircraft. At this point 2.5 minutes have elapsed since the aircraft exited the runway. In this design, an additional 30 seconds of idle time would be required before the pilot can safely shut down the aircraft engines. Once engine shut down is complete, the aircraft can be towed by the tug.

As illustrated in Figure 7, the proposed aircraft staging apron has five taxilanes leading to five independent aircraft hold positions. Each jet arrival would taxi to one of five hold positions, connect to a tug and be towed from the hold position to its gate via the end-around taxiway. Each position can accommodate at least one wide-body aircraft, such as a Boeing 747-400.

Behavior of the staging apron is programmed into the model in order to generate the most representative results. Because the tug staging area is west of the five aircraft parking positions, the westernmost position (closest to the tug staging area) was given the highest priority when the apron was empty. Thus, the apron would fill from west to east.

In the event that all five apron staging lanes are occupied, subsequent arrivals would proceed west on Taxiway A to the west end of the taxiway where an auxiliary hold position would be available for tugs to be hooked-up to aircraft.

9.2.1 Capacity/Delay Simulation Results

The simulation results compare the taxi time and delay for the end-around taxiway with tugs modification to the center taxiway design.

Of the 1,089 arrivals simulated in the 2005 Demand Schedule, approximately 489 aircraft used Runway 25L and approximately 313 aircraft were tugged.[1] Only turbojet aircraft destined for the LAX Central Complex were tugged. Turbo-prop aircraft destined for the LAX Central Complex were allowed to taxi under their own power due to their lower noise emission. Aircraft destined for the GA or cargo areas south of Taxiway A were not tugged.

Simulation results illustrate the impacts not only to operations in the south airfield but also to show the impacts to the performance of the airport as a whole. Though the impacts associated with the suggested design modification almost exclusively impact operations on the south airfield, when the overall airport performance is averaged, the impacts are notable.

A. Arrival Taxi Time

For arriving aircraft, the taxi time is the time spent taxiing from the runway exit point to the gate. Average taxi time includes any delay incurred while taxiing.

[1] Due to random variables within the simulation model, the exact runway usage changes slightly for each iteration the model is run. The 489 arrivals to Runway 25L and 313 tugged aircraft are an average over 10 iterations run by the simulation.

TABLE 1 Runway 25L Average Taxi Time for Arriving Aircraft (Including Delay)	
Design	Time in Minutes
Center Taxiway	8.10
End-Around with Tugs	16.57

Table 1 presents average Runway 25L arrival taxi time, including delay, for each design in west flow VFR with visual approaches. As shown in Table 1, there is a larger increase in taxi time for Runway 25L arrivals relative to the all airport average. Runway 25L average arrival taxi time increases to 16.57 minutes per operation, with the end-around taxiway with tugs design, from 8.10 minutes per operation for the center taxiway design. This is an increase of 8.47 minutes, or 105 percent, per operation.

B. Arrival Delay

Taxi delay represents any delay incurred while taxiing from the runway endpoint to the arrival gate including time spent connecting the tug vehicle to the aircraft.

TABLE 2 Runway 25L Average Taxi Delay for Arriving Aircraft	
Design	Time in Minutes
Center Taxiway	0.78
End-Around with Tugs	1.70

Table 2 presents Runway 25L average arrival taxi delay for each design in west flow VFR with visual approaches. Average Runway 25L delay per arrival taxi operation increases to 1.70 minutes per operation, with the end-around taxiway with tugs design, from 0.78 minutes per operation for the center taxiway design. This is an increase of 0.92 minutes, or 118 percent, per operation.

The increase in arrival taxi delay for the end-around taxiway with tugs design is due, primarily, to the two minutes needed to connect the tug vehicles to aircraft. Of the 489 Runway 25L arrivals, 313 (64%) aircraft would require tugging.

C. Unimpeded Arrival Taxi Time

Unimpeded taxi time represents all ground taxi time including runway occupancy time, but not including delay.

TABLE 3 Unimpeded Average Taxi Time for Arriving Aircraft Runway 25L	
Design	Time in Minutes
Center Taxiway	7.32
End-Around with Tugs	14.87

Table 3 presents average Runway 25L arrival unimpeded taxi time for each design in west flow VFR with visual approaches. Average Runway 25L unimpeded taxi time per arrival taxi operation increases to 14.87 minutes per operation, with the end-around taxiway with tugs design, from 7.32 minutes per operation for the center taxiway design. This is an increase of 7.55 minutes, or 103 percent, per operation.

10.0 AIRCRAFT NOISE EVALUATION

As with the taxi time and delay evaluation, the noise analysis compares the end-around taxiway with tugs design to the center taxiway design.

10.1 Introduction

This section reports the results of an evaluation of the aircraft noise impacts of the two designs. This analysis used the FAA's Intergraded Noise Model (INM) to determine noise exposure levels for taxiing aircraft based on the operating assumptions of the two designs.

10.2 Aircraft Noise Modeling Assumptions

The following assumptions were made to model and report the aircraft noise impacts of each of the designs:

- Flight tracks were taken directly from SIMMOD.
- Modeled taxiways included all paths at the south side of the airport because the arrival and departure traffic from Runway 25L is of principal concern to this study. Taxi paths to and from the cargo and GA areas are also included.
- All taxiing aircraft were assumed to be using 10 percent static thrust and to be traveling at a steady 17 knots. Engine height was assumed to be an average of 10 feet above field elevation for all aircraft.
- All aircraft that taxi across Runway 25R must stop before reaching the runway, which represents a very conservative scenario and simplifies the modeling. The restarts were modeled as run-up operations at the point where the first aircraft in line must stop. The run-up duration was modeled as that required to propel each aircraft (based on landing weight) to a velocity of 17 knots, using approximately 40 percent of the aircraft static thrust.
- Tug operations do not produce any measurable noise in this analysis. Auxiliary Power Unit (APU) and diesel tug operation noise were not accounted for.

10.3 Noise Simulation Results

The noise analyses for this study were completed for the Sound Exposure Level (SEL) metric. This metric studies the cumulative effects of A-weighted noise. The metric does not weight the noise for the time of its occurrence, nor does it average the noise over 24 hours like the Community Noise Equivalent Level (CNEL) metric used in the LAX Master Plan. Instead, it is simply a measure for the total cumulative noise that the areas surrounding the airport receive during the entire study day as if it had all occurred simultaneously within a period of one second. Consequently, the plots indicate a higher decibel level than will ever actually be heard at a given location within the contours, but the contours are suitable for purposes of comparing the qualitative differences in the surrounding community noise exposure of the two designs.

The 100 decibels (dB) SEL noise contours are presented in **Figure 9** for both the end-around taxiway with tugs design and the center taxiway design. As shown in this figure, the southern boundary of the contour for the end-around configuration extends farther into the El Segundo community and farther west than the center taxiway contour.

11.0 AIR QUALITY EVALUATION

As with the previous sections, the air quality analysis compares the end-around taxiway with tugs design to the center taxiway design.

11.1 Introduction

The analysis comparing air quality impacts focused on criteria pollutant and toxic air contaminant (TAC) emissions from the change in taxi times, taxi delays, and use of GSE for each of the two designs.

11.2 Criteria Pollutants

Five criteria pollutants were evaluated as part of the analysis, including sulfur dioxide (SO_2), carbon monoxide (CO), particulate matter with an aerodynamic diameter ≤ 10 micrometers (PM_{10}), nitrogen dioxide (NO_2), and ozone (O_3). Lead (Pb) was not evaluated since ongoing Airport operations are expected to have a negligible impact on lead emissions in the South Coast Air Basin. Additional information regarding the five criteria pollutants that were evaluated in the air quality analysis is presented below.

11.2.1 Ozone (O_3)

Ozone, commonly referred to as photochemical smog, is formed in the atmosphere rather than being directly emitted from pollutant sources. Ozone forms as a result of volatile organic compounds (VOCs) and oxides of nitrogen (NO_X) reacting in the presence of sunlight in the atmosphere. Ozone levels are highest in warm-weather months, May through October. VOCs and NO_X are termed "ozone precursors" and their emissions are regulated in order to control the creation of ozone in the atmosphere.

Ozone damages lung tissue and reduces lung function. Scientific evidence indicates that ambient levels of ozone not only affect people with impaired respiratory systems (e.g., asthmatics), but also healthy children and adults. Ozone can cause health effects such as chest discomfort, coughing, nausea, respiratory tract and eye irritation, and decreased pulmonary functions.

11.2.2 Carbon Monoxide (CO)

Carbon monoxide is an odorless, colorless gas that is highly toxic. It is formed by the incomplete combustion of fuels. The primary sources of this pollutant in Los Angeles County are automobiles and other ground-based vehicles. The health effects associated with exposure to carbon monoxide are related to its interaction with hemoglobin once it enters the bloodstream. At high concentrations, carbon monoxide reduces the amount of oxygen in the blood, causing heart difficulties in people with chronic diseases, reduced lung capacity, and impaired mental abilities.

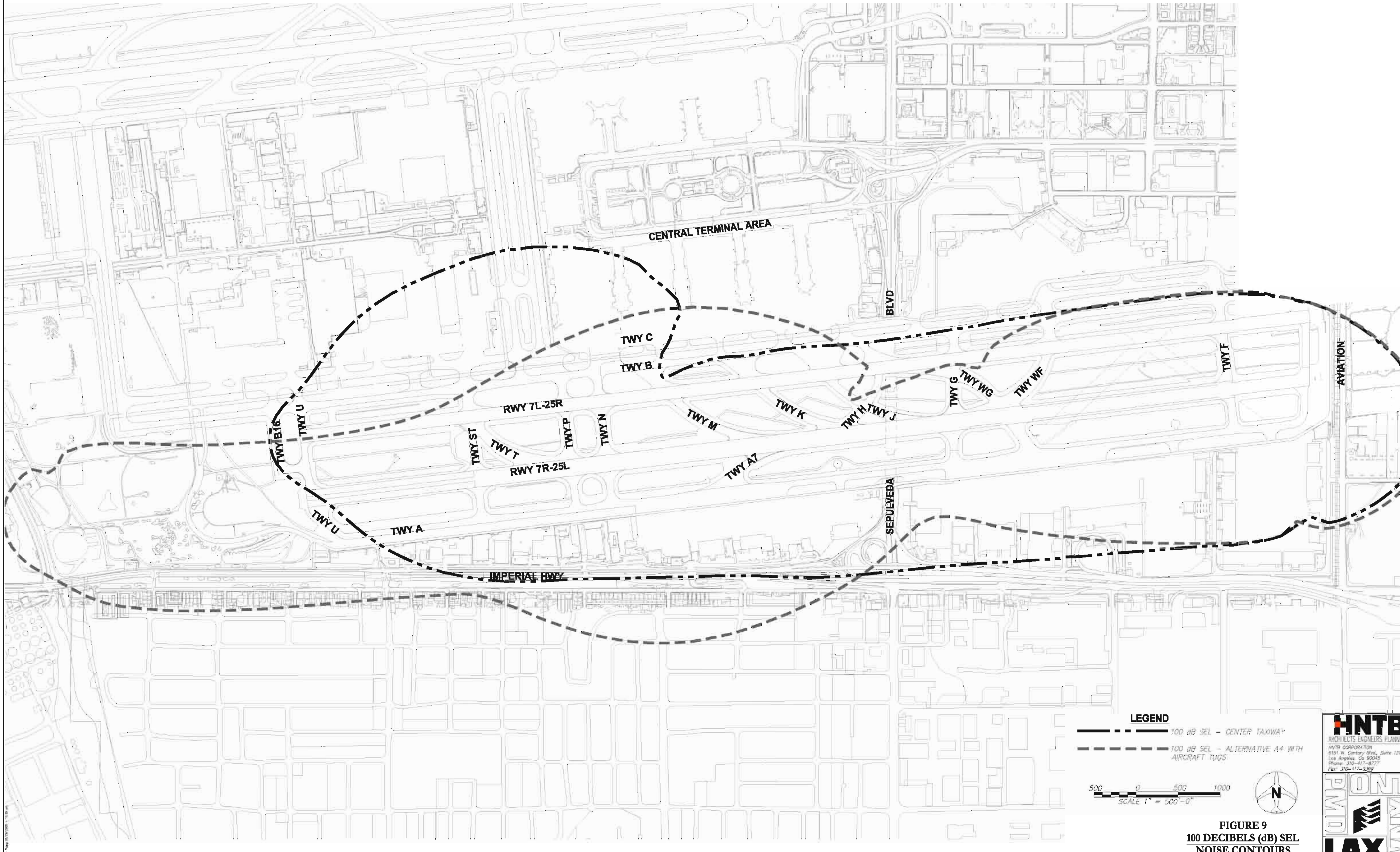


FIGURE 9
100 DECIBELS (dB) SEL
NOISE CONTOURS

11.2.3 Particulate Matter (PM_{10})

Particulate matter consists of solid and liquid particles of dust, soot, aerosols, and other matter small enough to remain suspended in the air for a long period of time. PM_{10} refers to particulate matter with an aerodynamic diameter $\leq$ 10 micrometers and represents that portion of particulate matter thought to represent the greatest hazard to public health. PM_{10} can accumulate in the respiratory system and is associated with a variety of negative health effects. Exposure to particulates can aggravate existing respiratory conditions, increase respiratory symptoms and disease, decrease long-term lung function, and possibly cause premature death. The segments of the population which are most sensitive to the negative effects of particulate matter in the air are the elderly individuals with cardiopulmonary disease and children. Aside from physical negative effects, particulate matter in the air causes a reduction of visibility and damage to paints and building materials.

A portion of the particulate matter in the air comes from natural sources such as windblown dust and pollen. Man-made sources of particulate matter include combustion of materials, automobiles, field burning, factories, vehicle movement or other man-made disturbances of unpaved areas, and photochemical reactions in the atmosphere. Secondary formation of particulate matter may occur in some cases where gases, such as sulfur oxides (SO_X) and nitrogen oxides (NO_X), interact with other compounds in the air to form particulate matter. Fugitive dust generated by construction activities is a major source of suspended particulate matter.

The secondary creators of particulate matter, SO_X and NO_X are also major precursors to acidic deposition (acid rain). While SO_X is a major precursor to particulate matter formation, NO_X has other environmental effects. NO_X has the potential to change the composition of some species of vegetation in wetland and terrestrial systems, to create the acidification of freshwater bodies, impair the aquatic visibility, create eutrophication of estuarine and coastal waters, and increase the levels of toxins harmful to aquatic life.

11.2.4 Nitrogen Dioxide (NO_2)

Nitrogen dioxide (NO_2) is a poisonous, reddish-brown to dark-brown gas with an irritating odor. NO_2 forms when nitric oxide (NO) reacts with atmospheric oxygen (O2) and O3. Most sources of O2 are man-made sources; the primary source of NO_2 is high-temperature combustion. Significant sources of NO_2 at airports are boilers, aircraft operations, and vehicle movements. NO_2 emissions from these sources are highest during high-temperature combustion, such as aircraft take-off mode.

NO_2 may produce adverse health effects, such as nose and throat irritations, coughing, choking, headaches, nausea, stomach or chest pains, and lung inflammations (e.g., bronchitis, pneumonia).

11.2.5 Sulfur Dioxide (SO_2)

Sulfur dioxide is formed when fuel containing sulfur (typically, coal and oil) is burned, during the metal smelting process, and during other industrial processes. Large SO_2 concentrations are found in the vicinity of large industrial facilities. The physical effects of SO_2 include temporary breathing impairment, respiratory illness, and aggravation of existing cardiovascular disease. Children and the elderly are most susceptible to the negative effects of exposure to SO_2.

11.2.6 Toxic Air Contaminants (TAC)

TACs are often referred to as "non-criteria" air contaminants because ambient air quality standards have not been established for them. There are hundreds of air toxics, and exposure to these pollutants can cause or contribute to cancer or non-cancer health effects, such as birth defects, genetic damage, and other adverse health effects. Effects may be both chronic (i.e., of long duration) or acute (i.e., severe but of short duration) on human health. Acute health effects are attributable to sudden exposure to high quantities of air toxics. These effects include nausea, skin irritation, respiratory illness, and, in some cases, death. Chronic health effects result from low-dose, long-term exposure of routine releases of air toxics. The effect of major concern for this type of exposure is cancer, which typically requires a latency period of 10 to 30 years after exposure to develop.

A qualitative analysis of potential air toxics was conducted, based on source-specific California Air Resources Board (CARB) TAC speciation profiles. The TAC speciation profile for aircraft is based on volatile organic compounds (VOCs), and the TAC speciation profile for GSE is based on diesel exhaust (also referred to as diesel particulate matter [DPM]). Since the aircraft fleet mix will not change in either of the two designs, the relative change in emissions of VOC and DPM can be used as an indicator of TAC emissions for comparison between the two designs.

11.3 Scope of Air Quality Analysis

The air quality analysis compares the potential air quality impacts of the end-around taxiway with tugs design and the center taxiway design. The primary steps involved in performing the analysis are listed below:

- Identify Airport-related emissions sources for each design.
- Develop emissions inventories for each design for Year 2005.
- Conduct dispersion modeling for each design.
- Estimate future background concentrations.
- Compare emissions inventories and pollutant concentrations for each design.
- Perform qualitative assessment of TAC.

11.4 Methodology

In cooperation with the United States Environmental Protection Agency (USEPA), the FAA developed the Emissions Dispersion Modeling System (EDMS) for the application of assessing air emissions from airport facilities. This model is also designated by the USEPA as a "Preferred Model" and identified by the FAA as the "required" model for aviation-related air quality assessments. EDMS is based on extensive FAA research and ongoing coordination with the USEPA to help ensure the proper characterization of airport-related sources of air emissions, which can be modified by the user to help simulate the unique operational and design elements of individual airports.

The primary applications of the model are: (1) generating an inventory of emissions caused by sources on and around an airport; and (2) calculating pollutant concentrations in the surrounding environment. However, EDMS does not currently include PM_{10} emission factors for aircraft. The criteria pollutant emission inventory and dispersion modeling for each of the two designs was developed and conducted using the FAA's EDMS, Version 4.11 with AERMOD, which is the same version used for the Final Master Plan EIR/EIS. A more recent version, EDMS Version 4.12, provides improvements to the user interface of the model, but does not substantially change emission estimates or dispersion.

11.5 Emissions Inventory

The Airport-related emissions inventory was developed using emission factors from the following sources:

- U.S. FAA/USAF, Air Quality Procedures for Civilian Airports and Air Force Bases, 1997
- U.S. FAA/USAF, EDMS Version 4.11, 2002.
- U.S. EPA, Compilation of Air Pollutant Emission Factors (AP-42), 1999.
- CARB, EMFAC2002 On-Road Emissions Inventory Estimation Model (EMFAC2002), 2004.
- SCAQMD, CEQA Air Quality Handbook, 1993.

Airport-related emission sources characterized for this assessment include the following sources: (1) aircraft; (2) GSE and APU; (3) ground access vehicles (associated with movements on Airport roadways and in parking lots); and (4) stationary sources, such as power plants, fuel tanks, maintenance and surface coating facilities, and miscellaneous sources. As discussed above, neither of the two designs would change the activity levels of any of these sources, with the exception of aircraft tugs, APUs, and aircraft taxi time. As such, the 2005 (No Action/No Project) EDMS modeling scenario provided in the Final LAX Master Plan EIR was used in this analysis and adjusted to account for changes in the two designs.

11.5.1 Aircraft

Important parameters to characterize aircraft activity levels include the number of landing and take-off (LTO) cycles, the aircraft fleet mix (types of aircraft used), and the length of time aircraft spend taxiing and idling on the ground. Emissions associated with individual aircraft operations are a function of the aircraft operating mode (i.e., taxi/idle, takeoff, climb-out.), and are estimated using emission factors associated with particular engine types and operating modes. Aircraft activity levels used to model each design incorporates aircraft activity forecasts from the 2005 No Action/No Project alternative EDMS 4.11 data files prepared for the Final LAX Master Plan EIR. Changes in taxi times, taxi delays, and queue times for each runway were supplemented by simulation modeling runs provided by ATAC Corporation. EDMS 4.11 does not contain aircraft emission indices for PM_{10}. The PM_{10} emission indices used in this analysis are consistent with the emission indices developed for the Final LAX Master Plan EIR and the Draft General Conformity Evaluation.

11.5.2 Ground Support Equipment and Auxiliary Power Units

GSE includes a wide range of vehicles that are used to service aircraft. Examples of GSE include tugs that haul baggage carts and other equipment, fuel trucks, catering trucks and other service vehicles, and APUs and ground power units (GPUs) that provide electrical power to aircraft when they are parked and the engines are not running. The EDMS database includes default GSE assignments for each aircraft type expressed in terms of total operating times by specific type of GSE per LTO cycle. With the exception of aircraft tugs and APU usage for the End-Around Taxi with tugs design, GSE assignments and usage were considered consistent with activity forecasts from the 2005 No Action/No Project alternative EDMS 4.11 data files prepared for the Final LAX Master Plan EIR. Usage of aircraft tugs and APUs for the End-Around Taxi with tugs design was provided by ATAC Corporation.

11.5.3 Ground Access Vehicles

Vehicles traveling on CTA roadway links were considered in the analysis, including privately owned vehicles, government-owned vehicles, and commercially owned vehicles such as rental cars, shuttles, buses, taxicabs, and trucks. Emissions from ground access vehicles on Airport roadways were calculated using EDMS 4.11. Vehicle emissions were estimated using emission factors from CARB's motor vehicle emission factor model, EMFAC2002. As no changes in use of ground access vehicles would result under either designs, vehicle trip distances, idle times, average travel speeds, and hot versus cold starts were calculated in a manner consistent with the methodology outlined in the Final LAX Master Plan EIR.

11.5.4 Stationary Sources

Stationary sources include fixed combustion equipment, coating and solvent activities, organic liquid storage and transfer activities, and miscellaneous activities around the Airport. The equipment capacities, typical operating hours, existing control equipment, and emissions data were based on data obtained from a survey of LAWA tenant facilities conducted in 1997 and 1998 for the LAX Master Plan. As no changes in use of stationary sources would result under either design, stationary source emissions were considered consistent with forecasts from the 2005 No Action/No Project alternative EDMS 4.11 data files prepared for the Final LAX Master Plan EIR.

11.6 Air Dispersion Modeling

Air dispersion modeling was used to predict pollutant concentrations in the vicinity of the Airport from emission sources discussed above. Pollutant concentrations were calculated for PM_{10}, NO_2, CO, and SO_2 for purposes of comparison of the two designs and to the ambient air quality standards. The dispersion modeling analysis is generally based on the methodology used in the Final LAX Master Plan EIR. Details of the modeling approach are included in the Air Quality Modeling Protocol for Criteria Pollutants (see Technical Report 4, Air Quality Technical Report) of the Final LAX Master Plan EIR.

EDMS is designated by the USEPA as a "Preferred Model" and identified by the FAA as the "required" model for aviation-related air quality assessments. Dispersion modeling using EDMS is significantly more complex in scope and in data input requirements than emissions inventory modeling. Requirements include: (1) specifying coordinates for sources of emissions; (2) assigning aircraft to runways, runway queues, taxiways, and gate areas; (3) developing appropriate operational profiles for mobile sources; (4) developing representative hourly meteorological conditions; and (5) defining other source-specific parameters for each emissions source included in the dispersion analysis. The user is also required to define individual receptors or grids of receptors for pollutant concentration estimation. In preparing the dispersion analyses, Airport operations and physical planning data were assembled and documented for 2005 conditions consistent with EDMS input files developed for the Final LAX Master Plan EIR.

EDMS 4.11 generates input files for use with EPA's AERMOD dispersion model and its meteorological preprocessor, AERMET. AERMOD is a steady-state plume model that assumes a Gaussian concentration distribution in both the horizontal and vertical directions in the stable boundary layer. Detailed information about AERMOD is available from user guides and additional information contained on the USEPA's Internet site. Dispersion modeling conducted for this assessment was conducted using EDMS 4.11.

Following standard industry practice, the evaluation of ozone was conducted by evaluating emissions of ozone precursors (i.e., VOC and NO_X). Because ozone is a regional pollutant and ambient concentrations can only be predicted using regional photochemical models that account for all sources of precursors, the dispersion modeling conducted for the design alternatives did not account for ozone.

Consistent with the approach taken in the Final LAX Master Plan EIR, emissions of NO_X were used to determine NO_2 impacts. NO_X emissions were simulated in the air quality dispersion model, and the NO_2 conversion rate was treated by an NO_2-to-NO_X ratio, which is a function of downwind distance. The assumed NO_2-to-NO_X ratios between those distances are presented in **Figure 10**. The NO_2 conversion rates are recommended in the SCAQMD Localized Significance Threshold Methodology Guidance, June 2003.

11.6.1 Meteorological Data

Airport-specific meteorological data were used in the dispersion analysis conducted for both designs. AERMET, the meteorological preprocessing program for AERMOD was used to develop the appropriate meteorological dataset. Consistent with the air quality analyses conducted for the Final LAX Master Plan EIR and the Draft General Conformity Determination, a weather dataset was developed for calendar year 1996. Hourly surface observation data collected by the SCAQMD at LAX were used in the analysis. Missing surface data were supplemented with data obtained from the National Weather Service (NWS) for the period between March 1, 1996, and February 28, 1997. Twice-daily upper air sounding data used in the AERMOD analysis were obtained from the San Diego Miramar Weather Service Contract Meteorological Observatory (WSCMO), which is the closest WSCMO to the Airport with available upper air sounding data.

11.6.2 Source and Receptor Locations

As discussed above, locations for Airport-related mobile and stationary emissions sources were determined from a review of Airport layouts and LAX Master Plan documents. Sources of Airport

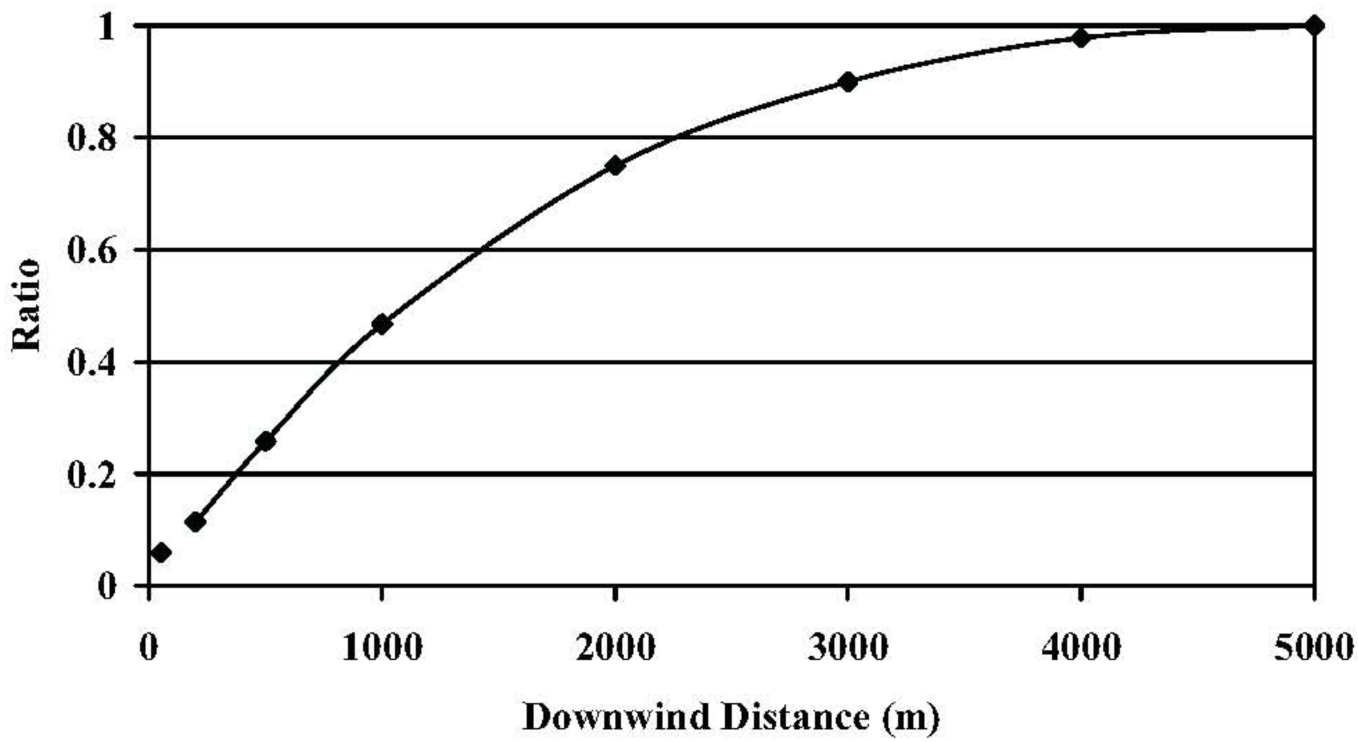


Figure 10: NO2-to-NOx Ratio as a
Function of Downwind Distance

emissions for the end-around taxiway with tugs design and the center taxiway design are depicted in **Figure 11** and **Figure 12**. Locations for sources related to the end-around taxiway with tugs design were developed using diagrams developed by HNTB. As shown in Figure 12, the end-around taxiway with tugs design was modeled as a roadway with adjustments to the emission factors to account for aircraft tugs.

Receptor points represent the geographic location where AERMOD calculates air pollutant concentrations. The height of all receptors was set to 1.8 meters above ground level (EDMS default), the approximate breathing height of adults standing on the ground. For purposes of this analysis, discrete receptors were placed along the southern boundary of the Airport.

11.6.3 Future Background Concentrations

The modeling conducted for this assessment accounts for future (2005) concentrations of pollutants due to Airport-related activities. Other pollutant sources in the area that contribute to total pollutant concentration levels were also estimated. Future background concentrations were calculated using existing ambient air quality measurement data

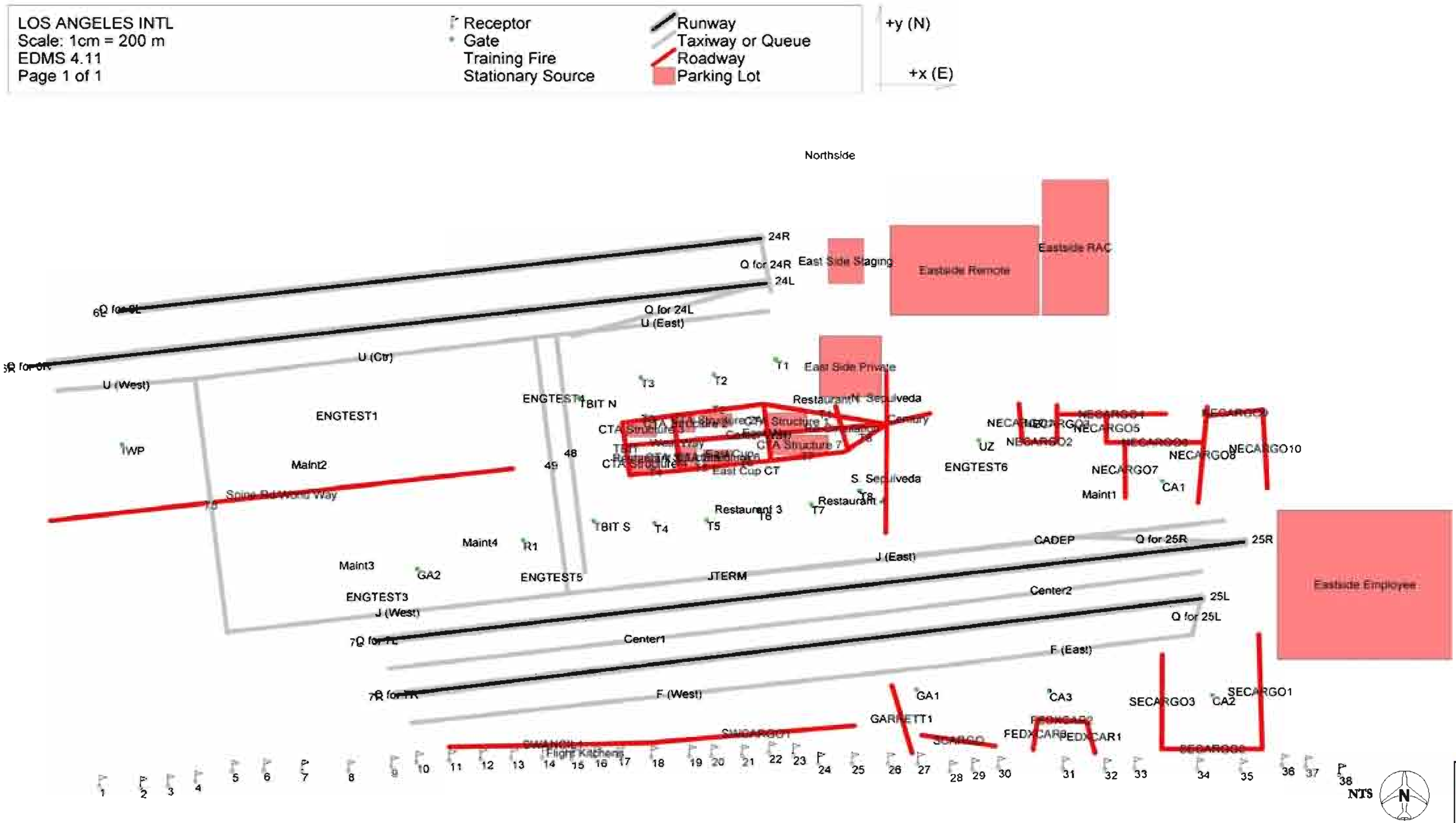
Consistent with the approach taken in the Final LAX Master Plan EIS/EIR and the Draft General Conformity Determination, future background concentrations of CO, NO_2, and SO_2 were estimated using the linear rollback method identified in the 1997 Air Quality Management Plan (AQMP). The linear rollback method assumes that changes in emissions inventories would change the ambient concentrations proportionally. The future background concentration of PM_{10} at the Airport was estimated by multiplying year 2000 PM_{10} concentrations at the Airport by the ratio of future (2005) concentrations for Downtown Los Angeles (the nearest station for which future PM_{10} concentrations have been estimated) to year 2000 concentrations for Downtown Los Angeles.

Future background concentrations were estimated using ambient air quality measurement data and hence include the current contribution of emissions from airport-related sources. The methodologies described above, therefore, are conservative since Airport sources are implicitly included in the calculated future background concentrations.

11.7 Potential Air Quality Impacts

11.7.1 Emissions Inventory

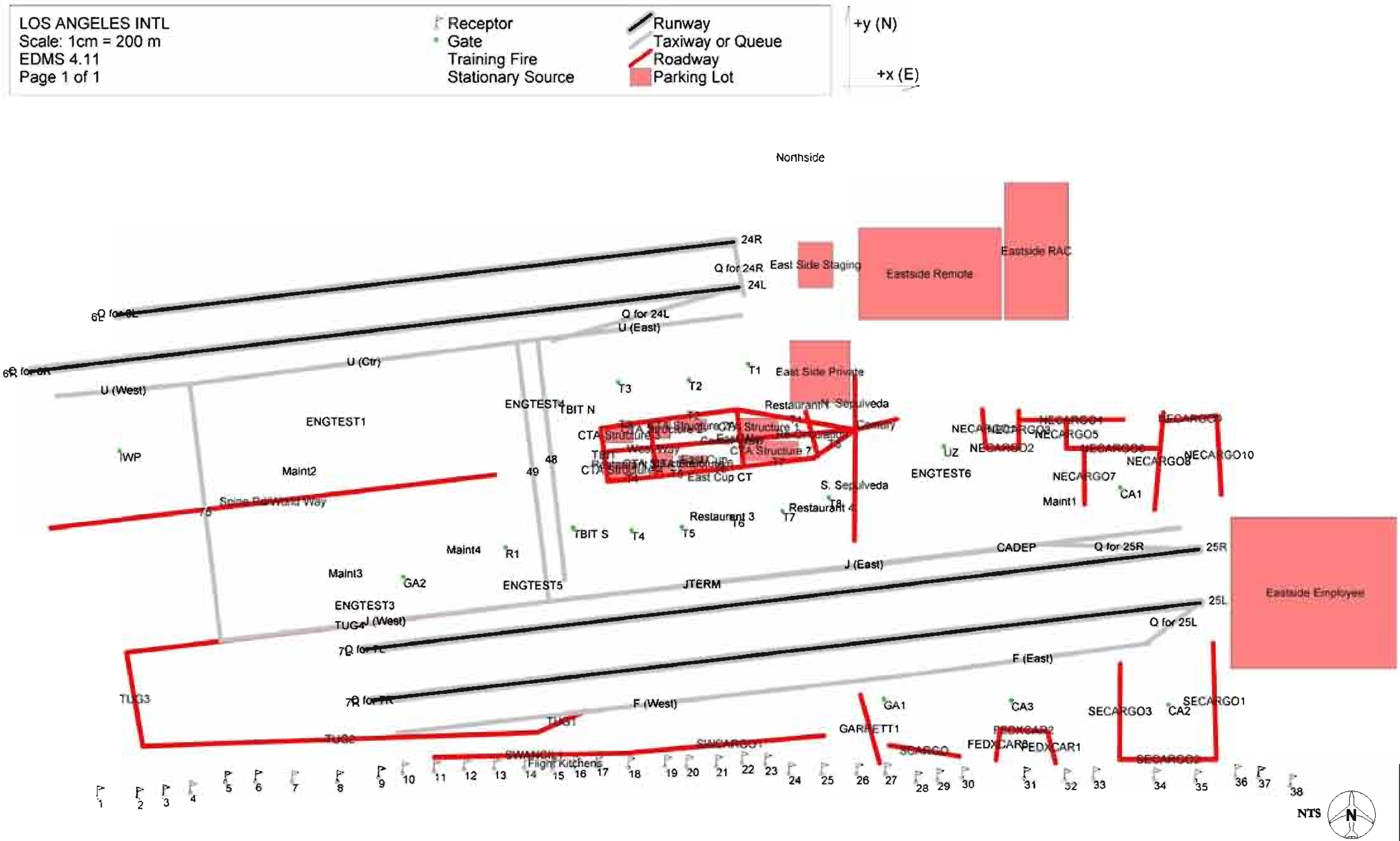
The emission inventories for both designs are provided in **Table 4**. As shown in the table, CO, VOC, and SO_X emissions decrease with implementation of the end-around taxiway with tugs design in comparison to the center taxiway design. However, NO_X and PM_{10} emissions increase with implementation of the suggested modification. The differences in emissions are a function of the changes in combustion sources (i.e., jet fuel vs. diesel) and the changes in aircraft taxi and queue time. While the overall taxi time for the end-around taxiway with tugs design increases, much of this increased time is spent during the tugging of the aircraft, when the aircraft tug and the APU from the aircraft are in operation.



Draft Deliberative Material for Discussion Purposes Only

HNTB ARCHITECTS ENGINEERS PLANNERS

FIGURE 11
REPRESENTATION OF THE CENTER TAXIWAY



Draft Deliberative Material for
Discussion Purposes Only

FIGURE 12
REPRESENTATION OF THE END AROUND TAXIWAY ALTERNATIVE

HNTB
ARCHITECTS ENGINEERS PLANNERS

PMD
ONT
VNY
LAX

The South Coast Air Basin (Air Basin) is in attainment for all National Ambient Air Quality Standards (NAAQS), except for PM_{10} and ozone. The center taxiway design results in less PM_{10}, and ozone precursors (combined quantities of NO_X and VOC), as well as a decrease in CO and SO_X. Notably, these latter two pollutants are both in attainment with the NAAQS and result in a 2 percent reduction in LAX emissions.

TABLE 4
Comparison of Emission Inventories for the End-Around Taxiway with Tugs and Center Taxiway Designs
(tons per year)

	CO		VOC		NO_X		SO_X		PM_{10}	
Source	**Center**	**End-Around**	**Center**	**End-Around**	**Center**	**End-Around**	**Center**	**End-Around**	**Center**	**End-Around**
Aircraft	4,338	4,048	708	658	4,493	4,439	339	326	53	52
GSE/APU	2,799	2,903	192	215	1,327	1,555	19	23	42	55
Stationary	112	112	50	50	198	198	6	6	34	34
Motor Vehicles	3,120	3,120	414	414	406	406	2	2	54	54
Total	**10,419**	**10,183**	**1,364**	**1,337**	**6,425**	**6,599**	**366**	**356**	**183**	**196**
Difference		-236		-27		145		-10		12

Source: PCR Services Corporation, 2005

11.7.2 Dispersion Analysis

The criteria pollutant concentrations for both designs are provided in **Table 5**. As noted in this table, very little difference from a pollutant concentration standpoint would occur between the two different designs. This is largely due to the overall emissions at LAX change from ± 2 to 5 percent as a result of implementation of either design. Similar to the emissions inventory, both NO_2 and PM_{10} concentrations would increase as a result of implementation of the end-around taxiway with tugs design. However, there would be slight decrease in SO_2 and CO pollutant concentrations as a result of implementation of this design.[2] Similar to the air quality analysis conducted for the LAX Master Plan, PM_{10} concentrations are predicted to exceed the PM_{10} CAAQS. As discussed above, the Air Basin is in attainment for all NAAQS, except for PM_{10} and ozone. The center taxiway design results in lower PM_{10} and NO_2 (precursor to ozone) pollutant concentrations, while the end-around taxiway with tugs design results in slightly lower pollutant concentrations of CO and SO_2 both of which are in attainment with the NAAQS.

[2] The EDMS model algorithms are sensitive enough to quantify the change in emissions, but more substantial changes in the emissions inventory are necessary to result in substantial changes in the pollutant concentrations.

TABLE 5 2005 Comparison of Air Pollutant Concentrations (Including Background)					
Pollutant (Conc. Units)	**Averaging Period**	**NAAQS/ CAAQS**	**Center Taxiway**	**End-Around Taxiway with tugs**	**Exceed AAQS**
CO (ppm)	8-hr 1-hr	9 / 9.0 35 / 20	5.2 7.3	5.2 7.0	No No
NO_2 (ppm)	Annual 1-hr	0.053 / n.a n.a / 0.25	0.024 0.173	0.024 0.176	No No
SO_2 (ppm)	Annual 24-hr 3-hr 1-hr	0.030 / n.a 0.14 / 0.4 0.5 / n.a n.a / 0.25	0.002 0.008 0.023 0.040	0.002 0.007 0.020 0.031	No No No No
PM_{10} (μg/m^3)	AAM AGM 24-hr	50 / n.a n.a / 20 150 / 50	28.9 24.9 69.6	29.1 25.1 70.7	No Yes Yes

Source: PCR Services Corporation, 2005

11.7.3 Toxic Air Contaminants (TAC)

As discussed above, VOC and DPM emissions can be used as an indicator of TAC emissions for comparison between the two designs. Based on the emissions inventory, the end-around taxiway with tugs modification would result in an additional 10 tons per year of DPM from the diesel aircraft tugs. DPM has been shown to account for approximately 70 percent of the cancer risk in the Air Basin.[3] As much of the aircraft tug activity would be in close proximity to the City of El Segundo along the end-around taxiway and in the aircraft tug staging area, it is reasonable to conclude that El Segundo's cancer risk would increase with implementation of the end-around taxiway with tugs design.

12.0 COSTS

Preliminary cost estimates for the preferred Full Length Center Taxiway, Alternative B2 were prepared as part of the Final Report. According to the estimates, the center taxiway alternative would cost approximately $252,380,000.

Preliminary comparative cost information for both modified end-around taxiway designs shows that neither one would likely present a cost savings relative to the originally presented end-around taxiway, Alternative A4. It also shows that both would likely result in additional development costs as well as additional operations costs to the airlines as a result of the increased taxi time and delay associated with the end-around taxiway.

The following key components are required to be considered in quantifying the cost estimates:

- Pavement: new runway, taxiway, shoulder pavements and new service road pavements

[3] SCAQMD MATES II, Multiple Air Toxics Exposure Study, March 2000.

- Excavation and Earthwork: cut, fill and removal
- Airfield Painting, Marking and Lighting: painting, striping, signage and lighting modifications on the runways and taxiways.
- Relocation of Existing Airfield Facilities: removal and relocation (including site visits)

12.1 Development Costs

Neither modified end-around taxiway design presents significant opportunity for development cost savings.

The at-grade design would increase development costs due to the fact that additional cut and fill would be required to construct the end-around taxiway with minimal longitudinal grade differential.

The end-around taxiway with tugs design would require the relocation of several existing facilities in addition to the development of an additional high-speed exit from Runway 25L and a newly constructed apron staging area for aircraft to rest prior to being tugged.

In both cases, the modifications to the end-around taxiway alternative presented in this planning study would increase the cost of implementation and/or operation of either design relative to Alternative A4, presented in the Final Report. Further, neither one would improve upon the previously presented end-around taxiway alternative without increase in costs and degradation of overall operational characteristics in terms of taxi time and delay.

12.2 Operational Costs

Neither modified end-around taxiway design presents significant opportunity for operation cost savings.

The end-around taxiway at-grade design would not improve the taxi time and delay findings presented in the Final Report. In all designs, the Final Report found that the end-around taxiway alternative would increase taxi time and delay relative to the center taxiway alternative thus increasing airline operational costs.

Analysis presented in this planning study shows that the end-around taxiway with tugs design would more than double taxi time and delay for Runway 25L arrivals relative to the Full Length Center Taxiway Alternative B2.

Increased taxi time and delay would result in an increase in operational costs to the airlines.

12.3 Other Costs

In addition to the development and operational cost impacts noted above, there are further costs associated with the introduction of tug vehicles in to the aircraft taxi operation.

Implementation of the end-around taxiway with tugs would require that a fleet of modern tug vehicles be purchased exclusively for taxi operations. The vehicles would have further maintenance and repair requirements above and beyond existing vehicles. Integrating tug vehicles into the arrival component of aircraft operations would require that reliability be maintained at airline accepted levels. Sufficient standby vehicles would have to be purchased in the event of a tug malfunction or breakdown.

Further, sufficient additional facilities dedicated to the specialized maintenance of these vehicles would need to be constructed.

Labor costs would increase due to the hiring of both full time driver and maintenance personnel. Further, the operation would require the construction of an additional ramp control tower which would require hiring, training and staffing.

Liability insurance and associated costs would also impact the financial feasibility of the end-around taxiway with tugs design.

This page intentionally left blank.

Appendix C Interim Operations Plan Analysis Existing and Future Runway Operations

This page intentionally left blank.

Los Angeles International Airport

OPERATIONS PLANNING STUDY

INTERIM OPERATIONAL PLAN ANALYSIS
EXISTING AND FUTURE RUNWAY OPERATIONS

Prepared for:

Los Angeles World Airports

Prepared by:

HNTB

January 2005

EXECUTIVE SUMMARY

The phasing of proposed Master Plan improvements at Los Angeles International Airport (LAX) will lead to an approximately five year interim period between construction of south airfield improvements and north airfield improvements. The 55.42-foot southward relocation of Runway 7R-25L will not lead to any procedural changes by FAA for LAX airspace operations. LAX operates in a safe and efficient manner and will continue to do so during and after the proposed modifications to the south airfield. FAA personnel participated in this planning study. Balancing operations between the north and south runway complexes at LAX is a priority for air traffic control at all levels and will remain so, regardless of the proposed airfield modifications. No change in runway utilization is anticipated due to implementation of the proposed south airfield modifications.

1.0 INTRODUCTION

The City of Los Angeles and Los Angeles World Airports (LAWA) are working together to improve LAX. The LAX Master Plan is a multi-year improvement program that will improve airport safety, security and efficiency. The Master Plan scope requires that the improvements be phased over several years. The first phase of work to improve LAX would include reconfiguration of the south airfield complex including relocation of one existing runway and addition of a new taxiway. Existing Runway 25L-7R would be relocated 55.42 feet south of its current location bringing the distance between the centerlines of the two south runways to 800 feet. This separation distance would allow for the construction of a new center taxiway between the two runways. It is anticipated that these improvements could be complete by 2008. The proposed Master Plan scope includes several additional improvements to the airport terminals and other facilities that would be carried out in the years after the south airfield improvements. The final phase of improvements proposed as part of the Master Plan would reconfigure the north airfield facilities including relocation of Runway 6R-24L and construction of a new center taxiway between the reconfigured north runways. The proposed improvements to the north airfield facilities are not anticipated to commence prior to 2013.

The phasing of Master Plan improvements will result in an approximately five year interim period (2008 to 2013) during which the north airfield would remain as it is today while the south airfield would have been reconfigured.

The City of El Segundo, which is located adjacent to the southern boundary of LAX, has expressed concern that, during the interim period, air traffic controllers and pilots would be inclined to favor operating on the reconfigured south runway complex as opposed to the north runway complex. El Segundo is concerned that during the interim period, such preference would result in a corresponding increase in noise and other environmental impacts on the Airport's south complex, to which the community is adjacent.

This planning study addresses El Segundo's concern and confirms that FAA Air Traffic Control (ATC) personnel will continue to operate the regional airspace as they do today placing a priority on balancing operations between the north and south runway complexes.

2.0 PURPOSE AND SCOPE

This planning study evaluates the existing operations rates on the north and south runway complexes at LAX and the anticipated operations rates on the south and north runway complexes during the interim period after reconfiguration of the south runway complex and before reconfiguration of the north complex.

Aviation operations will be generally described in this planning study to detail the basic function of the National Airspace System (NAS), Southern California Airspace, and LAX. In particular, factors that determine how and why the existing airport operations are balanced between the north and south runway complexes will be described.

Lastly, the planning study will explain why the proposed reconfiguration of the south airfield will not impact the existing operational procedures nor impact the existing balance of operations between the north and south runway complexes at LAX.

3.0 FAA CONCENSUS

Preparation of this planning study included interviews with the FAA ATC personnel at the Southern California Center, Southern California TRACON, LAX Air Traffic Control Tower (ATCT) and the Western Pacific Regional Headquarters to confirm understanding of local and regional FAA procedures and priorities.

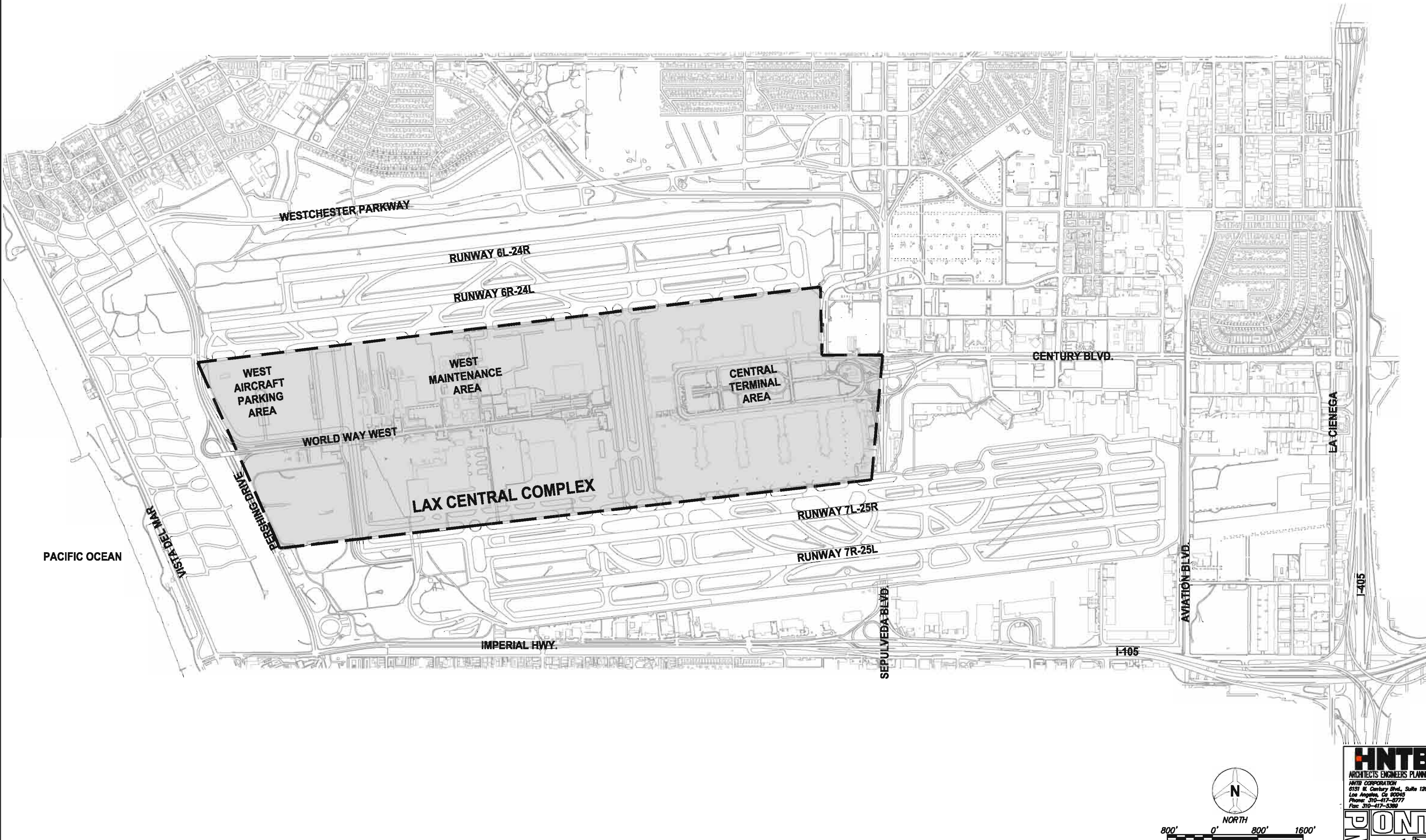
According to the FAA, the relocation of LAX Runway 7R-25L will not result in any procedural changes for routing aircraft to and from LAX. Changes to LAX operations will be limited to ground operations for arriving aircraft on the south runway complex where aircraft will be routed to the newly constructed center parallel taxiway. Maintaining safe and efficient airport operations remain the top priority of ATC personnel.

The current LAX runway layout has been in service since 1970. The ensuing 35 years of operating LAX with the existing runway layout has proven which operations work best to maintain efficiency. Balancing arrivals between the north and south runway complexes has proven to help maximize an efficient and safe flow of aircraft to the airport. Maintaining airfield efficiency and safety is achieved by equal utilization of the LAX runway complexes.

Because LAX operates safely today, and will continue to operate safely in the future, both pilots and ATC personnel are expected to continue favoring balancing operations equally between the south and north runway complexes at LAX.

4.0 OVERVIEW OF THE PROPOSED AIRFIELD IMPROVEMENTS

LAX has four east-west runways arranged in two pairs (**Figure 1**). One pair of runways is located on the south side of the airport while the other pair is located on the north side of the airport. The LAX Central Complex area is located between the two runway pairs and is comprised of the Central Terminal Area (CTA), which includes eight airport terminals, the terminal roadway and parking areas, the west maintenance area, and the west gate aircraft parking area.



Draft Deliberative Material for Discussion Purposes Only

FIGURE 1
AIRPORT LAYOUT

HNTB
ARCHITECTS ENGINEERS PLANNERS
HNTB CORPORATION
6151 W. Century Blvd., Suite 1200
Los Angeles, Ca 90045
Phone: 310-417-8777
Fax: 310-417-5380

ONT PMD LAX VNY

As a general rule, all arriving flights land on the outboard runways while all departing flights take off from the inboard runways. The outboard runways are the southernmost runway in the south airfield and the northernmost runway in the north airfield. The inboard runways are the runways located immediately to the south and north of the LAX Central Complex.

Because the runways typically used for departures (the inboard runways) are between the LAX Central Complex and the runways typically used for arrivals (the outboard runways), aircraft that have just arrived must cross the inboard runways to reach their destinations in the LAX Central Complex. However, arrival and departure operations at LAX occur simultaneously. After landing on one of the outboard runways, pilots are instructed by ATC, to hold (come to a stop) before crossing the inboard runway where aircraft are actively departing. Once there is a gap in the departure queue, the pilot that has just arrived and is waiting to cross the inboard runway is given clearance to cross the inboard runway and taxi to his or her destination in the LAX Central Complex.

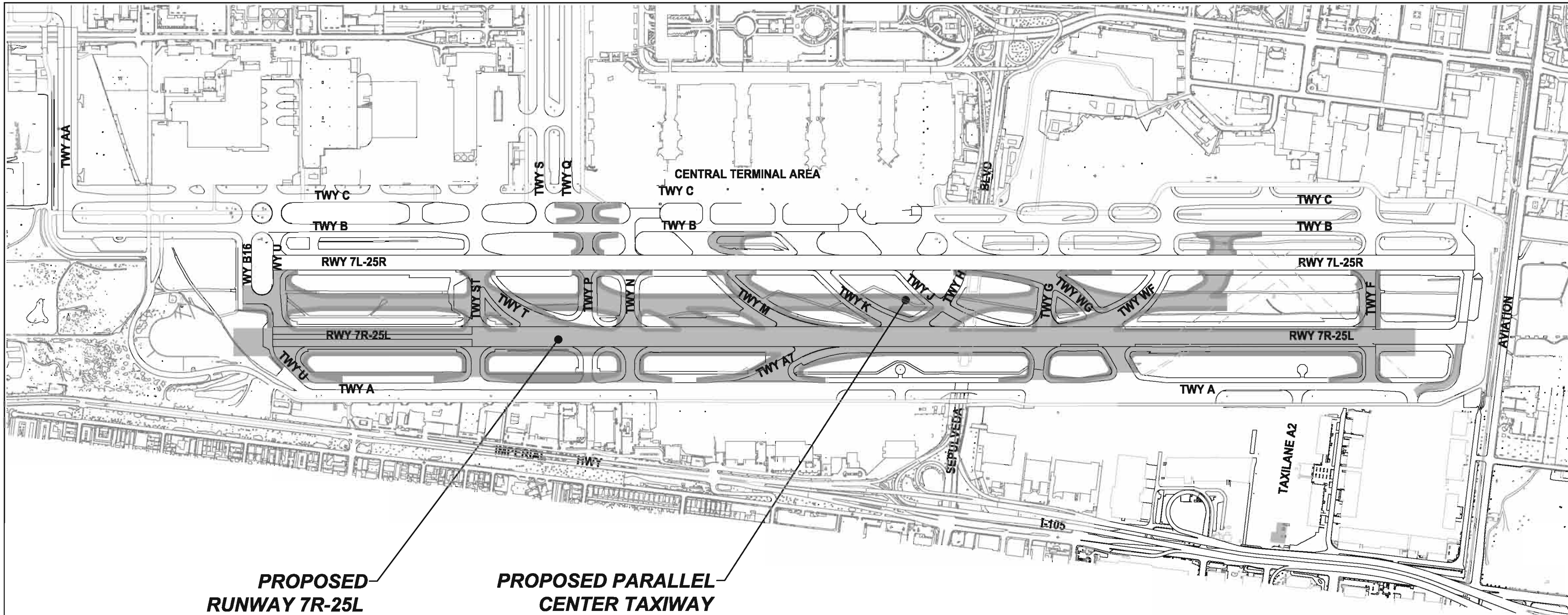
There are three key conflicts associated with the existing configuration of the LAX runways and taxiways.

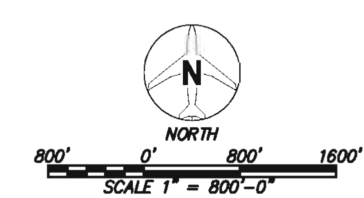
First, though there are several taxiways at LAX that are parallel to the east-west runways providing circulation for aircraft moving about the airfield, none of these taxiways are between either of the runway pairs. This prevents arriving aircraft from taxiing east or west until after they have crossed the inboard runway.

Second, the two runways that comprise the north complex (Runways 6L-24R and 6R-24L) are separated by 700 feet from centerline to centerline. The two runways that comprise the south complex (Runways 7L-25R and 7R-25L) are separated by 745 feet from centerline to centerline. This distance is insufficient for some large aircraft to come to a stop between the outboard and inboard runways without impeding operations on the outboard runway because the height of the aircraft tail penetrates the outboard runway obstacle free zone (an FAA-identified area surrounding a runway that must be clear of all obstructions, including taxiing aircraft).

Lastly, the exit taxiways from the outboard runways lead directly to the neighboring inboard runways. Landing aircraft must exit the runway onto a taxiway that leads directly to the adjacent runway where aircraft are simultaneously departing. This operational characteristic is considered to be the primary cause for LAX's high rate of runway incursions. According to the 2004 FAA Runway Safety Report, LAX led the nation in runway incursions for the years 2000 to 2003. The Report states that "of the 34 runway incursions at LAX, half involved an aircraft that failed to hold short of Runway 25R after landing on Runway 25L. These closely spaced parallel runways handle high numbers of take-offs and landings. Upon exiting the runway, the pilot has only a short distance to stop the aircraft before coming to the other parallel runway" where aircraft are simultaneously departing.

The LAX Mater Plan addresses these conflicts by relocating two existing runways to provide additional separation between the inboard and outboard runways. The additional separation will allow for the construction of two new parallel taxiways; one between the north runways and one between the south runways (**Figure 2**).





Draft Deliberative Material for Discussion Purposes Only

FIGURE 2
PROPOSED SOUTH AIRFIELD LAYOUT

HNTB
ARCHITECTS ENGINEERS PLANNERS
HNTB CORPORATION
6151 W. Century Blvd., Suite 1200
Los Angeles, Ca 90045
Phone: 310-417-8777
Fax: 310-417-5389

ONT PMD LAX VNY

The runway relocations and new center parallel taxiways would provide operational and safety improvements for LAX. Sufficient runway separation would allow all aircraft to hold between the runways without interrupting operations. The additional taxiway would provide arriving aircraft with the ability to taxi east or west prior to crossing the inboard runway. Lastly, the runway and taxiway reconfiguration would eliminate all of the existing high-speed taxiway exits that directly link the arrival and departure runways. In effect, the center parallel taxiway would act as a barrier, requiring pilots to turn prior to crossing the adjacent inboard runway.

The FAA has established minimum recommended separation distances between runways and taxiways for the safe operation of aircraft. For large aircraft, runways and taxiways must be separated by a distance of 400 feet from centerline to centerline. As mentioned earlier in this section, the two runways in the south complex at LAX are separated by a distance of 745 feet. To construct a new taxiway between the two runways and provide the required 400 feet of separation from the taxiway to each of the two runways, the runways must be separated by a total of 800 feet. It is not possible to relocate Runway 7L-25R further north due to the already constrained separations between the runway and the taxiways and other structures to the north. Thus, the Master Plan proposes that the required 800 feet of separation be achieved by relocating Runway 7R-25L 55 feet further south. After Runway 7R-25L is relocated 55 feet south, a new taxiway would be constructed midway between the two south runways. The Runway 7L-25R orientation, width (200 feet), and length (11,096 feet) would not change as a result of the relocation.

The reconfiguration of the south airfield runway and taxiway would occur several years prior to the similar reconfiguration of the north airfield runway and taxiway due to Master Plan project phasing. It is during the resulting interim period that the City of El Segundo has expressed concern that the reconfigured south airfield would be favored by pilots and air traffic controllers over the existing north airfield configuration.

Aviation operations in the United States are complex and strictly controlled. This is especially true at busy airports, such as LAX, and busy airspace, such as that over Southern California. There are detailed rules governing virtually every aspect of how aircraft move in the air and on the ground. In order to maintain safe and efficient operations at LAX, FAA has developed extensive procedural rules regarding flights in and out of LAX. Key among the procedures is maintaining balance between the number of operations in the north and south runway complexes. Maintaining operations balance between the north and south complexes would continue to be prioritized during and after improvements at LAX. In order to understand why these procedures will not change, it is important to understand how LAX works today.

5.0 NATIONAL AIRSPACE SYSTEM (NAS)

Airspace over Los Angeles and all of the United States is under the jurisdiction of the FAA. The FAA was granted by Congress via the Federal Aviation Act of 1958. The FAA established the NAS to protect persons and property on the ground and to establish a safe and efficient airspace environment for civil, commercial, and military aviation. The NAS is defined as the common network of U.S. airspace, including air navigation facilities; airports and landing areas; aeronautical charts and information; associated rules, regulations, and procedures; technical information; personnel; and material. System components shared jointly with the military are also included.

5.1 Airspace Classification:

Airspace is classified as either controlled or uncontrolled. Controlled airspace is supported by ground-to-air communications, navigation aids, and air traffic services. There are three types of controlled airspace in the Los Angeles area (**Figure 3**):

- Class A: Includes all airspace between 18,000 feet mean sea level (MSL) and 60,000 feet MSL.
- Class B: Airspace within approximately 60 miles of LAX.
- Class D: Airspace for airports with ATCTs, such as LAX.

Class B airspace is established at 29 high-density airports in the United States, including LAX, as a means of regulating the heavy air traffic activity in these areas. It is established on the basis of a combination of enplaned passengers and volume of operations.

Class B airspace is designed to regulate the flow of uncontrolled traffic above, around, and below the arrival and departure airspace required for high-performance and passenger-carrying aircraft at major airports. Class B airspace is the most restrictive controlled airspace routinely encountered by pilots operating under visual flight rules (VFR) in an uncontrolled environment.

Aircraft must have special radio and navigation equipment and must obtain an ATC clearance in order to fly through Class B airspace.

The airspace under the jurisdiction of an ATCT is called Class D airspace. The LAX Class D airspace extends approximately five miles from the airport and extends from the airport surface up to an elevation of 3,000 feet MSL. The purpose of Class D airspace is to provide airspace within which an ATCT can control aircraft in and around the immediate vicinity of an airport. Aircraft operating within this area are required to maintain radio communications with ATCT.

5.2 Air Traffic Control

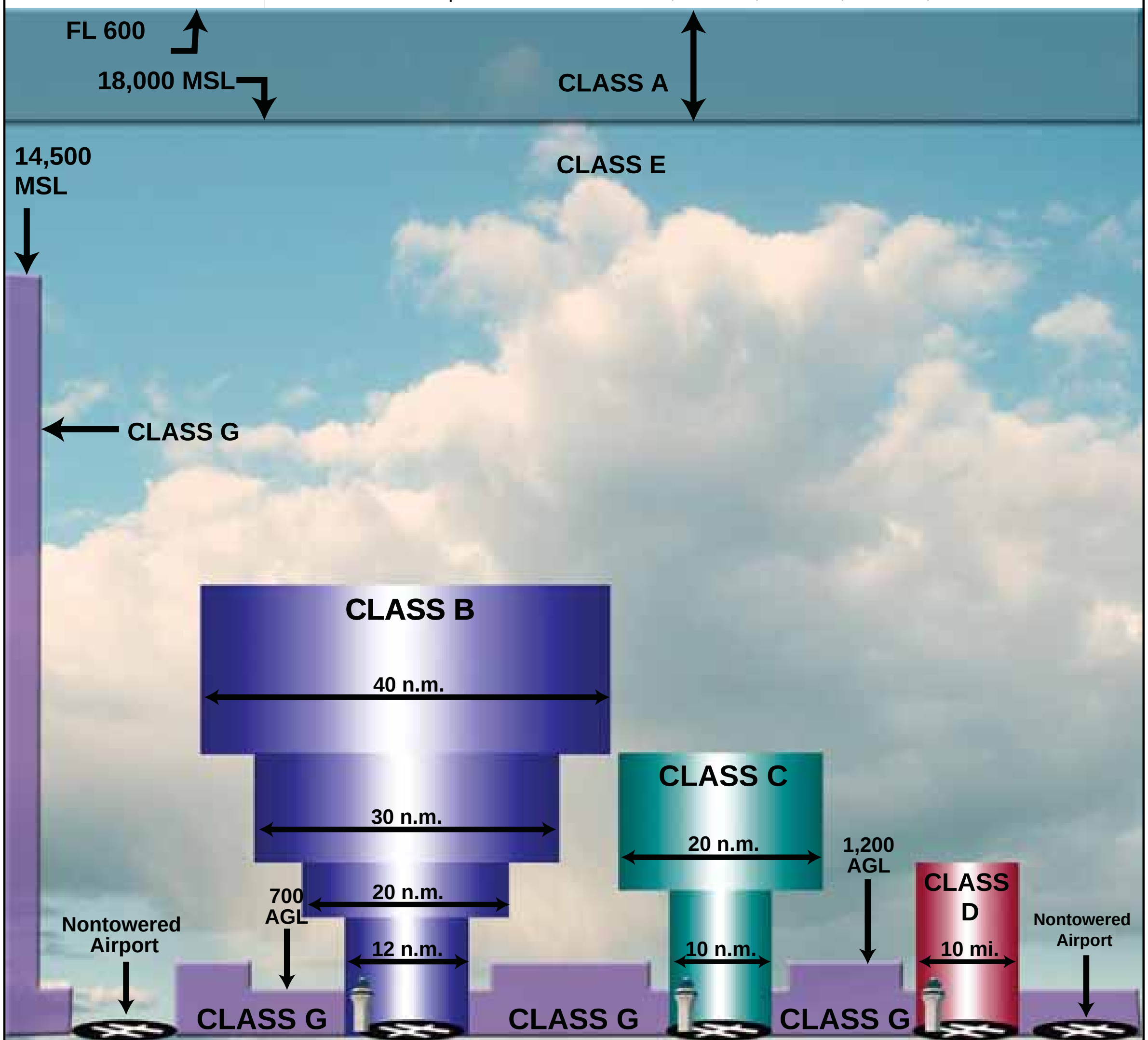
Air traffic is controlled at three primary levels: the Air Route Traffic Control Center (ARTCC or Center), the Terminal Radar Approach Control (TRACON), and ATCT.

The Centers (**Figure 4**) control aircraft operating under instrument flight rules (IFR) within controlled airspace and while in the en route phase of flight. There are 21 ARTCC facilities that are responsible for airspace in the continental United States. Los Angeles falls within the Los Angeles Center, whose jurisdiction includes Southern California and parts of Nevada, Utah, and Arizona.

The next level of air traffic control is provided by TRACON. The Center delegates certain airspace to local terminal facilities, which are responsible for the orderly flow of air traffic arriving and departing the major terminals. The Los Angeles ARTCC has delegated airspace in the Los Angeles Region (The Class B airspace – **Figure 5**) to the Southern California TRACON.

The Southern California TRACON delegates portions of its airspace to local ATCTs. The towers represent the initial level of aircraft control for departures and the final level for arrivals. The LAX ATCT is responsible for all aircraft arriving and departing LAX.

Classification	Definition
CLASS A	Airspace above 18,000 feet MSL up to and including FL 600.
CLASS B	Multi-layered airspace from the surface up to 10,000 feet MSL surrounding the nation's busiest airports.
CLASS C	Airspace from the surface to 4,000 feet AGL surrounding towered airports with service by radar approach control.
CLASS D	Airspace from the surface to 2,500 feet AGL surrounding towered airports.
CLASS E	Controlled airspace that is not Class A, Class B, Class C, or Class D.
CLASS G	Uncontrolled airspace that is not Class A, Class B, Class C, Class D, or Class E.



Legend

AGL - Above Ground Level | **FL** - Flight Level in Hundreds of Feet | **MSL** - Mean Sea Level

HNTB
ARCHITECTS ENGINEERS PLANNERS
HNTB CORPORATION
6151 W. Century Blvd., Suite 1200
Los Angeles, Ca 90045
Phone: 310-417-8777
Fax: 310-417-5369

ONT PMD VNY LAX

FIGURE 3
Airspace Classification

Source: "Airspace Reclassfication & Charting Changes for VFR Products", National Oceanic & Atmospheric Administration, National Ocean Service, Jan. 1993.

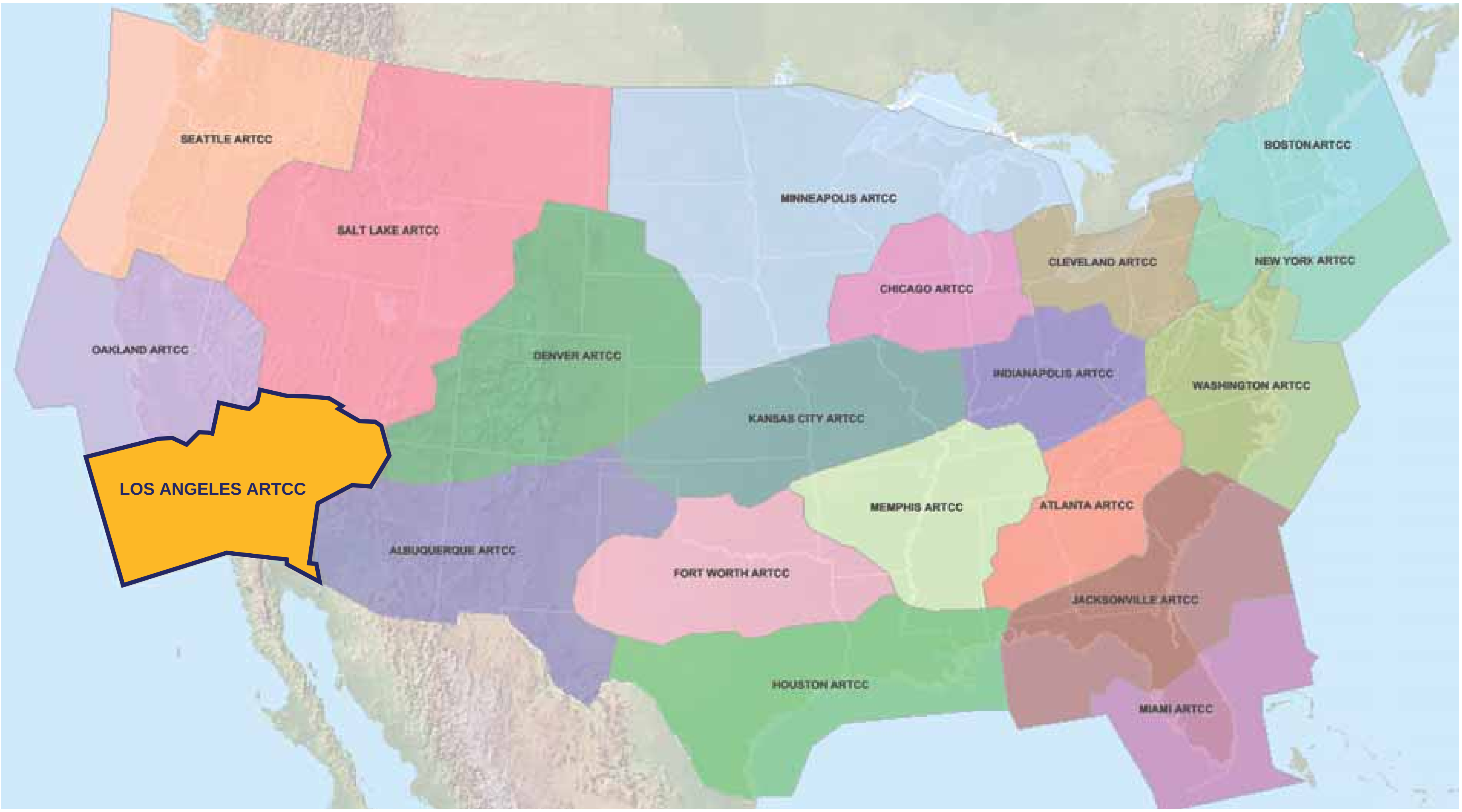


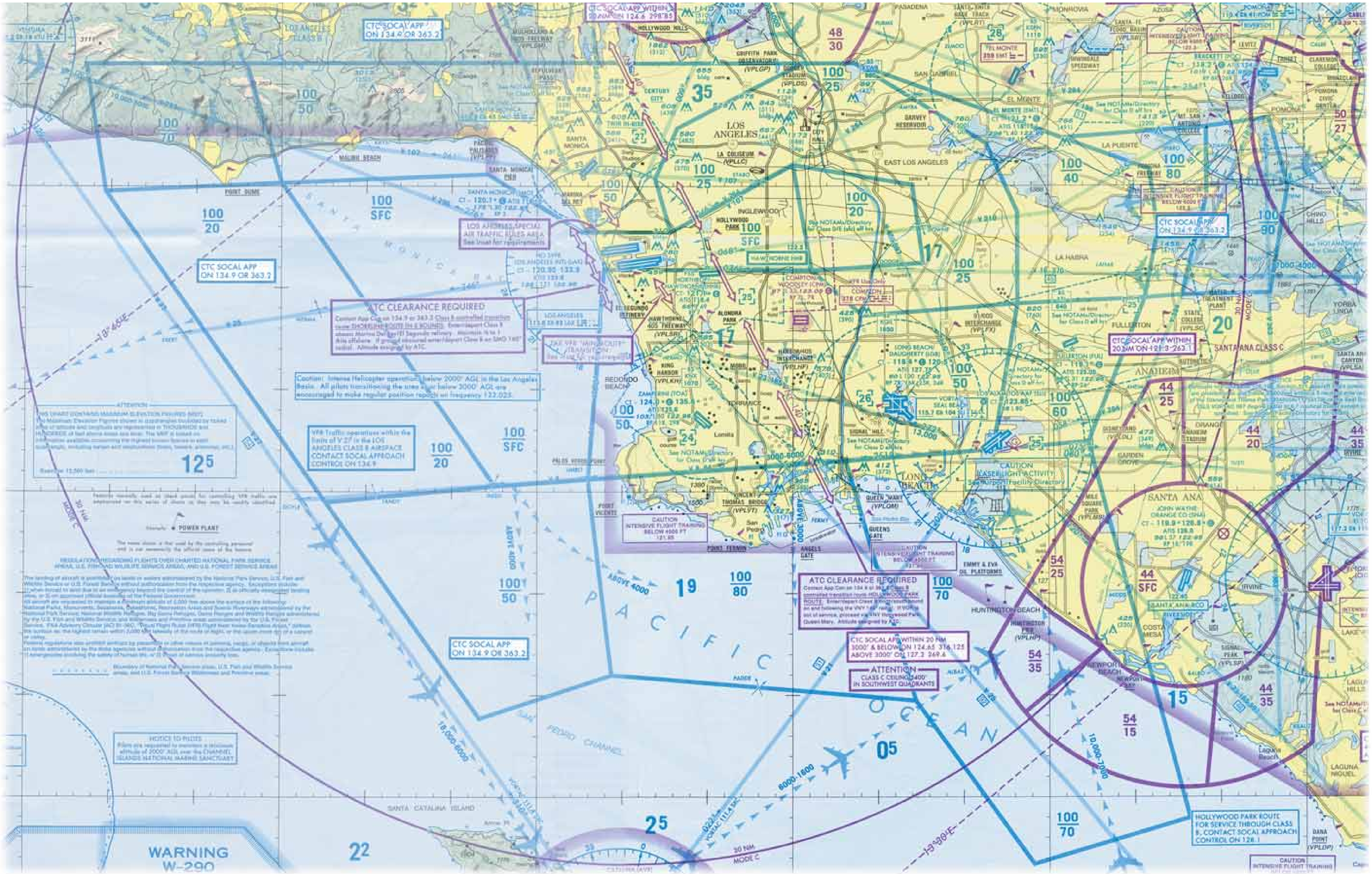
FIGURE 4
Los Angeles Air Route
Traffic Control Center (ARTCC)

Draft Deliberative Material for
Discussion Purposes Only

HNTB
ARCHITECTS ENGINEERS PLANNERS
HNTB CORPORATION
6151 W. Century Blvd., Suite 1200
Los Angeles, Ca 90045
Phone: 310-417-8777
Fax: 310-417-5369

ONT PMD VNY LAX

Source: FAA



Legend

- Class B Airspace
- Class C Airspace
- Class D Airspace
- Class E Airspace

FIGURE 5
Los Angeles
Class B Airspace

Draft Deliberative Material for Discussion Purposes Only

HNTB
ARCHITECTS ENGINEERS PLANNERS

LAX

Source: Los Angeles VFR Terminal Area Chart, 49th Edition, July 8, 2004.

The air traffic controllers will transfer control of each flight they encounter to the next level of control as a flight approaches LAX.

Aircraft traveling to LAX from other regions of the United States will first enter the Los Angeles region under the control of the Los Angeles Center. When the Center prepares to transfer communication with arriving aircraft to the Southern California TRACON, they clear aircraft to approach LAX via a Standard Terminal Arrival Route (STAR). A STAR is a pre-planned arrival procedure published for pilot use. STARs use a combination of established points along the arrival route with altitudes and speeds to route aircraft into a safe and efficient arrival flow sequence. STARs are necessary to maintain an orderly flow of aircraft to the busiest airports, such as LAX.

The Center transfers control of arriving flights to the TRACON as the flight nears the LAX Class B airspace, approximately 60 miles from the airport. The final transfer of air traffic control responsibility is given to the LAX ATCT when an aircraft is on final approach approximately five miles from the airport. Aircraft approaching LAX are cleared to arrive via pre-planned STARs.

The orderly sequence of control over flights in the LAX vicinity helps to maintain a safe and efficient operating environment.

6.0 EXISTING LAX OPERATIONS

As mentioned previously, there are two pairs of runways at LAX. Arrival operations are split almost evenly between the north and south runway complexes. According to the FAA Performance Data Analysis and Reporting System (PDARS) data, during the last quarter of 2004, 48 percent of arrivals occurred on the north runway complex while 52 percent occurred on the south runway complex.

The consistent balance of operations between the north and south runway complexes helps to maintain an orderly flow of aircraft into the LAX terminal area, thereby maintaining safe and efficient operations. The FAA considers the balance of operations between the two runway complexes essential to maintaining safety and efficiency.

Because the arrival traffic is assigned to the two outboard runways there are two streams of arrival traffic. One stream of traffic is associated with each runway. The distance between each flight that is approaching LAX is monitored by ATC so that there is sufficient time for each aircraft to land on the runway, safely slow down and safely exit the runway onto a taxiway. The amount of time it takes for aircraft to touch down on the runway, slow and exit the runway is referred to as “Runway Occupancy Time” (ROT). This period of time, which can vary but is typically about one minute, dictates the in-trail separation between each arriving aircraft and the aircraft behind it. Because it is never possible to have two aircraft on a single runway at the same time, the first aircraft must be completely clear of the runway prior to the pilot in the following aircraft reaching the runway touchdown zone. During the busiest operational periods (when optimal weather is present), ATC maintains in-trail separation of at least 2.5 nautical miles. This distance is sufficient to allow aircraft to land and exit the runway prior to the following aircraft touching down on the runway.

There are multiple variables that are factored into establishment of the in-trail separation distance including wind conditions, weather, visibility and the aircraft type. The aircraft type is critical as some aircraft land at a higher rate of speed than others. As an example, a Boeing 747-400, a large jet that accommodates more than 400 passengers, has an approach speed between 160 and 180 knots. However, an Embrear Brazilia, a small turboprop aircraft with 30 seats, has an approach speed of 120 to 130 knots. Both aircraft types are common at LAX. When a fast aircraft is behind a slow aircraft, the distance between the two must be increased to prevent the faster aircraft from overtaking the slower aircraft. Similarly, during windy conditions or low visibility conditions, in-trail separation is increased as an added measure of safety.

Given that there are two arrival runways at LAX and thus two streams of arriving air traffic with each accommodating, during ideal conditions, a maximum of one arrival per minute, the maximum arrival rate obtainable at LAX would be approximately 120 aircraft per hour. However, the maximum obtainable arrival rates are seldom reached for more than a few minutes at a time. The volume of aircraft arriving LAX is high enough that careful planning and control by ATC is utilized to maximize a safe and efficient stream of air traffic to the airport.

Flights arrive to LAX from all over the world. During the span of one hour, aircraft from 100 different cities may approach LAX. As these flights converge on a single airport, they must be carefully coordinated by ATC into two organized streams of traffic to one of the airport's two arrival runways.

This is one of the coordination responsibilities of the Center. Prior to the air traffic controller at the Center transferring control of a flight to another controller at the TRACON, he or she must guide the approaching aircraft to one of several arrival fixes on the periphery of the Class B airspace, which is controlled by the TRACON. An arrival fix is analogous to a door into the Class B Airspace. There are a limited number of arrival fixes, or doors, for LAX-bound air traffic, which helps to organize the flow of arriving flights into the Class B Airspace (**Figure 6**). Each arrival fix is associated with one of the primary STARs for flights approaching LAX and is assigned to each flight based primarily on what direction the flight is arriving from.

Because each aircraft must cross its assigned fix at the same pre-determined altitude, only one flight is able to cross the fix at a time. This helps to control the number of flights entering the Class B airspace and thus helps to control and organize the volume of flights arriving at LAX.

The arrival runway assignment is made when the air traffic control responsibility is transferred from the Center to the TRACON as the aircraft enters the LAX Class B airspace. Arrival runway assignments are made based primarily on maintaining an efficient flow of aircraft into the LAX terminals.

As would be expected, most aircraft that arrive LAX from the north are assigned to the north arrival runway while most aircraft that arrive LAX from the south are assigned to the south arrival runway. Though there are exceptions, ATC avoids crossing traffic because it is inefficient. Because it is easier to transition air traffic arriving from the east to either the north or south runway complex, these flights are typically assigned to an arrival runway based on maintaining balance in the number of operations to each runway complex.

As mentioned previously, air traffic controllers prioritize safety and efficiency through balancing operations between the north and south runway complexes. In recent years FAA has implemented improvements in the organization of regional airspace to improve ATC ability to balance the operations between the north and south airfields. Aircraft arriving from the east are now afforded more flexibility in landing either the north or south complex simplifying the ability of ATC in balancing the operations.

The organization or aircraft operations of at LAX is based on many factors and is carefully orchestrated to ensure a safe and efficient flow of air traffic to and from the Airport.

As mentioned earlier, the latest FAA PDARS data confirms that the high volume of air traffic into LAX is very closely balanced between the two complexes with each accommodating approximately 50 percent of the operations volume.

6.1 Arrival Stream Organization

The existing procedures for organizing air traffic flow to and from LAX is based on several factors. First and foremost is the location and orientation of the airport. The terminal airspace and its design are centered on guiding aircraft to and from the airport runways. Because the orientation of the runways is east-west, the arrival streams must also be oriented east-west. This prevents aircraft from having to make complicated turning maneuvers just prior to landing. The design, orientation and operation of the air space in Southern California, and particularly the LAX Class B airspace, is almost entirely dependant on the runway orientation at LAX. However, the location of terrain and other obstructions also impacts the design of the regional airspace. There are mountain ranges in Southern California, other airports and also a significant amount of restricted airspace reserved for military air operations.

As noted earlier, the LAX Class B airspace extends to a distance of approximately 60 miles from LAX. The proposed relocation of Runway 7R-25L will move the runway centerline 55.41 feet south of its existing location. The runway length, width and orientation will not change.

7.0 SAFETY AND EFFICIENCY

Safety and efficiency are measured in relative terms. There is no absolute definition of aviation safety or aviation efficiency. However, improvements in safety are sought after in the most efficient possible manner, while improvements in efficiency are made in the safest possible manner.

The existing preferred center taxiway alternative to improve the south airfield at LAX is designed to improve safety relative to the existing airfield by eliminating the high-speed taxiway exits that directly link the arrival runway with the neighboring departure runway.

Improving safety and efficiency simultaneously is not always possible. In the case of LAX, the airfield improvement associated with the Master Plan addresses safety with the most efficient solution relative to the alternative solutions. This concept is critical because the improved south airfield is not likely to operate as efficiently as it does today, though it would operate more efficiently than the alternative concepts, such as the end-around taxiway, for mitigating runway incursions to the greatest practical extent.

The Final Report of the LAX Southside Airfield and New Large Aircraft Studies (the Final Report) provided an analysis of the operational efficiencies of the various alternatives relative to the existing south airfield. Chapter 13, Evaluation of Options, presented modeling results for ground travel and taxi delay time for each of the three preferred alternatives and the existing airfield in both 2002 and 2012.

TABLE 1
Annual Average Taxi Time, in Minutes, for All Aircraft

Alternative	2002	2012
	Time in Minutes	
Existing Airfield	7.25	8.11
Center Taxiway	7.63	8.44

Table 1 presents the annual average taxi time for all aircraft as presented in the Final Report of the Southside Airfield and New Large Aircraft (NLA) Studies. In both 2002 and 2012 there is a slight increase in the taxi time for the improved south airfield relative to the existing airfield. The difference is modest and is considered reasonable due to the anticipated safety improvements associated with implementation of the center taxiway.

TABLE 2
Annual Average Taxi Delay, in Minutes, for All Aircraft

Alternative	2002	2012
	Time in Minutes	
Existing Airfield	0.74	1.57
Center Taxiway	0.78	1.54

Table 2 presents the annual average taxi delay for all aircraft as presented in the Final Report of the Southside Airfield and NLA Studies. In both 2002 there is a slight increase in the taxi delay for the improved south airfield relative to the existing airfield. The difference is modest and is considered reasonable due to the anticipated safety improvements associated with implementation of the center taxiway.

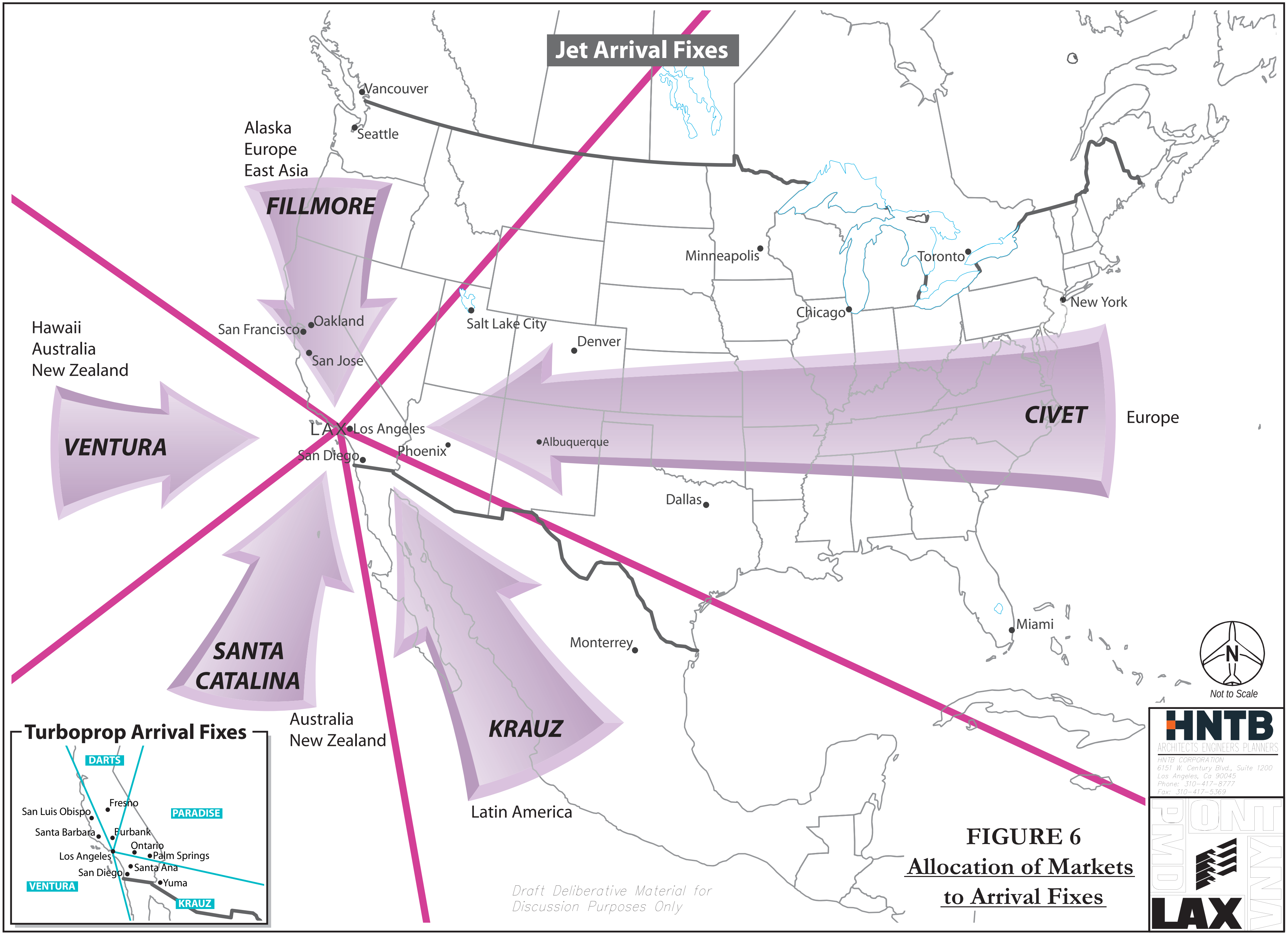


FIGURE 6
Allocation of Markets
to Arrival Fixes

Source: SoCal TRACON, Official Airline Guide, Feb. 1995

Appendix D Sensitivity Assessments For The South Airfield Improvement Project EIR

D.1 Introduction

This technical appendix provides the results of various sensitivity assessments conducted for the South Airfield Improvement Project (SAIP) EIR. The purpose of these assessments was to determine whether the results of the analyses in the EIR and any conclusions regarding the potential for significant impacts resulting from the SAIP would be affected by a shift in the peak construction period from 2005 to 2006, the use of newly released versions of air pollutant models, or revised locations of non-SAIP project construction staging areas.

The methodologies employed and the results of the following assessments are provided in this technical appendix:

- A Master Plan forecast analysis for the numbers of aircraft operations and passengers for 2006.
- Operations-related sensitivity assessments reflecting conditions if the peak construction period were to occur during 2006 rather than 2005. The impact categories addressed off-airport surface transportation, air quality, human health risks, and noise[1]. The assessment for air quality includes a discussion of whether the assumptions used for the SAIP construction analysis have any effect on the General Conformity Determination for the LAX Master Plan using either 2005 or 2006 construction level operations and passengers.
- A sensitivity assessment of the off-airport surface transportation analysis to reflect new assumptions based upon revisions to the locations of non-project staging areas.
- A sensitivity assessment of cumulative surface traffic impacts.
- A sensitivity assessment of air pollutant emissions calculated using the Emissions and Dispersion Modeling System (EDMS) Version 4.21 compared with Version 4.11. This assessment was performed for both 2005 and 2006.

D.2 Master Plan Forecast for 2006

In order to conduct the operations-related sensitivity assessments for the impact categories of off-airport surface transportation, air quality, human health risks, and noise, it was necessary to establish the forecast aircraft operations and passenger activity for 2006. Construction activity that would occur during the peak construction period would be of the same magnitude and type, regardless of whether the peak construction period was in 2005 or 2006. Therefore, the primary source of potential differences in impacts for these four categories would be the difference in operations-

[1] Two other impact areas are addressed in detail in the SAIP EIR – hydrology/water quality and biotic communities. The hydrology/water quality analysis in the SAIP EIR addresses the effects of the construction activities and changes in permeability. These assessments would be the same regardless of whether the construction peak period occurred in 2005 or 2006. The effects on biotic communities are from the physical effects of construction activities, which would also be the same regardless of whether the construction peak period occurred in 2005 or 2006. Therefore, sensitivity assessments related to the changes in the peak year of construction were not required for either hydrology/water quality and biotic communities.

related impacts between the two years. The sensitivity assessments reflect the potential effects on environmental impacts associated with forecast 2006 airport activity levels compared with forecast 2005 airport activity levels.

Updated impact analyses would be necessary if activity levels and associated impacts for 2006 varied greatly from forecast activity levels for 2005. The primary components that could cause differences in impacts between 2005 and 2006 would be differences in the numbers of flight operations and passengers between the two years, a change in the types of aircraft operating at the airport, and the time of day that the operations occur.

This section describes the methodology used to establish the assumed airport operations levels for 2006, providing a comparison of the forecast 2006 operational levels with the forecast 2005 operational levels. The operations-related sensitivity assessments reflect the assumption that aviation activity levels used for the SAIP EIR would continue to be based on the aviation demand forecasts published in the LAX Master Plan Final EIR. The LAX Master Plan Final EIR forecasts include “No Action” scenario activity levels for 2005 and 2008. Straight-line interpolation was used to establish “No Action” scenario activity levels for 2006. The resulting 2006 “No Action” scenario activity levels were then reduced to reflect the effects of the constraints associated with the operation of a three-runway airfield during the construction period in the same manner that forecast 2005 “No Action” scenario activity levels had been reduced for the 2005 Alternative D scenario in the Final LAX Master Plan. **Table D-1** presents a summary of historical airport activity, along with forecast 2006 activity levels compared with the forecast 2005 activity levels.

D.2.1 Activity/Airfield Movement Assumptions Summary

Operational assumptions associated with aircraft activity, runway use, and aircraft movement on the airfield for 2005 related to SAIP construction, as outlined in the Final LAX Master Plan Appendix D and E, are assumed to remain the same if the peak construction period were to occur in 2006.

D.2.2 Activity Levels Under the 2006 Constrained “No Action” Scenario

The operational assumptions for the 2005 Alternative D scenario were based on the 2005 constrained “No Action” scenario forecasts included in the LAX Master Plan Final EIR, with the numbers of operations and passengers reduced to reflect the effects of the three-runway airfield on capacity during the SAIP construction period. For the sensitivity assessments, it was necessary to first determine the 2006 constrained “No Action” scenario forecast levels, based on the LAX Master Plan forecasts. The LAX Master Plan documents did not identify specific levels of forecast activity for 2006. However, the LAX Master Plan does provide constrained “No Action” scenario forecast activity levels for 2005 and 2008. Straight-line interpolation was used to estimate constrained “No-Action” scenario aircraft operations, passenger, and cargo volumes for 2006.

D.2.2.1 Operations

As shown in Table D-1, the forecasted “No-Action” scenario constrained operations levels for 2005 and 2008 were 779,500 and 781,000, respectively. Using straight-line interpolation between these two values, an average annual growth rate of 0.06 percent was computed. Using this growth rate, the 2006 constrained “No-Action” scenario operations level was calculated to be approximately 780,000.

Table D-1

Historic and Projected Airport Activity

	Annual Operations		Annual Cargo Volume (Tons)		Annual Passengers		CTA Average Daily Traffic (July)	
Year	Total	Percent Change	Total	Percent Change	Total	Percent Change	Vehicles per Day [1/]	Percent Change
Historical [2/]								
2002	645,424	N/A	1,962,354	N/A	56,223,843	N/A	75,433	N/A
2003	622,378	-3.6%	2,022,076	3.0%	54,982,838	-2.2%	74,047	-1.8%
2004	655,097	5.3%	2,114,861	4.6%	60,698,046	10.4%	78,674	6.2%
Future-Constrained No Action [3/]	Total	Annual Growth Rate	Total	Annual Growth Rate	Total	Annual Growth Rate	Total	Annual Growth Rate
2005	779,500	N/A	2,500,000	N/A	71,206,300	N/A	N/A	N/A
2008	781,000	0.06%	2,500,000	0.00%	73,278,300	0.96%	N/A	N/A
2006	***780,000***	N/A	***2,500,000***	N/A	***71,890,400***	N/A	N/A	N/A
Future-SAIP [3/]	Total	Percent Change	Total	Percent Change	Total	Percent Change	Total	Percent Change
2005[4/]	745,000	N/A	2,500,000	N/A	70,811,200	N/A	95,188	N/A
2006	***745,500***	***0.06%***	***2,500,000***	***0.0%***	***71,491,500***	***0.96%***	***96,103***	***0.96%***
2003 Baseline vs. 2005 SAIP	N/A	19.7%	N/A	23.6%	N/A	28.8%	N/A	28.6%
2003 Baseline vs. 2006 SAIP	N/A	19.8%	N/A	23.6%	N/A	30.0%	N/A	29.8%

Values in bold italics were interpolated based on estimated annual growth factors.

Notes:

1/ Historical (2002 through 2004) Average Daily Traffic (ADT) volumes accessing the Central Terminal Area (CTA) provided by LAWA staff; forecast (2005) ADT based on the assumption that airport-related traffic will increase in proportion with forecast growth in annual passengers.

2/ Historical activity for annual operations, annual cargo volume, and annual passengers is depicted for the 12-month period beginning January 1 and ending December 31 from monthly aviation statistics, www.LAWA.org/lax. ADT volumes obtained from automatic vehicle identification (AVI) system records provided by LAWA.

3/ Future "No Action" annual operations and annual passenger forecast (2005) from Table V-3.32, Draft LAX Master Plan, Chapter V, Volume II, page V-3.184, November 2000. Year 2008 "No Action" Levels assumed to be similar to Alternative D levels. Future Alternative D annual operations and annual passenger forecast (2005) from Table D-1, LAX Master Plan, Appendix D, page D-2, April 2004. Future cargo tonnage for Alternative D assumed to equal 2005 "No Action"/"No Project" volume (Draft Master Plan, Chapter 5 Vol. 2, pg V-3.186). Comparison between 2005 "No Action" to 2005 Alternative D shows a 4.4% reduction in operations and less than 1% reduction in annual passengers. This reduction factors are assumed to be a direct effect of a three runway constraint. The factors are applied to the interpolated 2006 "No Action" values to arrive to 2006 SAIP construction values.

4/ Values utilized for environmental category impact analysis in this Draft EIR.

Source: LAX Master Plan and LAWA, 2004

Prepared by: Ricondo & Associates, Inc.

D.2.2.2 Passengers

Straight-line interpolation was also used to estimate annual passenger levels for 2006. As depicted in Table D-1, the Final LAX Master Plan forecast reflects 71.2 Million Annual Passenger (MAP) and 73.3 MAP levels for 2005 and 2008 constrained "No-Action" alternative, respectively. Using a straight-line interpolation, the average annual growth rate for passengers between these two years is 0.96 percent. Using this growth rate, the 2006 constrained "No-Action" scenario passenger activity level was calculated to be approximately 71.9 MAP.

D.2.2.3 Cargo

The Final LAX Master Plan assumed that cargo tonnage would remain flat between 2005 and 2015 for both "No Action" and Alternative D scenarios. Therefore, the change in SAIP construction years is assumed to have no effect on cargo tonnage levels as long as the available cargo facilities and cargo processing capabilities assumed in the Final LAX Master Plan remain unchanged.

D.2.3 Activity Levels Under the 2006 SAIP Construction Scenario

The activity levels under the 2006 SAIP construction scenario were estimated by reducing the 2006 constrained "No-Action" scenario operations and passenger levels using the same reduction factors that had previously been applied to the 2005 constrained "No-Action" scenario to reach the 2005 Alternative D scenario in the LAX Master Plan Final EIR. Because of the constraints associated with a three-runway airfield compared with the four-runway airfield, the number of annual operations during the construction period was reduced by 4.4 percent, compared with the constrained 2005 "No-Action" four-runway scenario[2]. The annual passenger levels (primarily origin and destination traffic[3]) were assumed to be reduced by less than 1 percent from the 2005 constrained "No-Action" scenario. The same reduction factors were applied to the estimated 2006 constrained "No-Action" scenario annual operations and passenger levels as a means to estimate 2006 forecast levels during SAIP construction. Estimated annual operation and passenger levels for 2006 SAIP construction conditions are provided in Table D-1.

D.2.4 Activity Levels Under the 2005 SAIP Construction Scenario Compared with Activity Levels Under the 2006 SAIP Construction Scenario

Key variables of importance in terms of potential changes in environmental impacts between 2005 SAIP and 2006 SAIP conditions are:

- <u>The change in annual operations between the 2005 SAIP Construction Scenario and 2006 SAIP Construction Scenario:</u> The difference in the number of annual operations is expected to be 500 additional operations under the 2006 construction scenario, compared with 2005 SAIP construction scenario. Based on an average annual day level, the change between the 2005 and 2006 SAIP construction scenarios equates to just over one additional operation per day in 2006 compared with 2005.
- <u>The difference in annual operations between the 2003 Baseline and 2006 SAIP:</u> The number of annual operations for the 2006 SAIP construction scenario is 19.8 percent higher than the

[2] The 4.4 percent reduction factor was calculated from a comparison of the forecast numbers of passengers in the LAX Master Plan 2005 constrained No Action constrained forecast and the 2005 Alternative D forecast. The difference in those two numbers is 4.4 percent.
[3] Origin and destination passengers are those that either begin or end their air travel portion of their trip at Los Angeles International Airport.

number of operations in the 2003 Baseline condition. In comparison, the number of annual operations for the 2005 SAIP construction scenario is 19.7 percent higher than the 2003 Baseline condition. The percentage differences between the numbers of operations for 2005 SAIP and 2006 SAIP construction scenario compared with 2003 Baseline conditions are nearly the same.

- The difference in annual passengers between the 2005 SAIP Construction Scenario and the 2006 SAIP Construction Scenario: The number of annual passengers between 2005 SAIP construction scenario and 2006 SAIP construction scenario conditions increases by less than 1 percent. Because Central Terminal Area (CTA) average daily traffic level changes are proportional to annual passenger levels, aviation-related background traffic levels for the 2006 SAIP construction scenario would also reflect a less than 1 percent increase from the levels used for the analysis of 2005 SAIP construction scenario. However, the study area traffic is also comprised of non-airport activity generated by ambient growth, local area project development, and other LAX construction such as the Tom Bradley International Terminal (TBIT) Improvements and Baggage Screening Project, Terminals 1-8 In-Line Baggage Screening Construction, the Airfield Intersection Improvements - Phase 1, and the Remote Boarding Facilities Modifications projects[4]. To account for these other activities, an across-the-board 2 percent increase in 2005 study area traffic is applied to all traffic volumes to provide a conservative estimate of 2006 conditions for purposes of conducting the sensitivity analyses.
- Aircraft fleet mix and airfield operations: Aircraft fleet mix and hourly distributions would be assumed to remain constant between 2005 SAIP and 2006 SAIP construction scenario conditions, as the constraints on the airfield are identical. Because annual operations levels under both years are similar, the impacts based upon aircraft operational levels, specifically air quality, human health risks, and noise, that were calculated for 2005 SAIP would be expected to be reasonable representations of 2006 SAIP aircraft-related impacts. However, these impacts are considered further in the sensitivity analyses described below.

Based on estimates using the LAX Master Plan forecast values, it is anticipated that the SAIP associated impacts calculated for 2005, and compared with the 2003 Baseline, will prove to be reasonable representations of potential impacts related to air quality, human health risks, and noise, if the peak construction period occurs in 2006, rather than 2005.

D.3 Operations-Related Sensitivity Assessments of the Peak Construction Period Occurring in 2006 Rather than 2005

The following paragraphs summarize the assessments of the effects on operations-related impacts associated with shifting the peak construction period from 2005 to 2006. Separate assessments are provided for off-airport surface transportation, air quality, human health risks, and noise.

D.3.1 Off-Airport Surface Transportation

Three different operations-related sensitivity assessments were conducted related to off-airport

[4] The four projects listed are separate and distinct from the South Airfield Improvement Project addressed in this Draft EIR. The TBIT Improvements and Baggage Screening Project and Terminals 1-8 In-Line Baggage Screening Construction are subject to their own environmental review under CEQA. The Airfield Intersection Improvements – Phase 1 and the Remote Boarding Facilities Modifications projects have been determined by LAWA to be exempt from CEQA analysis, pursuant to Article III of the Los Angeles City CEQA Guidelines. The projects are described in Section 3.5.2 of the Draft EIR.

surface transportation comparing 2005 and 2006 SAIP construction conditions to determine whether any would result in a change in a determination of significance or in the level of significance. The first related to changes in airport-related and non-airport related background traffic. A separate assessment was prepared to assess the operations-related differences associated with revised assumptions regarding the construction staging locations for non-SAIP projects at LAX. A final assessment was prepared to assess the potential effects of cumulative surface traffic conditions associated with non-LAX development projects. As described in the following sections, none of the assessments indicated that changes in significance of impact determinations or level of significance in terms of off-airport surface transportation would result from the peak construction period occurring in 2006 rather than 2005.

D.3.1.1 Vehicular Traffic Volumes for 2006 Compared with 2005

Roadway traffic volumes in the study area are comprised of vehicles generated by airport-related activities (e.g., airline passengers, airport employees, air cargo) and non-airport related background traffic. Traffic volumes for airport-related traffic are anticipated to increase in proportion to increases in aviation activity. As described in Section D.2 and shown in Table D-1, the anticipated increase in aviation activity from 2005 to 2006 is expected to be 0.06 percent for aircraft operations and 0.96 percent for annual passenger volumes. There is no assumed increase in annual cargo volumes. Based on these findings, the anticipated growth in airport-related traffic volumes would be less than 1 percent from 2005 to 2006.

As described in the off-airport surface transportation study included in the SAIP Draft EIR, it is assumed that non-airport background traffic would increase at an annual rate of 2 percent.[5] To provide a conservative assumption for the sensitivity assessment, it was also assumed that traffic comprising the 2005 Adjusted Baseline condition would increase by 2 percent to estimate 2006 background conditions. The Adjusted Baseline condition is comprised of non-airport background traffic plus traffic generated by the construction of non-SAIP LAX projects.

The results of the analysis depicting estimated intersection volume to capacity (v/c) ratios and levels of service (LOS)[6] for the Adjusted Baseline (2006) and SAIP (2006) conditions are shown in **Table D-2**. The changes in v/c ratios calculated by comparing the SAIP condition to the Adjusted Baseline condition shown in the table are used to determine whether the project is anticipated to produce a previously unrecognized significant impact. In accordance with LADOT criteria, a

[5] SAIP Draft EIR, section 4.2.2.3.

[6] The volume to capacity (v/c) ratio is generally the intersection volume divided by the intersection capacity. Level of service (LOS) is a qualitative measure related to the v/c ratio that describes the intersection operating conditions (e.g., delay, queue lengths, congestion). Intersection LOS ranges fomr LOS A (i.e., excellent conditions with little or no vehicle delay) to LOS F (i.e., excessive vehicle delays and queue lengths).

Table D-2

2006 Level of Service Analysis Results (Sensitivity Analysis)

	Intersection	Peak Hour[1/]	Adjusted Baseline (2006)		With Project (2006)		Change in V/C	Significant Impact? [3/]	Conditions required to produce a significant impact [4/]		
			V/C	LOS[2/]	V/C	LOS[2/]			Trigger	Change in V/C	Additional growth (%)
1.	Imperial Highway	Employee A.M.	0.555	A	0.606	B	0.051		0.701	0.146	15.6%
	&	Delivery	0.446	A	0.613	B	0.167		0.701	0.255	14.3%
	Pershing Drive	Employee P.M.	0.469	A	0.564	A	0.095		0.701	0.232	24.4%
2.	Imperial Highway	Employee A.M.	0.366	A	0.383	A	0.017		0.701	0.335	83.2%
	&	Delivery	0.551	A	0.605	B	0.054		0.701	0.150	15.8%
	Main Street	Employee P.M.	0.600	B	0.631	B	0.031		0.701	0.101	11.1%
3.	Imperial Highway &	Employee A.M.	0.836	D	0.844	D	0.008		0.856	0.020	1.4%
	Sepulveda Boulevard	Employee P.M.	1.220	F	1.220	F	0.000		1.230	0.010	0.8%
4.	Imperial Highway &	Employee A.M.	0.588	A	0.588	A	0.000		0.701	0.113	19.2%
	Nash Street	Employee P.M.	0.325	A	0.332	A	0.007		0.701	0.376	111.3%
5.	Imperial Highway &	Employee A.M.	0.128	A	0.130	A	0.002		0.701	0.573	439.7%
	Douglas Street	Employee P.M.	0.347	A	0.352	A	0.005		0.701	0.354	99.0%
6.	Imperial Highway &	Employee A.M.	0.650	B	0.694	B	0.044		0.701	0.051	1.0%
	Aviation Boulevard	Employee P.M.	0.726	C	0.726	C	0.000		0.766	0.040	5.5%
7.	Imperial Highway &	Employee A.M.	0.455	A	0.480	A	0.025		0.701	0.246	46.0%
	I-105 Eastbound Ramps	Employee P.M.	0.786	C	0.830	D	0.044	Yes	n.a.	n.a.	n.a.
8.	Imperial Highway &	Employee A.M.	0.191	A	0.197	A	0.006		0.701	0.510	255.6%
	La Cienega Boulevard	Employee P.M.	0.452	A	0.468	A	0.016		0.701	0.249	49.7%
9.	Imperial Highway &	Employee A.M.	0.230	A	0.233	A	0.003		0.701	0.472	201.5%
	I-405 Northbound Ramps	Employee P.M.	0.465	A	0.467	A	0.002		0.701	0.236	50.1%
10.	Century Boulevard &	Employee A.M.	0.676	B	0.676	B	0.000		0.716	0.040	5.9%
	Aviation Boulevard	Employee P.M.	0.966	E	0.970	E	0.004		0.976	0.010	0.6%
11.	Aviation Boulevard &	Employee A.M.	0.484	A	0.511	A	0.027		0.701	0.217	37.2%
	111th Street	Employee P.M.	0.661	B	0.684	B	0.023		0.701	0.040	2.4%
12.	La Cienega Boulevard &	Employee A.M.	0.493	A	0.505	A	0.012		0.701	0.208	38.8%
	I-405 Southbound Ramps	Employee P.M.	0.646	B	0.650	B	0.004		0.701	0.055	7.8%
13.	La Cienega Boulevard &	Employee A.M.	0.639	B	0.668	B	0.029		0.701	0.062	5.0%
	Century Boulevard	Employee P.M.	0.856	D	0.870	D	0.014		0.876	0.020	0.7%
14.	La Cienega Boulevard &	Employee A.M.	0.211	A	0.211	A	0.000		0.701	0.491	233.0%
	I-405 Southbound Ramps	Employee P.M.	0.508	A	0.508	A	0.000		0.701	0.193	37.9%
15.	La Cienega Boulevard &	Employee A.M.	0.317	A	0.392	A	0.075		0.701	0.384	79.0%
	104th Street	Employee P.M.	0.467	A	0.505	A	0.038		0.701	0.234	38.9%
16.	La Cienega Boulevard &	Employee A.M.	0.195	A	0.195	A	0.000		0.701	0.506	259.1%
	Lennox Boulevard	Employee P.M.	0.399	A	0.399	A	0.000		0.701	0.302	75.6%
17.	La Cienega Boulevard &	Employee A.M.	0.174	A	0.174	A	0.000		0.701	0.527	303.4%
	111th Street	Employee P.M.	0.522	A	0.564	A	0.042		0.701	0.179	24.4%
18.	La Cienega Boulevard &	Employee A.M.	0.202	A	0.202	A	0.000		0.701	0.499	246.4%
	I-405 Southbound Ramps	Employee P.M.	0.374	A	0.395	A	0.021		0.701	0.327	77.6%
19.	Century Boulevard &	Employee A.M.	0.761	C	0.773	C	0.012		0.801	0.040	3.6%
	I-405 Northbound Ramps	Employee P.M.	0.597	A	0.597	A	0.000		0.701	0.104	17.5%
										Average % Growth:	75.4%

Notes:

1/ The hours of analysis include the Construction Employee a.m. peak (6:00 - 7:00 a.m.), the Construction Delivery peak (3:00 - 4:00 p.m.) and the Construction Employee p.m. peak (3:30 - 4:30 p.m.).

2/ The resulting LOS from the capacity analysis is calculated based on the following v/c ratios: LOS A (< 0.600), LOS B (0.601 - 0.700), LOS C (0.701 - 0.800), LOS D (0.801 - 0.900), LOS E (0.901 - 1.00), LOS F (> 1.000).

3/ Based on the LADOT policies, the intersection capacity analysis is considered to have a significant impact if the change in the v/c ratio from the Adjusted Baseline to the With Project condition meets or exceeds the following rates: LOS C (0.040), LOS D (0.020), LOS E or F (0.010).

4/ "Trigger" represents the v/c ratio required under the "With Project" condition to result in the intersection being significantly impacted in accordance with LADOT criteria. The % growth represents the additional increase in the Project critical volume required to trigger another significant impact.

Source: Ricondo & Associates, Inc. using Traffix, June 2005.
Prepared by: Ricondo & Associates, Inc.

transportation impact at an intersection is considered to be significant if one of the following thresholds is exceeded:

- The LOS is C, its final link v/c ratio is 0.701 to 0.80, and the project-related increase in v/c is 0.040 or greater, or
- The LOS is D, its final link v/c ratio is 0.801 to 0.90, and the project-related increase in v/c is 0.020 or greater, or
- The LOS is E or F, its final link v/c ratio is 0.901 or greater, and the project-related increase in v/c is 0.010 or greater

The analyses show that the intersection of Imperial Highway and I-105 Eastbound Ramps (Intersection #7) would be significantly impacted by the SAIP during the employee p.m. peak hour with a peak construction period in either 2006 or 2005. This intersection impact is generally the same as that presented in Section 4.2 of this Draft EIR. No other intersections would be significantly impacted by the construction of the SAIP.

The second to the last column in Table D-2 shows the change-in-v/c "trigger point" at which an intersection would be considered to be significantly impacted by the SAIP in accordance with LADOT criteria. The last column contains the required additional traffic (percent growth) in the Adjusted Baseline critical volume to reach that trigger point. As shown, all of the intersections except for one, the intersection of Imperial Highway and Aviation Boulevard, can accommodate considerable additional growth in background traffic before another significant impact is triggered in accordance with LADOT criteria. As shown, the additional increase in SAIP related traffic that would be required to trigger an additional significant impact is estimated to average about 75 percent at all intersections, ranging from about 1 percent to about 440 percent. Twelve of the intersections can accommodate a traffic increase of 6 percent to 440 percent, and the remaining 6 can accommodate a traffic increase of about 1 percent to 5 percent before another significant impact threshold would be reached. However, the anticipated change in staging area locations described in Section D.3.1.2 would effectively reduce background traffic in the study area intersections and improve the capacity of most study area intersections to accommodate additional increases in traffic, compared to their capacity as shown in Table D-2. As described in Section 4.2 of this Draft EIR, it is anticipated that additional traffic from other local area developments (e.g., Campus El Segundo) would be included in the 2 percent increase in background traffic assumed for the analysis. However, as described above, most area intersections can accommodate a far greater percentage of traffic in the event that higher than anticipated increases are generated by these other projects.

Based on the results of this conservative analysis, the shift to a peak 2006 SAIP construction period is not anticipated to produce any additional traffic related significant impacts. In addition, it is anticipated that considerable additional growth can be accommodated at most of the study area intersections before another significant impact is triggered.

D.3.1.2 Revised Assumptions Regarding Non-SAIP Project Construction Staging Locations

The off-airport surface transportation analysis for the EIR incorporates traffic activity from the construction of the Tom Bradley International Terminal (TBIT) Improvements and Baggage

Screening Facilities Project and the Terminals 1-8 In-Line Baggage System Construction project[7]. Under refinements to those two projects discussed below, the construction staging and employee parking areas for those two projects are no longer anticipated to be located in the areas assumed for the original SAIP off-airport surface transportation study. The sensitivity analyses shows that the use of the alternative staging locations on the west side of the Airport would reduce study area traffic by an average of 4.6 percent at 17 of the 19 study area intersections compared with the original off-airport surface transportation study estimates. Two intersections would experience increased volumes. However, these intersections would not be significantly impacted because they are still anticipated to operate at a LOS A or B with the additional traffic in 2006.

The construction staging areas for the TBIT Improvements and Baggage Screening Facilities Project and the Terminal 1-8 In-Line Baggage System Construction projects were not fully defined during the preparation of the SAIP off-airport surface transportation study. Therefore, assumptions pertaining to the staging area locations, employee parking locations, and construction-related volumes entering these sites were based on the best information available at that time, as provided in an August 25, 2004 memorandum, *Employee/Construction Truck Data Estimate for TBIT Renovations, TBIT Inline, Terminals 1-8 Inline*, prepared by HNTB. According to the memorandum, it was assumed that construction vehicle staging for the projects would be located in the SAIP study area on airport property located in the southeast quadrant of the intersection of Aviation Boulevard and 111th Street. It had been assumed that construction employees for these projects would park in the construction employee lot located off La Cienega Boulevard. Given the central placement of these facilities within the SAIP study area, it was anticipated that the SAIP study area intersections would be required to accommodate a significant number of trips associated with these projects.

During subsequent refinement and definition of the two projects, LAWA has determined that construction staging and employee parking associated with these projects would not be provided at the originally assumed locations within the SAIP study area. Specifically, all construction delivery vehicle staging and employee parking associated with the TBIT projects will be provided on the west side of the airport, within the TBIT Terminal Improvements and Baggage Screening Facilities project staging area located south of World Way West (adjacent to the SAIP construction staging area). All construction delivery vehicle staging and employee parking for the Terminals 1-8 In-Line Baggage System Construction project will be shifted to the northwest corner of the airport from an area located in the southeast quadrant of the intersection of Westchester Parkway and Pershing Drive.

Table D-3 lists the estimated 2006 Adjusted Baseline intersection volumes based on the initial assumptions used to prepare the SAIP off-airport surface transportation study and the Revised 2006 Adjusted Baseline volumes that reflect the revised staging locations. As shown, reallocation of traffic volumes to the revised locations results in a decrease in traffic volume at all of the SAIP study area intersections, excluding two SAIP study area intersections at the western end of Imperial Highway. These intersections will serve as a gateway to the staging areas access via Pershing Drive. As shown, redistribution of traffic to the new staging areas would result in an average 4.6 percent

[7] The two other known projects at the airport include the Airfield Intersection Improvements – Phase 1 and the Remote Boarding Facilities Modifications. The Airfield Intersection Improvements Project will be completed prior to SAIP construction and the remote boarding facility project is of such a scale that construction employee trips would be negligible. Therefore, the traffic associated with these two projects were not considered separately in the assumptions regarding study area traffic and need not be considered separately in the sensitivity assessments.

Table D-3

Comparison of 2006 Adjusted Baseline Intersection Volumes (Sensitivity Analysis)

	Intersection	Peak Hour [1/]	Adjusted Baseline	Adj. Baseline (Revised) [2/]	Change in Volume	
					Volume	Percent
1.	Imperial Highway & Pershing Drive	Employee AM	1,940	2,160	220	11.3%
		Delivery	2,430	2,560	130	5.3%
		Employee PM	2,580	2,910	330	12.8%
2.	Imperial Highway & Main Street	Employee AM	2,560	2,790	230	9.0%
		Delivery	2,960	3,100	140	4.7%
		Employee PM	3,160	3,500	340	10.8%
3.	Imperial Highway & Sepulveda Boulevard	Employee AM	4,410	4,410	0	0.0%
		Employee PM	6,940	6,930	(10)	(0.1%)
4.	Imperial Highway & Nash Street	Employee AM	2,970	2,950	(20)	(0.7%)
		Employee PM	2,600	2,560	(40)	(1.5%)
5.	Imperial Highway & Douglas Street	Employee AM	1,100	1,070	(30)	(2.7%)
		Employee PM	2,460	2,450	(10)	(0.4%)
6.	Imperial Highway & Aviation Boulevard	Employee AM	3,020	2,860	(160)	(5.3%)
		Employee PM	4,990	4,850	(140)	(2.8%)
7.	Imperial Highway & I-105 Eastbound Ramps	Employee AM	2,490	2,370	(120)	(4.8%)
		Employee PM	3,700	3,480	(220)	(5.9%)
8.	Imperial Highway & La Cienega Boulevard	Employee AM	1,750	1,730	(20)	(1.1%)
		Employee PM	4,010	3,780	(230)	(5.7%)
9.	Imperial Highway & I-405 Northbound Ramps	Employee AM	1,520	1,520	0	0.0%
		Employee PM	2,720	2,640	(80)	(2.9%)
10.	Century Boulevard & Aviation Boulevard	Employee AM	4,790	4,690	(100)	(2.1%)
		Employee PM	7,130	6,910	(220)	(3.1%)
11.	Aviation Boulevard & 111th Street	Employee AM	2,060	1,830	(230)	(11.2%)
		Employee PM	3,150	2,870	(280)	(8.9%)
12.	La Cienega Boulevard & I-405 Southbound Ramps	Employee AM	1,680	1,620	(60)	(3.6%)
		Employee PM	2,570	2,540	(30)	(1.2%)
13.	La Cienega Boulevard & Century Boulevard	Employee AM	4,490	4,280	(210)	(4.7%)
		Employee PM	6,500	6,350	(150)	(2.3%)
14.	La Cienega Boulevard & I-405 Southbound Ramps	Employee AM	1,330	1,120	(210)	(15.8%)
		Employee PM	2,850	2,690	(160)	(5.6%)
15.	La Cienega Boulevard & 104th Street	Employee AM	1,250	890	(360)	(28.8%)
		Employee PM	2,200	1,980	(220)	(10.0%)
16.	La Cienega Boulevard & Lennox Boulevard	Employee AM	960	920	(40)	(4.2%)
		Employee PM	2,390	1,960	(430)	(18.0%)
17.	La Cienega Boulevard & 111th Street	Employee AM	1,000	970	(30)	(3.0%)
		Employee PM	2,610	2,150	(460)	(17.6%)
18.	La Cienega Boulevard & I-405 Southbound Ramps	Employee AM	1,050	1,040	(10)	(1.0%)
		Employee PM	2,270	1,950	(320)	(14.1%)
19.	Century Boulevard & I-405 Northbound Ramps	Employee AM	3,550	3,470	(80)	(2.3%)
		Employee PM	4,420	4,370	(50)	(1.1%)
Total Average Percent Change		Int #3 thru #19	102,930	98,200	(4,730)	(4.6%)

Notes:

1/ The hours of data collection included the Construction Employee a.m. peak (6:00 - 7:00 a.m.), the Construction Delivery peak (3:00 - 4:00 p.m.) and the Construction Employee p.m. peak (3:30 - 4:30 p.m.)

2/ The revised analysis includes not only a growth rate for the one year delay in starting construction but also a circulation of the non-project related construction trips to relocated staging areas and employee lots.

Source: Data collected by Wiltec on August 3 and 4, 2004.
Prepared by: Ricondo & Associates, Inc.

decrease in the 2006 Adjusted Baseline traffic volume for those intersections that experience a reduction in traffic (i.e., Intersections #3 through #19). The redistribution of traffic to the new locations should have a beneficial effect on most of the study area intersections, as compared to the conservative analysis currently depicted in the SAIP traffic study.

As described above, it is anticipated that the intersections of Imperial Highway and Pershing Drive (Intersection #1) and Imperial Highway and Main Street (Intersection #2) would experience an increase in traffic as a result of redistributing construction traffic to the revised staging locations. Therefore, additional analysis was conducted to determine if the increased traffic activity would result in these intersections being significantly impacted by the Project. **Table D-4** depicts the level of service at these two locations for the 2006 Adjusted Baseline and the 2006 SAIP construction scenario, assuming that the construction volumes have been rerouted to the new staging locations. As shown, these intersections would continue to operate at a good level of service (LOS A or B) during the SAIP peak hour periods even with the addition of rerouted construction traffic.

In summary, moving the non-SAIP project staging areas to the west side of the airport would have a beneficial effect on 17 of the 19 study area intersections, compared to the conservative analysis currently depicted in the SAIP traffic study. The two intersections that experience an increase in traffic from the revised staging area assumptions would continue to operate at LOS A or B and would not be significantly impacted by the revised locations.

Table D-4

Comparison of 2006 Adjusted Baseline Intersection Volumes (Sensitivity Analysis)

			Adjusted Baseline (2006)		With Project (2006)			
	Intersection	Peak Hour1/	V/C 4/	LOS 3/	V/C 4/	LOS 3/	Change in V/C	Significant Impact? 5/
1.	Imperial Highway & Pershing Drive	Employee A.M.	0.574	A	0.597	A	0.023	
		Delivery	0.396	A	0.488	A	0.092	
		Employee P.M.	0.519	A	0.571	A	0.052	
2.	Imperial Highway & Main Street	Employee A.M.	0.584	A	0.625	B	0.041	
		Delivery	0.553	A	0.607	B	0.054	
		Employee P.M.	0.653	B	0.683	B	0.030	

Notes:

1/ The hours of analysis include the Construction Employee a.m. peak (6:00 - 7:00 a.m.), the Construction Delivery peak (3:00 - 4:00 p.m.) and the Construction Employee p.m. peak (3:30 - 4:30 p.m.).

2/ An LADOT ATSAC benefit was applied at each intersection with the exception of intersections #3, #9, and #19, which are not a part of the LADOT system.

3/ The resulting LOS from the capacity analysis is calculated based on the following v/c ratios: LOS A (< 0.600), LOS B (0.601 - 0.700), LOS C (0.701 - 0.800), LOS D (0.801 - 0.900), LOS E (0.901 - 1.00), LOS F (> 1.000).

4/ The revised v/c ratios were determined with Traffix software for the intersections and time periods identified as having an increase in total intersection volume from the Adjusted Baseline (2006) condition to the With Project (2006) condition.

5/ Based on the LADOT policies, the intersection capacity analysis is considered to have a significant impact if the change in the v/c ratio from the Adjusted Baseline to the With Project condition meets or exceeds the following rates: LOS C (0.04), LOS D (0.02), LOS E or F (0.01).

Source: Ricondo & Associates using Traffix, April 2005.
Prepared by: Ricondo & Associates, Inc.

D.3.1.3 Cumulative Traffic Conditions

As described in the draft SAIP off-airport surface transportation study, it was assumed that trips associated with the construction or operation of non-airport local area development projects anticipated to be in place during the SAIP construction, would be included in the 2 percent per year growth in background traffic. This assumption is based on review of known local area development projects and the assessment that most of these development projects are not within direct proximity to the study area. They will have minimal effect on the study area intersections. However, it is anticipated that the off-airport surface traffic study analysis is sufficiently conservative to accommodate additional traffic volumes associated with other development projects without triggering a significant impact. This is based on the current listing of known local area development projects listed in Table 3-1 of the Draft EIR and other LAX construction activity. As described previously in Table D-5, the redistribution of TBIT Improvements and Baggage Screening Facilities Project and the Terminals 1-8 In-Line Baggage System Construction project traffic resulting from the revised staging area locations, would result in an average decrease of about 4.6 percent in the Adjusted Baseline volumes as compared to the Adjusted Baseline volumes currently provided in the off-airport surface traffic study. This would essentially allow for an effective average growth in background traffic of about 6.6 percent (2 percent background growth 4.6 percent in Adjusted Baseline values) to re-attain the conservative 2006 level of service results shown previously in Table D-2. Furthermore, it would be necessary to experience even additional growth in background traffic (ranging from 1 percent to 440 percent depending upon the intersection) in order to “trigger” a significant impact in accordance with the LADOT criteria described previously.

In summary, it is anticipated that the traffic analysis prepared for the SAIP is sufficiently conservative to address additional cumulative traffic from undefined projects or developments in the vicinity of the study area.

D.3.2 Air Quality

The Air Quality sensitivity analysis considered potential changes to the construction and operations-related emissions during the peak construction period for each of the criteria pollutants.

The analysis indicates that construction-related emissions for 2006 and 2005 are essentially the same, because the magnitude of construction activity would be the same, regardless of when it occurs. Differences in construction-related emissions in 2006 compared with 2005 would be a function of the achievement of emissions standards for construction equipment that become more stringent over time. Emissions factors from the California Air Resource Board’s OFFROAD model[8], which reflect the effects that the achievement of emissions standards have from year to year, were used to evaluate the differences in construction-related emissions in 2006 compared with 2005. Therefore, for the estimation of construction-related emissions, only the emission factors for the various types of equipment would change to reflect assumed conditions for 2006. For construction activities, CO emissions would increase by approximately 1 ton (less than 1 percent) using 2006 OFFROAD emission factors compared with 2005 OFFROAD emission factors. NO_x emissions decreased by approximately 2 tons (1 percent) using 2006 OFFROAD emission factors compared with 2005 emission factors. VOC emissions increase by approximately .68 tons (less than 1 percent) using 2006 OFFROAD emission factors compared with 2005 OFFROAD emission factors. SO_x emissions would not change as a result of using 2006 OFFROAD emission factors compared with 2005

[8] California Air Resources Board, *Emissions Inventory of Off-Road Large Compression-Ignited Engines (>25HP) Using the New Offroad Emissions Model* (Mailout MSX #99-32), March 2003.

OFFROAD emissions factors and PM_{10} and $PM_{2.5}$[9] emissions would change by less than 1 percent.

The results of the operations-related analysis are summarized in **Table D-5**. The operational analysis indicates that operations-related emissions in 2006 and 2005 are very similar. The detailed results of the analyses are presented in Scenario 3 in the tables provided in Attachment A of this technical appendix. In general, aircraft and GSE emissions would increase slightly as a result of the increase in operations from 2005 to 2006, whereas vehicular emissions (i.e., roadways and parking lots) would decrease as a result of the lower emission factors for 2006 compared with 2005[10].

Table D-5

Comparison of Calculated Airport-Related Emissions for 2005 and 2006

	Emissions				
	CO	VOC	NO_x	SO_x	PM_{10}[4/]
EDMS 4.11[1/]					
2005[2/]	12,066 tpy	1,653 tpy	6,697 tpy	432 tpy	189 tpy
2006[3/]	11,976 tpy	1,637 tpy	6,693 tpy	433 tpy	189 tpy
Difference between 2005 and 2006	-90 tpy	-16 tpy	-4 tpy	<1 tpy	<1 tpy
Percent Change (%)	-0.7%	-1.0%	-0.1%	0.1%	0.3%
EDMS 4.21[1/]					
2005[2/]	12,107 tpy	1,694 tpy	6,966 tpy	442 tpy	190 tpy
2006[3/]	12,018 tpy	1,678 tpy	6,967 tpy	443 tpy	191 tpy
Difference between 2005 and 2006	-89	-16	1	0	1
Percent Change (%)	-0.7%	-0.9%	0.0%	0.1%	0.3%

Notes:

1/ In cooperation with USEPA, the FAA developed the EDMS for the application of assessing air emissions from aircraft operations and airport facilities. The agencies work together to update the model as appropriate to reflect changes in emissions, regulations, and technological enhancements. While emission inventories prepared for the LAX Master Plan Final EIR and the Draft General Conformity Determination were developed with EDMS Version 4.11 (the latest available version of the model at that time), the SAIP project team used the current version of the model (EDMS Version 4.21) released in May 2005 for the analyses in this Draft EIR.

2/ Assumptions: Aircraft operations and aircraft ground service equipment (GSE) (e.g., baggage tugs, catering trucks) and auxiliary power unit (APU) usage were based on 745,000 aircraft operations and 70.8 MAP.

3/ Assumptions: Aircraft operations and GSE/ APU usage were scaled based on the change in aircraft operations (i.e., from 745,000 to 745,500) and traffic related sources were scaled based on the change in MAP (i.e., from 70.8 MAP to 71.5 MAP). Cargo operations were assumed to be constant. No change in stationary sources would occur.

4/ $PM_{2.5}$ emissions are calculated directly from PM_{10} emissions by applying factors for different emission sources that represent the percent of the total PM_{10} emissions that would be classified as $PM_{2.5}$. Therefore, any changes in PM_{10} emissions would proportionately apply to $PM_{2.5}$. Subsequent calculations of $PM_{2.5}$ are not needed to conclude that similarly small percentage changes in PM2.5 would also be expected.

Source: PCR Services Corporation.
Prepared by: PCR Services Corporation and Ricondo & Associates, Inc.

9 $PM_{2.5}$ emissions are a subset of PM_{10} emissions and are calculated by applying factors that represent the portion of PM_{10} emissions from various emission sources that would represent the $PM_{2.5}$ emissions from that source. Therefore, the percentage difference between $PM_{2.5}$ emissions for the peak construction period occurring in 2006 rather than 2005 would be the same as that for PM_{10}. As a result, separate calculations are not needed for $PM_{2.5}$ and the same conclusion reached regarding potential changes in determinations of significance or level of significance for PM_{10} applies to $PM_{2.5}$.

10 California Air Resources Board's EMFAC2002 vehicular traffic emissions factors between 2005 and 2006 decrease by approximately four percent for CO, three percent for NOx, and five percent for VOC to reflect the overall change in the fleet of ground vehicles and the resulting changes in emissions.

Overall, estimated CO, VOC, and NOx emissions are slightly lower (less than 1 percent) for 2006 compared with 2005, whereas estimated SO_x and PM_{10} and $PM_{2.5}$ emissions are slightly higher (less than 1 percent) for 2006 compared with 2005.

Although aircraft and traffic operations increase slightly, the decrease in EMFAC2002 vehicular traffic emission factors between 2005 and 2006 offsets the increase in motor vehicle traffic[11]. Overall airport-related CO, VOC, and NO_x emissions decrease by less than one percent and SO_x and PM_{10} increase by less than one percent. Thus, there would be no significant changes noted for any of the pollutants associated with the shift in the peak year of construction. Therefore, the emissions calculated for a 2005 peak construction year would be representative of emissions if the peak construction year were shifted to 2006. Based on the results of the construction and operations-related emissions analysis, it is concluded that the significance determinations would be identical regardless of whether the peak construction period were in 2005 or 2006.

The general conformity sensitivity test for 2005 and 2006 was based on an analysis of construction period impacts for 2005 and 2006, scaled down to reflect the effects of the constraints associated with operation of a three-runway airfield during SAIP construction (i.e., an operations level consistent with that assumed in the final general conformity determination document). The results of the sensitivity assessment are provided in Scenario 5 in the tables in Attachment A of this technical appendix. The results show that the SAIP would not conflict with the general conformity determination for the LAX Master Plan, regardless of whether the peak construction period were in 2005 or 2006.

D.3.3 Human Health Risks

The assessment of human health risks related to air pollutants is derived directly from the air pollutant emissions inventories. Section D.3.2 describes the sensitivity assessments of pollutants from various sources and demonstrates that the changes in emissions associated with peak construction in 2006 rather than 2005 would not be significant and would not change any determination of significant impact or level of significance. Therefore, the same can be concluded for human health risks. Section 5 of Appendix L of the Draft EIR describes the uncertainties and overall sensitivity of the human health risk analysis. Any potential effect on the absolute analysis of human health risk associated with the slight changes in emissions would be well within the uncertainty of the human health risk analysis. Therefore, the human health risk analysis prepared for this Draft EIR that reflects peak construction occurring in 2005 is reliable for determining the human health risk for a peak construction period in 2006.

D.3.4 Noise

As shown above, forecast operations levels for 2006 are very similar to those projected for 2005. Where there would be no differences in runway and flight track geometry or use, as is the case with the SAIP regardless of whether peak construction occurred in 2005 or 2006, the FAA's Area Equivalent Method 6.0c (AEM) serves as an appropriate technique to quantify the degree of change in the area exposed to 65 CNEL and higher caused by an increase in operations.[12] The AEM analysis performed for this purpose demonstrated that the area exposed to CNEL 65 and higher would not be changed if peak construction year were shifted from 2005 to 2006.

[11] The California Air Resource Board's EMFAC2002 vehicular traffice emission factors decrease by approximately 4 percent for CO, 3 percent for NO_x, and 5 percent for VOC.

[12] Federal Aviation Administration, *Area Equivalent Method User Manual*, available at <http://www.faa.gov/about/office_org/headquarters_offices/aep/models/aem_model/>

The Integrated Noise Model version 6.1 (INM) calculates CNEL contours in tenths of a decimal increment.[13] Assuming that an increase in CNEL energy levels is proportionate to the increase in operations, a two percent increase in total operations would be needed to extend the 65 CNEL contour. As stated above, the number of operations in 2006 is forecast to increase less than 0.1 percent.

Because there would be no change in the fleet mix, runway use patterns, and flight track geometry and use patterns, and only a small (less than 0.1 percent) increase in the number of operations, there would be no considerable difference in the CNEL noise exposure area or in noise exposure impacts on population, dwelling units, and other noise-sensitive facilities regardless of whether peak construction occurred in 2005 or 2006. Based on these factors, the area exposed to CNEL 65 and higher calculated for 2005 would also serve as a reasonable representation of the area exposed to CNEL 65 and higher for 2006 under the same construction conditions. Dwelling unit and noise-sensitive site impacts associated with the 65 CNEL contour for 2005 are also reasonable representations for 2006.

Based on the small change in operations levels, and the similar fleet mix, runway use, hourly activity profiles and flight track utilization for peak construction in 2006 compared with 2005, single-event based results would not change significantly. Single event measures such as Sound Exposure Level (SEL) and Maximum levels (L_{max}) serve as building blocks for CNEL calculations. As shown above, the AEM results indicate that the area exposed to CNEL 65 and higher would not be expected to change between 2005 and 2006. With all other variables equal, a 0.06 percent increase in total operations would not result in a detectible change in SEL and L_{max} levels. For example, the Boeing 747-400 is modeled as the predominant contributor to nighttime noise events. With an increase in overall operations of about 0.06 percent from 2005 to 2006, the change in average annual night operations for this aircraft would be less than 0.01 operation, which is the threshold number of aircraft events exceeding 94 dB SEL to identify a significant impact. Therefore, as it relates to sleep disturbance, no additional homes would be impacted, regardless of whether the peak construction period occurred in 2005 or 2006.

Similarly, classroom disruption thresholds are based on L_{max} levels reported in the total number of minutes that aircraft during the school time period exceed outdoor 84 and 94 L_{max} levels. A difference of just over one average annual operation per day, distributed among all the different aircraft types by runway, by operation mode, and by flight track, would not result in a considerable change in the amount of time in minutes over both thresholds at any of the school locations. A secondary screening evaluation to confirm this statement was conducted using the INM by estimating and then comparing the A-weighted Time-Above Level (TALA) 84 L_{max} contours for 2005 and 2006. The difference in area between the two scenarios is no more than 0.06 percent, which is within contour calculation tolerance levels (0.1 minutes for TALA)[14]. As a conservative reference for this specific scenario (three-runway airfield), an increase of 0.3 square miles in the TALA above 84 L_{max} area equates to about a 0.1 increase in minutes above 84 L_{max}. A 0.06 percent increase in area results in an increase of approximately 0.001 square miles, which is equivalent to a 0.0003-minute increase.

[13] Federal Aviation Administration, *Integrated Noise Model ver. 6.1*, available at <http://www.faa.gov/about/office_org/headquarters_offices/aep/models/inm_model/>

[14] INM tolerance settings control the process of subdividing a contouring grid. If the tolerance is small, INM is more senstive to changes in the noise metric over an area and resulting in higher-fidelity contours. Refer to the FAA Office of Environment and Energy INM 6.0 Technical Manual for more detail.

Such a change would hardly be detected in INM, because it is within the grid calculation tolerance level of 0.1 minutes. The same can be concluded for 94 dB L_{max}. Impacts associated with classroom disruption for 2005 are therefore also reasonable representations of impacts for 2006. Therefore, no additional schools would be impacted, regardless of whether the peak construction period occurred in 2005 or 2006. Classroom disruption impacts (number schools newly impacted) documented for 2005 are reasonable representations for 2006.

Construction equipment noise on the construction site and staging area would be the same for 2006 as for 2005, because construction activity and noise-sensitive time scheduling assumed for 2005 would be the same in 2006. If SAIP construction begins later than anticipated, it is possible that construction of the Campus El Segundo project, located approximately 1.2 miles south of the SAIP site, may occur simultaneously. However, due to the distance of the proposed El Segundo project site from the SAIP site, it is not anticipated that there would be cumulative noise exposure associated with the construction equipment noise from both projects.

The conclusions regarding construction traffic noise for 2005 would also be applicable for 2006 based on the off-airport surface transportation analysis results described herein. Because sound levels increase at a rate of 3 dBA with each doubling of sound energy, traffic volumes would have to increase approximately three-fold over baseline volumes to reach the CEQA threshold of significance criteria of a 5 dBA increase. Based on information in the 2006 forecast sensitivity analysis and the ground traffic sensitivity analysis, construction traffic from this or other projects in the area would not increase three-fold from 2005 to 2006. Therefore there would be no cumulative traffic-noise impact resulting from a shift in peak construction year from 2005 to 2006.

D.4 Sensitivity Assessment of the use of EDMS Version 4.21 Compared with Version 4.11

Sensitivity analyses for airport-related Air Quality emissions were performed for both the 2005 and 2006 peak construction scenarios using both the EDMS 4.11 model originally used for the 2005 ADEIR and the current EDMS 4.21 updated model. The air quality analysis prepared for the LAX Master Plan Final EIR was developed using EDMS Version 4.11, which was the current version of the model at that time. In May 2005, subsequent to the certification of the LAX Master Plan Final EIR, FAA released updated Version 4.21 of the model. The new version of the model interfaces with U.S. Environmental Protection Agency’s latest version of AERMOD (02222) and its supporting weather and terrain processors, AERMET and AERMAP. Only airport-related emissions are calculated using EDMS. Other models are used to estimate construction emissions. Therefore, this sensitivity assessment addresses only aircraft operations-related emissions.

The results of the analysis are summarized in **Table D-6**. Detailed calculations are provided in Scenarios 1 and 2 (2003 Baseline and 2005 SAIP conditions, respectively) in the tables provided Attachment A of this technical appendix. As shown in the detailed tables, the use of EDMS Version 4.21 would result in an increase in estimated aircraft emissions. This increase is the result of changes in the time-in-mode splits included in Version 4.21, compared with those in EDMS Version 4.11. EDMS 4.21 and EDMS 4.11 calculated identical emissions for all other sources of airport operations-related emissions (e.g., stationary sources, GSE/APU, roadways, and parking lots).

Changes in aircraft-related emissions of CO, SO_x, and PM_{10}[15] are negligible. However, VOC emissions are about 4.2 percent higher when EDMS 4.21 is used instead of EDMS 4.11 and NO_x emissions are about 1.4 percent higher when EDMS Version 4.21 is used instead of EDMS Version 4.11. The significance determinations presented in the ADEIR would not change if EDMS 4.21 were used to calculate construction period emissions instead of EDMS 4.11, regardless of whether the peak construction period were to occur in 2005 or 2006. Nevertheless, it is recommended to use Version 4.21 rather than Version 4.11, so that the latest available techniques for calculating pollutant emissions are used. The results presented in Scenario 5 in the tables in Attachment A of this technical appendix demonstrate that the use of Version 4.21 would not result in a conflict with the general conformity determination.

Table D-6

EDMS Version Comparison

	Emissions				
Scenario	CO	VOC	NO_x	SO_x	PM_{10}
Change in Emissions (EDMS 4.11 vs. 4.2)					
2003 Baseline[1/]	0.1%	-0.3%	3.0%	2.0%	0.6%
2005 SAIP[2/]	0.3%	2.5%	4.0%	2.4%	0.8%
Change in SAIP Emissions (2003 vs. 2005)					
EDMS 4.11	2,938 tpy	558 tpy	2,170 tpy	155 tpy	37 tpy
EDMS 4.2	2,970 tpy	603 tpy	2,301 tpy	160 tpy	38 tpy
Difference with Update to EDMS 4.2	32 tpy	44 tpy	131 tpy	5 tpy	1 tpy
Overall Increment with Update to EDMS 4.2	0.3%	4.2%	1.4%	0.6%	0.3%

Notes:

1/ Assumptions: Based on 4th Quarter 2003 INM (622,206 aircraft operations).

2/ Assumptions: 70.8 MAP and 745,000 aircraft operations).

3/ $PM_{2.5}$ emissions are calculated directly from PM_{10} emissions by applying factors for different emission sources that represent the percent of the total PM_{10} emissions that would be classified as $PM_{2.5}$. Therefore, any changes in PM_{10} emissions would proportionately apply to $PM_{2.5}$. Subsequent calculations of $PM_{2.5}$ are not needed to conclude that similarly small percentage changes in PM2.5 would also be expected.

Source: PCR Services Corporation.
Prepared by: PCR Services Corporation.

[15] $PM_{2.5}$ emissions are a subset of PM_{10} emissions and are calculated by applying factors that represent the portion of PM_{10} emissions from various emission sources that would represent the $PM_{2.5}$ emissions from that source. Therefore, the percentage difference between $PM_{2.5}$ emissions for the peak construction period occurring in 2006 rather than 2005 would be the same as that for PM_{10}. As a result, separate calculations are not needed for $PM_{2.5}$ and the same conclusion reached regarding potential changes in determinations of significance or level of significance for PM_{10} applies to $PM_{2.5}$.

D.7 Conclusions

Based on the results of the sensitivity analyses for 2006 compared with 2005 activity levels and the new assumptions regarding the locations of non-SAIP staging areas, the off-airport surface traffic, air quality, human health risks, and noise impacts calculated using activity levels for 2005 and the previously identified staging areas would provide an adequate representation of the impacts associated with the peak construction period occurring in 2006. The shifting of the peak construction period from 2005 to 2006 would not be expected to result in any additional off-airport surface traffic, air quality, human health risks, or noise impacts beyond those identified by the 2005 analysis.

All air quality and human health risks analyses will be conducted using Version 4.21 rather than Versions 4.11 of the EDMS in the interest of using the most up-to-date analytical techniques, although no previously unidentified significant impacts will result.

Attachment A: Air Quality Sensitivity Assessment

This page intentionally left blank.

Scenario 1: Comparison of EDMS 4.11 vs. 4.21 (2003 Baseline)					
Assumptions: Based on 4th Quarter 2003 INM (622,206 aircraft operations)					
2003 Baseline EDMS 4.11					
NAME	CO_TONS	VOC_TONS	NOX_TONS	SOX_TONS	PM10_TONS
Aircraft	3630	427	2885	255	40
GSE/AGE/APU	2230	164	1073	15	35
Roadways	2833	341	312	1	34
Parking Lots	323	81	60	0	8
Stationary Sources	112	82	198	6	34
Total	9128	1094	4527	277	151
2003 Baseline EDMS 4.21					
NAME	CO_TONS	VOC_TONS	NOX_TONS	SOX_TONS	PM10_TONS
Aircraft	3639	428	3023	261	41
GSE/APU	2230	160	1073	15	35
Roadways	2833	341	312	1	34
Parking Facilities	323	81	60	0	8
Stationary Sources	112	82	198	6	34
Total	9137	1091	4665	283	152
Difference with Update to 4.21	**9**	**-3**	**138**	**6**	**1**
% Change with Update to 4.21	**0.1%**	**-0.3%**	**3.0%**	**2.0%**	**0.6%**
Conclusion: Aircraft emissions increase slightly due to changes in EDMS 4.2 aircraft time-in-mode times. All other sources remain the same.					

Scenario 2: Comparison of EDMS 4.11 vs. 4.21 (2005 SAIP Project)					
Assumptions: No changes to fleet mix, LTOs, etc. (70.8 MAP and 745,000 aircraft operations)					
2005 With SAIP EDMS 4.11					
NAME	CO_TONS	VOC_TONS	NOX_TONS	SOX_TONS	PM10_TONS
Aircraft	6090	969	4801	406	60
GSE/AGE/APU	2744	188	1292	19	40
Roadways	2810	339	342	2	45
Parking Lots	310	75	64	0	10
Stationary Sources	112	82	198	6	34
Total	12066	1653	6697	432	189
2005 With SAIP EDMS 4.21					
NAME	CO_TONS	VOC_TONS	NOX_TONS	SOX_TONS	PM10_TONS
Aircraft	6131	1015	5069	416	62
GSE/APU	2744	183	1292	19	40
Roadways	2810	339	342	2	45
Parking Facilities	310	75	64	0	10
Stationary Sources	112	82	198	6	34
Total	12107	1694	6966	442	190
Difference with Update to 4.21	**41**	**41**	**269**	**10**	**2**
% Change with Update to 4.21	**0.3%**	**2.5%**	**4.0%**	**2.4%**	**0.8%**
Change in SAIP Emissions (2003 vs. 2005):					
EDMS 4.11	**2938**	**558**	**2170**	**155**	**37**
EDMS 4.21	**2970**	**603**	**2301**	**160**	**38**
Difference with Update to 4.21	**32**	**44**	**131**	**5**	**1**
% Change from 2003 with EDMS 4.11	**32.2%**	**51.0%**	**47.9%**	**55.9%**	**24.7%**
% Change from 2003 with EDMS 4.21	**32.5%**	**55.2%**	**49.3%**	**56.5%**	**25.0%**
Difference with Update to 4.21	**0.3%**	**4.2%**	**1.4%**	**0.6%**	**0.3%**
Conclusion: Aircraft emissions increase slightly due to changes in EDMS 4.21 aircraft time-in-mode times. All other sources remain the same.					

Scenario 3: Comparison of SAIP Project for Peak Construction Year (2005 vs. 2006)

Assumptions: Aircraft and GSE/AGE/APU were scaled based on the change in aircraft operations (i.e., 745,000 vs 745,500) and traffic related sources were scaled based on the change in MAP (i.e., 70.8 MAP vs 71.5 MAP). Cargo operations were assumed to be constant. No change in stationary sources would occur.

2006 With SAIP EDMS 4.11					
NAME	CO_TONS	VOC_TONS	NOX_TONS	SOX_TONS	PM10_TONS
Aircraft	6095	969	4804	406	60
GSE/AGE/APU	2745	188	1293	19	40
Roadways	2724	325	335	2	45
Parking Lots	300	72	63	0	10
Stationary Sources	112	82	198	6	34
Total	11976	1637	6693	433	189
2006 With SAIP EDMS 4.21					
NAME	CO_TONS	VOC_TONS	NOX_TONS	SOX_TONS	PM10_TONS
Aircraft	6136	1016	5078	416	62
GSE/AGE/APU	2745	183	1293	19	40
Roadways	2724	325	335	2	45
Parking Lots	300	72	63	0	10
Stationary Sources	112	82	198	6	34
Total	12018	1678	6967	443	191
Change in SAIP Emissions (2005 to 2006):					
EDMS 4.11	**-90**	**-16**	**-4**	**0**	**1**
% Change	**-0.7%**	**-1.0%**	**-0.1%**	**0.1%**	**0.3%**
EDMS 4.21	**-89**	**-16**	**1**	**0**	**1**
% Change	**-0.7%**	**-0.9%**	**0.0%**	**0.1%**	**0.3%**
Change in SAIP Emissions (2003 vs. 2006):					
EDMS 4.11	**2848**	**542**	**2166**	**155**	**38**
EDMS 4.2	**2881**	**587**	**2302**	**160**	**39**
Difference with Update to 4.21	**33**	**45**	**136**	**5**	**1**
% Change from 2003 with EDMS 4.11	**31.2%**	**49.5%**	**47.8%**	**56.0%**	**25.1%**
% Change from 2003 with EDMS 4.21	**31.5%**	**53.8%**	**49.3%**	**56.6%**	**25.4%**
Difference with Update to 4.21	**0.3%**	**4.2%**	**1.5%**	**0.6%**	**0.3%**

Conclusion: The change from 2005 to 2006 results in a reduction in overall emissions. Although aircraft and traffic operations increase slightly, the change in EMFAC2002 emission factors from to 2006 to 2005 for roadway traffic offset the increase in emissions from operations. Thus, updating the analysis year to 2006 decreases the incremental emissions (i.e., 2006 compared to 2003 baseline).

Scenario 4: Conformity Determination based on GCD Projections (4.11 and 4.21) for 2005

Assumptions: Aircraft and GSE/AGE/APU were scaled based on the change in aircraft operations (i.e., 675,504 GCD 2005 SAIP vs 706,786 GCD 2005 No Project) and traffic related sources were scaled based on the change in MAP (i.e., 63.6 MAP GCD 2005 SAIP and 64 MAP GCD 2005 No Project). Cargo operations were assumed to be constant. No change in stationary sources would occur.

2005 No Project GCD EDMS 4.11 (Table 4 of Final GCD)

NAME	CO_TONS	VOC_TONS	NOX_TONS	SOX_TONS	PM10_TONS
Aircraft	5312	901	4315		46
GSE/APU	2527	174	1200		38
Stationary Sources	112	82	199		34
Construction	654	883	311		47
MV On Airport	2805	372	365		49
MV Off Airport	27968	2512	4193		1454
Total	39378	4924	10583		1668

2005 SAIP GCD EDMS 4.11

NAME	CO_TONS	VOC_TONS	NOX_TONS	SOX_TONS	PM10_TONS
Aircraft	5559	884	4392	371	54
GSE/APU	2492	171	1176	17	37
Stationary Sources	112	82	198	6	34
Construction from SAIP	111	17	182		26
MV On Airport	2722	363	355	2	46
MV Off Airport	27813	2498	4170	0	1446
Total	38809	4015	10474	396	1643
Comparison to No Project	-569	-909	-109		-25
Threshold	100	100	100		70
Exceed Threshold	**No**	**No**	**No**		**No**

Conclusion: 2005 SAIP GCD EDMS 4.11 passes general conformity.

2005 No Project GCD EDMS 4.21

NAME	CO_TONS	VOC_TONS	NOX_TONS	SOX_TONS	PM10_TONS
Aircraft	5348	944	4557		47
GSE/APU	2527	174	1200		38
Stationary Sources	112	82	199		34
Construction	654	883	311		47
MV On Airport	2805	372	365		49
MV Off Airport	27968	2512	4193		1454
Total	39414	4967	10825		1669

2005 SAIP GCD EDMS 4.21

NAME	CO_TONS	VOC_TONS	NOX_TONS	SOX_TONS	PM10_TONS
Aircraft	5596	926	4638		55
GSE/APU	2492	171	1176		37
Stationary Sources	112	82	198		34
Construction from SAIP	111	17	182		26
MV On Airport	2722	363	355		46
MV Off Airport	27813	2498	4170		1446
Total	38846	4057	10720		1645
Comparison to No Project	-568	-910	-105		-25
Threshold	100	100	100		70
Exceed Threshold	**No**	**No**	**No**		**No**

Conclusion: 2005 SAIP GCD EDMS 4.11 passes general conformity.

Scenario 5: Conformity Determination based on GCD Projections (4.11 and 4.21) for 2006

Assumptions: Aircraft and GSE/AGE/APU were scaled based on the change in aircraft operations (i.e., 675,958 GCD 2006 SAIP vs 707,239 GCD 2006 No Project) and traffic related sources were scaled based on the change in MAP (i.e., 64.2 MAP GCD 2006 SAIP and 64.9 MAP GCD 2006 No Project). Cargo operations were assumed to be constant. No change in stationary sources would occur.

2006 No Project GCD EDMS 4.11 (Table 4 of Final GCD)

NAME	CO_TONS	VOC_TONS	NOX_TONS	SOX_TONS	PM10_TONS
Aircraft	5445	933	4400		47
GSE/APU	2406	147	1021		35
Stationary Sources	112	83	200		34
Construction	490	525	218		40
MV On Airport	2665	354	351		49
MV Off Airport	26690	2421	4011		1486
Total	37808	4464	10201		1691

2006 SAIP GCD EDMS 4.11

NAME	CO_TONS	VOC_TONS	NOX_TONS	SOX_TONS	PM10_TONS
Aircraft	5563	885	4396		54
GSE/AGE/APU	2494	171	1177		37
Stationary Sources	112	83	200		34
Construction from SAIP	111	17	182		26
MV On Airport	2638	348	348		47
MV Off Airport	26542	2408	3989		1478
Total	37460	3912	10291		1676
Comparison to No Project	-348	-552	90		-16
Threshold	100	100	100		70
Exceed Threshold	**No**	**No**	**No**		**No**

Conclusion: 2006 SAIP GCD EDMS 4.11 passes general conformity.

2006 No Project GCD EDMS 4.21

NAME	CO_TONS	VOC_TONS	NOX_TONS	SOX_TONS	PM10_TONS
Aircraft	5482	977	4646		48
GSE/APU	2406	147	1021		35
Stationary Sources	112	83	200		34
Construction	490	525	218		40
Stationary Sources	112	83	200		34
NAME	111	17	182		26
MV On Airport	5424	889	4542		56

2006 SAIP GCD EDMS 4.21

NAME	CO_TONS	VOC_TONS	NOX_TONS	SOX_TONS	PM10_TONS
Aircraft	5600	927	4647		53
GSE/APU	2494	171	1177		37
Stationary Sources	112	83	200		34
Construction	111	17	182		26
MV On Airport	2638	348	348		47
MV Off Airport	26542	2408	3989		1478
Total	37497	3954	10543		1674
Comparison to No Project	-347	-510	96		-18
Threshold	100	100	100		70
Exceed Threshold	**No**	**No**	**No**		**No**

Conclusion: 2006 SAIP GCD EDMS 4.21 passes general conformity.

Appendix E Draft Program Refinement/Preliminary Engineering Report

This page intentionally left blank.

DRAFT PROGRAM REFINEMENT/ PRELIMINARY ENGINEERING REPORT

SOUTH AIRFIELD AND NLA PROGRAM

Los Angeles International Airport

Prepared for:

Los Angeles World Airports

Prepared by:

HNTB Corporation

September 26, 2003

This page intentionally left blank.

VOLUME I

TABLE OF CONTENTS

Section **Page**

LIST OF TABLES

Table **Page**

LIST OF FIGURES

Figure **After Page**

VOLUME II

PROGRAM REFINEMENT DRAWINGS

VOLUME III

APPENDENCIES

Appendix	Title
A	List of Advisory Circulars for AIP Projects
B	2002 and 2012 Flight Schedule
C	Geotechnical Report
D	Drainage Runoff Calculations
E	Glossary

This page intentionally left blank.

1.0 INTRODUCTION

1.1 Purpose and Scope

The purpose of the Program Refinement/Preliminary Engineering Report for the South Airfield and NLA Program at Los Angeles International Airport (LAX) is to document the principal engineering findings resulting from preliminary studies performed for the project. This report also follows the recommendations outlined by the Federal Aviation Administration (FAA) for material to be included in Engineer's Design Reports referenced in FAA Order 5100.38A.

The report has been structured in separate sections addressing several engineering and project topics. After this **Section 1.0 – Introduction**, the following sections address the following topics:

- Data Collection
- Development of Runway/Taxiway Layout
- Pavement Design
- Drainage and Utilities
- Airfield Lighting and Signage and Pavement Marking
- Airfield Lighting Control System
- Landing and Navigational Aids
- Construction Materials Availability
- Bridge Engineering
- Construction Phasing
- Permitting and Other Requirements
- Construction Cost Estimates

1.2 Background

Runway incursions (RIs) are a serious safety concern and represent a potential for aircraft accidents. LAX has experienced the highest number of runway incursions of any U.S. airport, based on data maintained by the FAA. The FAA requested Los Angeles World Airports (LAWA), who owns and operates LAX, to review, evaluate, and propose options to minimize and mitigate RIs.

LAWA commissioned the preparation of a study titled "Southside Airfield & New Large Aircraft (NLA) Studies" in the first half of 2003, which identified and developed of a number of alternatives and options to mitigate RIs at LAX. Through extensive analysis and modeling, this study recommended the development of a new center taxiway between the two south parallel runways as the optimum means of mitigating RIs. The development of the New Center Taxiway will minimize the potential for pilot misjudgment and enhance the efficiency of the airport. The recommended action was presented to LAWA's Board of Airport Commission, which unanimously endorsed it.

The recommended center taxiway option provides a new parallel taxiway centered midway between Runways 7R-25L and 7L-25R. The proposed center taxiway incorporates a shift of Runway 7R-25L, 55.42 feet to the south, providing an 800-foot centerline separation between Runway 7R-25L and the relocated Runway 7L-25R. The 800-foot separation provides space for development of a new parallel taxiway with a centerline separation distance of 400 feet from both runways.

1.3 Scope of the Project

As depicted in **Figure 1.1**, the overall scope of the project consists of:

1. Constructing a relocated Runway 7R-25L, 11,095 feet in length and 200 feet in width, with the centerline shifted 55.42 feet to the south of its current location, and
2. Constructing a new center taxiway located midway between Runways 7R-25L and 7L-25R (400 feet centerline to centerline).

Existing Runway 7R-25L Navigational Aids (NAVAIDS) will be relocated to conform with the shifted runway centerline and a new high intensity runway lighting system will be installed with the existing approach lights relocated along the new runway centerline.

The new center taxiway, designated Taxiway "AC", will extend from Taxiway "U" on the west through Taxiway "WF" on the east. Ultimately, the center taxiway will extend and connect to Taxiway "F" on the east end of the airfield. However, due to current limitations of available technology and equipment needed for the replacement of a glide scope antenna, the extension of the center taxiway between the existing Taxiway WF and Taxiway F will be deferred for future development. In the interim, a diagonal extension of the new center taxiway will angle north tying into Runway 7L-25R approximately 2,545 feet west of the existing Runway 25R threshold. This taxiway will continue north across runway 7L-25R at a 90 degree angle tying into a point on Taxiway "B" generally midway between existing Taxiways "C-3" and "C-2".

New high intensity taxiway lighting will be installed along the length of the new center taxiway. Construction of additional exit taxiways and reconfiguration of some existing taxiways will also be undertaken together with the installation of associated lighting facilities.

The proposed airfield improvements included in the project are consistent with the *LAX Master Plan – Alternative D*, and share the goals of the Master Plan to enhance the safety and security of LAX.

1.4 Standards and References

All elements of the project will be designed and constructed in accordance with applicable design criteria and in compliance with Part V Assurances of Federal Grant Agreements. The project will be carried out in accordance with policies, standards and specifications approved by the Secretary of Transportation, including, but not limited to, the current FAA Advisory Circulars (AC's) for Airport Improvement Program (AIP) projects, which are listed in Volume III, **Appendix A**. Additionally, the project will be carried out in accordance with applicable LAWA Specification standards, State Policies standards, and the Standard Specifications for Public Work Construction "Green Book".

1.5 Submittal Contents

This preliminary engineering submittal includes the following:

Volume I	Program Refinement/Preliminary Engineering Report
Volume II	Program Refinement Drawings
Volume III	Appendices

2.0 DATA COLLECTION

2.1 Introduction

This section describes the data compiled and used as the basis for engineering analysis and design of the proposed project. Data collected include aircraft traffic data, topographic surveys, geotechnical investigations, hydrology data, and "as-built" or record drawings.

As stated in Section 1.0 -Introduction of this report, the engineering studies included in this phase of the design are on a conceptual level. This is partially driven by the level of detail and completeness of the background data used. It should be noted, however, that the design team is in the process of collecting data needed for detailed design such as topographic surveys, aerial photogrammetry, field topography, utility surveys, and other pre-design data needed for the design process.

2.2 Traffic Volume and Critical Aircraft

Air traffic information is required to assess the potential impacts of construction on airport operations and to aid in the design of pavement structural sections.

Flight schedules for 2002 and 2012 were developed during the Study Phase of the project. These flight schedules (event files) were used as input for the airfield simulation. These flight schedules reflect the current (2002) and anticipated traffic levels and aircraft fleet mix in the future and are used in subsequent analyses related to construction phasing and pavement design.

A copy of these schedules is included in Volume III as **Appendix B** of this report.

2.3 Topographic Survey

The Program Refinement/Preliminary Engineering task relied primarily on surveys (photogrammetry) collected for the Master Plan by Psomas, Inc. in 2000. Subsequent phases of the design will rely on more up-to-date photogrammetry and ground surveys. These surveys are currently being collected and are expected to be available to the project team in late September of 2003.

2.4 Geotechnical Investigation

The subsurface investigation consisted of four borings ranging from 5 to 10 feet deep. The boring depths and spacing are in accordance with the FAA guidelines as found in "*Airport Pavements Design and Evaluation", Advisory Circular 150/5320-6D* dated January 30, 1996. The number of exploration points was selected to provide overall coverage of the project site.

Laboratory testing was performed on collected samples to determine soil classification and pertinent characteristics. Testing included moisture content/dry density, Atterberg limits/particle size distribution, compaction, California Bearing Ratio (CBR), and chemical testing for corrosion evaluation. A copy of the draft report for this program is included in Volume III as **Appendix C.** The results of the testing program are discussed further in the pavement design section, **Section 4.0 –Pavement Design**, of this report.

2.5 Utility Locations

The Program Refinement/Preliminary Engineering studies relied primarily on existing records of utility locations collected through a review of LAWA's record drawings. These drawings often present conflicting or incomplete information. Therefore, the design team is in the process of performing an underground utility survey. This survey will rely on field investigation and the use of sophisticated equipment to more accurately locate utilities horizontally and vertically in the vicinity of the project site.

The information collected through this task will be transmitted to LAWA's Utility Survey and Documentation (LUSAD) consulting team.

2.6 Drainage Master Plan

As discussed in **Section 5.0 – Drainage and Utilities**, the Program Refinement/Preliminary Engineering task relied on the information and data contained in the *Final On-Site Hydrology Report for Los Angeles International Airport* (by PBQD, Oct 18, 2002).

The PBQD Hydrology Study is scheduled to be updated in the near future to ensure its compliance with the Master Plan commitments. The direction and recommendations of this study are likely to affect the assumptions used in the design of the drainage improvements for this project.

2.7 Pavement Investigation

The conditions of the pavement in the South Airfield are not thoroughly documented. Specifically, the condition of the pavement of Runway 25L was studied as part of the construction of three high-speed exit taxiways (WF, WG and T) in 2000. The work was performed by Dynatest and used non-destructive means to assess the condition of the runway pavement. Other studies have been of a more cursory nature and no record or documentation was found.

3.0 AIRFIELD DEVELOPMENT

3.1 Introduction

This section presents the design criteria used in the development of the airfield geometrics for the proposed project. The criteria used follows FAA recommendations for the design aircraft in the Airport's fleet mix.

Airfield geometric standards reflect the relationship between the anticipated aircraft's physical characteristics and the dimensions of certain airfield elements within the framework of existing physical and geographical constraints.

3.2 Design Aircraft

The Airport currently serves a variety of aircraft types. These range from small general aviation to large, air carrier aircraft. FAA guidelines for airfield geometrics and grading are presented in *FAA Advisory Circular 150/5300-13, "Airport Design"*. The criteria used in the development of the geometric layout of the airfield components should serve the current, and future, most demanding aircraft. The Advisory Circular (AC) provides recommended dimensions and other design standards based on two aircraft characteristics, wingspan and approach category.

Table 3-1 below lists the wingspan and approach category corresponding to the most demanding aircraft currently serving LAX. **Table 3-2** lists the Airplane Design Group (ADG) as categorized by corresponding wingspan.

TABLE 3-1
Aircraft Wingspan and Approach Category

Aircraft	Wingspan (feet)	Approach Category
B777-300	199.9	D
A340-600	208.1	D
B747-400	213.0	D
A380-800[1]	261.8	D

Source: FAA AC 150/5300, Appendix 13
Note 1: A380-800 is anticipated to serve LAX in 2006

TABLE 3-2
Airplane Design Group (ADG) and Corresponding WINGSPAN

Wingspan	Design Group
Up to, but not including 49 feet	I
49 feet up to, but not including 79 feet	II
79 feet up to, but not including 118 feet	III
118 feet up to, but not including 171 feet	IV
171 feet up to, but not including 214 feet	V
214 feet up to, but not including 262 feet	VI

Currently the Boeing B747-400 has the largest wingspan of the aircraft currently operating at LAX. The B747-400 is within Aircraft Design Group V, Approach Category D. The Airbus A340-600, with the largest wheelbase of 107 feet, also needs to be considered when analyzing turning movements and holding positions.

Although the A380-800, a member of the New Large Aircraft (NLA), is not currently serving the airport, scheduled commercial service is expected in 2006. The *LAX Master Plan* presents long-term recommendations to accommodate the NLA operations. Interim, or short-term, anticipated operating requirements have been evaluated and presented in the report entitled *"Southside Airfield and New Large Aircraft (NLA) Studies, Los Angeles International Airport (LAX)."*

Airfield elements which are planned to accommodate NLA operations including arrival and departure runways, taxi paths, and terminal gates will conform to Design Group VI standards when possible. Modifications of Standards (MOS) have been developed and submitted to FAA for consideration where it is not economically and/or physically possible to construct facilities to meet NLA requirements or ADG VI standards. The development of the MOS for LAX was developed based on MOS currently approved and implemented at other airports which operate at an acceptable level of safety and economy.

Table 3-3 lists the specific airfield dimensional requirements for the B747-400 as well as the Design Group V generic aircraft. Table 3-3 also includes the dimensional requirements of the A380-800 along with applicable MOS submitted to the FAA for LAX. These dimensions are the basis of design for the South Airfield Improvements.

TABLE 3-3
Applicable Dimensional Criteria

Dimension (feet)	Group V	B747-400	A-380-800	A380-800 MOS
Parallel Runway Centerline to:				
Holdline	250.0	250.0	250.0	
Taxiway/Taxilane Centerline	400.0	400.0	600.0	500.0
Aircraft Parking Limit Line	500.0	500.0	500.0	
Wingtip Clearance Standards				
Taxiway Wingtip Clearance	44.0	44.0	50.0	
Taxilane Wingtip Clearance	27.0	27.0	30.0	
Taxiway Centerline to:				
Parallel Taxiway/Taxilane Centerline	267.0	265.6	324.2	
Fixed or Movable Object	160.0	159.1	193.3	146.0
Taxilane Centerline to:				
Parallel Taxilane Centerline	245.0	244.3	298.0	
Fixed or Movable Object	138.0	137.8	167.0	146.0
Runway				
Width	150.0	150.0	200.0	
Shoulder Width	35.0	35.0	40.0	
Safety Area Width	500.0	500.0	500.0	
Object Free Area Width	800.0	800.00	800.00	

TABLE 3-3
Applicable Dimensional Criteria

Dimension (feet)	Group V	B747-400	A-380-800	A380-800 MOS
Taxiway				
Width	75.0	75.0	100.0	75.0
Shoulder Width	35.0	35.0	40.0	52.5
Safety Area Width	214.0	213.0	261.8	
Object Free Area Width	320.0	318.2	386.0	
Taxiway Fillet Dimensions				
Radius of Taxiway Turn	150.0	150.0	170.0	
Length of Lead-into Fillet	250.0	250.0	250.0	
Fillet Radius for Tracking Centerline	85.0	85.0	85.0	
Fillet Radius for Judgmental Over-steering (Symmetrical Widening)	105.0	105.0	110.0	
Fillet Radius for Judgmental Over-steering (One Side Widening)	97.0	97.0	100.0	

3.3 Horizontal Geometry

The basis for the general horizontal configuration of the improvements included in the project was based on the general layout recommended in the South Airfield and NLA Study. More specific geometric features of the Runway 7R-25L relocation and associated taxiway improvements designed under this project were established by using FAA criteria as summarized in Table 3-3. These criteria provide the primary basis for the geometric requirements with the exception of the noted MOS.

As stated in the previous subsection, the recommended criteria to be used for airfield geometrics will meet Airplane Design Group V, Approach Category D requirements. The design, however, includes provisions for turning movements and taxiway width requirements for the A380-800 and A340-600 where applicable.

A local coordinate system, based on the surface grid, has been used to provide horizontal control for all airfield components. All plan dimensions and stationing are based on this local coordinate system.

3.3.1 South Airfield Components

A. Runway 7R-25L Relocation

Relocate Runway 7R-25L to accommodate the construction of a new parallel taxiway located at the midpoint between Runways 7R-25L and 7L-25R. Relocated Runway 7R-25L is located parallel to and 800 feet south of the existing Runway 7L-25R. At the conclusion of construction Runway 7R-25L will be 11,095 feet in length from end to end and 200 feet in pavement width, with 40-foot wide paved shoulders.

Geometric standards also include design of runway clear spaces, such as the Obstacle Free Zone (OFZ), Object Free Area (OFA) and Runway Protection Zone (RPZ), which will be addressed later in this section.

B. Center Taxiway "AC"

One parallel, full-length taxiway will be constructed between Runways 7R-25L and 7L-25R, designated Taxiway "AC". Taxiway "AC" is centered 400 feet from each runway centerline and is 75 feet in pavement width, with 50-foot wide shoulders. The 50-foot shoulder width, as requested by LAWA, is comprised of 35 feet of shoulder pavement adjacent to the taxiway edge plus 15 feet of erosion control type paving on the outer edge.

Taxiway "AC" along with the associated connector and runway entrance and exit taxiways included in the south airfield layout are depicted in **Figure 3.1**.

C. Entrance and Exit Taxiways

Entrance taxiways are those taxiways providing access to the runway thresholds and/or runway ends. Runway entrances to 7R and 25L are served by Taxiway "U" (west) and Taxiway "F" (east) respectively.

The design goal of runway *exit* taxiways is to maintain runway capacity by controlling runway occupancy time, and to provide exit locations that offer safe, comfortable and convenient paths to the taxi terminus points. Factors which dictate the location of exit taxiways are aircraft type and approach speed, touchdown location, deceleration rate, runway elevation and runway gradient. As stated above, exit taxiway locations are depicted in Figure 3-1.

3.3.2 Runway Length

The south airfield runways at LAX, Runways 7L-25R and 7R-25L span lengths of 12,090' and 11,095' respectively. Currently both runways provide sufficient landing and takeoff lengths for the Boeing B747-400 operations. With the anticipated addition of the A380-800 to the aircraft mix, the runway length requirements for this aircraft have been considered as well.

Based on preliminary aircraft performance curves prepared by Airbus, the A380-800 is projected to have takeoff runway length requirements less than that of the Boeing B747-400. Therefore, the existing length of Runway 7R-25L of 11,095 feet will remain unchanged upon the runway's relocation.

3.3.3 Runway to Runway Separation Criteria

Separation standards for runways depend on whether simultaneous operations will be conducted in Visual Flying Rules (VFR) or Instrument Flying Rules (IFR). Also the FAA offers minimum separations as well as recommended separations. At LAX the existing separation between Runways 7R-25L and 7L-25R is approximately 745 feet.

The relocation of Runway 7R-25L to the south allows for the construction of parallel Taxiway "AC" to mitigate runway incursions. As a result the new runway to runway separation is 800 feet.

3.3.4 Runway Obstacle Free Zone

This is one of three components of the Obstacle Free Zone (OFZ). The other two are the Approach OFZ and the Inner Transitional OFZ. The runway OFZ is the volume of airspace above the surface longitudinally centered on the runway. The elevation of any point on the surface is the same as the elevation of the nearest point on the runway centerline. The runway OFZ extents 200 feet beyond each end of the runway and its width is:

- 300 Feet for visual runways serving small aircraft and for runways with lower than ¾-statute mile visibility minimums. Small airplanes are defined as those of 12,500 pounds or less of maximum certificated take-off weight.
- 250 feet for other runways serving small airplanes with approach speeds of 50 knots or more.
- 120 feet for other runways serving small airplanes with approach speeds of 50 knots or less.
- 400 feet for runways serving large airplanes. This dimensional criterion is applied to Runways 7L-25R and 7R-25L at LAX.

A. <u>Inner-approach OFZ</u>

This criterion only applies to runways with approach lighting systems (ALS) which includes Runways 7R and 25L at LAX.. This is a defined volume of airspace centered on the approach area. The inner-approach begins 200 feet from the runway threshold and extends 200 feet beyond the last light unit of the ALS. This surface raises 50:1 and its width matches the runway OFZ.

B. <u>OFZ Inner-transitional OFZ</u>

This is a defined volume of airspace along the sides of the runway as follows:

- For CAT I runways, the inner-approach raises vertically to a height "H" and the slopes 6:1 out to a height of 150 above the established airport elevation. Runway 7R is and will remain a CAT I runway for this program.

  H=61-0.094S-0-003E

- S equals the most demanding wingspan of the airplanes using the runway, and E equals the runway threshold elevation above sea level. S and E are measured in feet.

- S = 211.4' (B747-400) and E = 118' for Runway 7R.

- For Cat II/III runways, the inner-approach rises to a height "H", and then slopes 5:1 out to a distance "Y" from the runway centerline and then slopes to 6:1 out to a height 150 feet above the established airport elevation. Runway 25L is and will remain a CAT III runway for this program.

  The following formulas are used to compute the values of H and Y:

  H=53-0.13S-0-0022E
  Y=440+1.08S-0.024E

- S = 211.4' (B747-400) and E = 95' for Runway 25L.

Figure 3.2 depicts the components of the runway obstacle free zone.

3.3.5 Runway Object Free Area (ROFA)

The ROFA standard requires clearing the ROFA of above ground objects protruding above the runway safety area edge elevation. Except where precluded by other clearing standards, it is acceptable to place objects that need to be located in the ROFA for air navigation or aircraft ground maneuvering purposes within the ROFA. The ROFA is centered on the runway centerline

3.3.6 Exit Taxiway Design

There are two important considerations of exit taxiway design. The first is the location of the exit taxiway with respect to the distance from the runway landing threshold and the second is the configuration of the exit taxiway. Exit taxiway designs are provided for both Airplane Design Groups established in the geometric analysis, ADG V and VI.

Exit taxiways should be located at intervals along the runway corresponding to the average turnoff points of the airplane design groups using the runway. The objective is to provide free flow of aircraft between the runway and parallel taxiway. Runway capacity is affected by exit taxiway locations since the runway occupancy time (ROT), the average time aircraft occupy the runway, partially dictates the in-trail spacing on final approach.

The type of design of exit taxiways is based upon an analysis of contemplated traffic. There are two principal exit taxiway designs right-angled and acute-angled. The acute-angled taxiway, commonly referred to as the "high speed exit" is used to enhance runway capacity and can accommodate aircraft exiting the runway at higher turn off speeds. On the other hand, right-angled exit taxiways can be constructed at less cost, and when properly located along the runway, they can achieve an efficient flow of aircraft, particularly with slower approach speeds.

A. <u>Right-Angled Exit Taxiways</u>

Figure 3.3 illustrates the configuration for a right-angled exit taxiway. A 30-degree entrance spiral of at least 300 feet long should be provided to facilitate the entrance of aircraft onto the taxiway. Exit speeds on the order of 15 miles per hour (mph) can be achieved with this type of exit.

B. <u>45^{o} Acute-Angel Exit Taxiway</u>

Figure 3.4 illustrates presents the configurations for a 45-degree acute-angled taxiway. This exit taxiway is capable of accommodating exit speeds of up to 40mph. On runways used frequently by aircraft of Approach Category A and B, the FAA recommends this type of exit be located between 1,500 to 2,000 feet from the landing threshold.

C. 30^{0} Acute-Angled Exit Taxiway

This is the so-called high-speed-exit and is illustrated in **Figure 3.5**. To achieve the higher speeds associated with this type of exit, an entrance of spiral of sufficient length should be provided.

D. Spiral Geometry Exit Taxiway

Exit taxiways incorporating spiral geometry and more effective lighting are gaining favor to reduce runway occupancy times for landing aircraft. For this project, spiral exit taxiways facilitate the taxiing movement off the runway and onto the center parallel taxiway. The South Airfield improvements at LAX includes modified high-speed exit taxiways off Runway 7R-25L. For the exit taxiways to be most effective, it is recommended that the runway to taxiway separation be 600 feet, however the Center Taxiway separation from Runway 25L required that this geometry be tailored to the LAX conditions. Generally, the high-speed exit taxiways, as depicted in **Figure 3.6**, provide a wide throat entrance, a long (1,400 foot) spiral approach and generous turning radii.

3.3.7 Airfield Refinement

The current configuration of the South Airfield Improvements is the result of an iterative and collaborative process between several parties, including LAX Operations and LAX ATCT personnel.

The spiral exit taxiways along Runway 7R-25L, exiting to the north onto Taxiway "AC", have been positioned in conjunction with the locations of the cross Taxiways "CC", "T", "P", "N", "K" and "BF". The rational behind the taxiway system layout is to provide holding positions along Taxiway "AC" while allowing simultaneous runway exit operations. **Figure 3.7** provides an illustration of the anticipated holding and taxiing operations.

Aircraft destined to the facilities south of Taxiway "A" can exit Runway 7R-25L via high-speed Taxiway "AG", or Taxiways "N" or "T" for west flow. For east flow, Taxiways "AF" or "F" can be used for exiting aircraft to the south.

The proposed airfield layout, as recommended in the Study Phase is depicted in **Figure 3.8**. The refinements to the airfield layout are depicted in Figure 3-1. The specific refinements are briefly described in the following paragraphs.

The following list reflects some of the major refinements incorporated in the airfield layout.

- Taxiway "BB" which was located parallel to Taxiway "CC" between Taxiways "U" and "CC" has been removed from the project. Taxiway "BB" provided an additional exit taxiway from Taxiway "AC" to Taxiway "B". Its inclusion was not essential to taxiing operations while its removal allowed additional holding or "stacking" of aircraft along Taxiway "AC".
- Cross Taxiways "P" and "N" have been reconfigured for aircraft holding/taxiing operations as mentioned above. Additionally, their locations provide a more direct taxi route onto Taxiway "S" for those aircraft destined to the north airfield.

- The removal of Taxiways "H" and "J" occurred for the same justifications as did the removal of Taxiway "BB". Additionally, the removal of these taxiways from the project lessens the occurrence of taxiing aircraft crossing Runway 7L-25R, resulting in a reduced risk for incursions.
- High-speed exit Taxiway "K", a spiral exit taxiway for aircraft landing on Runway 25L, has been removed from the project in an effort to solidify the necessary components of the taxiway system and to ensure efficient and safe taxiing operations.

3.3.8 Taxiway Fillet Dimensions

Aircraft pilots may negotiate a taxiway turn by judgmental overtsteering or by maintaining the cockpit over the centerline. Judgmental oversteering design results in the least requirement for pavement widening at taxiway intersections. On the other hand, maintaining the cockpit over the centerline reduces the possibility of excursions from the taxiway pavement.

The fillet and lead-in dimensions recommended by the FAA for ADG V and VI are 85 feet and 250 feet, respectively.

Cockpit over centerline tracking criteria was used for designing aircraft entrance and exit turning movements for taxiways located between Runway 7R-25L and Taxiways "AC" and "A". During the design analysis, each runway exit centerline was modeled as either a 150-foot (ADG V) radius or 170-foot (ADG VI) radius right angle, or as a 30 degree spiral. The 170-foot centerline radius was used for right angle taxiways which are anticipated to serve the A-380. These include Taxiways "U", "P", "N" and "F". Each fillet radius design provides for a standard 15 foot edge safety margin as recommended by the FAA.

3.3.9 OFZ Aircraft Tail Penetration

As previously noted, aircraft taxiing on the south airfield are intended to hold along Taxiway "AC". As aircraft perform turning movements from Taxiway "AC" onto the cross taxiways the tail of the aircraft swings outward, closer to Runway 7R-25L. B747-400 and A340-600 turning movements were modeled to determine whether the tail of the aircraft penetrated the OFZ for Runway 7R-25L for each taxiway exiting Taxiway "AC". Although the Boeing B747-400 is determined to be the critical aircraft based on its wingspan (it also has the critical tail height), the Airbus A340-600 has a longer wheelbase and overall length which necessitates determining its impact as well.

Figure 3.9 depicts the cross sectional views for the CAT I and CAT III ends of the runway with a B747-400 holding on Taxiway "AC".

Based on the criteria stated in paragraph 502-d-(5) of AC150/5300-13, the allowable difference in elevation between the runway centerline and parallel taxiway centerline is 1.5 percent of the shortest distance. A 400-foot runway to taxiway separation between Runway 7R-25L and Taxiway "AC" equates to a 6-foot maximum grade differential between the two centerlines. The 6-foot grade separation is reflected in Figure 3.9.

As the aircraft exits to the north via cross taxiways the turning maneuver causes the tail to swing outward in the direction of the runway. **Figures 3.10, 11 and 12** depict the aircraft's turning operations for a 90-degree, 30-degree and spiral exits respectively. The figures include the critical dimension from tail to runway OFZ. Based on this dimension, the elevation of the inner-transitional OFZ was calculated and plotted on the sections in Figure 3.8.

To summarize the results plotted in Figure 3.8, **Table 3-4** below lists the clearances from tail to OFZ for each alternative exit.

TABLE 3-4
OFZ Clearances

Exit Type	CAT I	CAT III
90 degree	10.3'	0.3'
30 degree	13.1'	3.6'
Spiral	15.3'	6.3'

The clearances listed above assume a 6-foot elevation difference between the runway and parallel taxiway centerlines. Upon designing the actual longitudinal grades for the runway and parallel taxiway, the maximum allowable grade difference is approximately 3 feet for locations were a cross taxiway exists. Based on these findings, with Runway 25L (CAT I) the critical runway, the fillet designs for taxiways exiting north from Taxiway "AC" are as follows:

- Spiral exit configurations for all cross taxiways where runway and parallel grade separations are less than 3 feet. These include Taxiways "U", "T" and "P".
- 30-degree taxiways where runway to taxiway grade separations are greater than 3 feet. These include Taxiways "CC", "K" and "BF".
- Vertical alignments have been designed to achieve maximum allowable grade differences between runway and parallel taxiway centerlines.
- Re-evaluate OFZ penetration upon final vertical and horizontal design completion and adjust as required.

3.4 Vertical Controls

Surface gradient standards are used to design the profiles or airport surfaces required for the landing, take-off, and ground movement of aircraft. Surface gradients must allow for flexibility without adversely affecting operational safety. Line-of-sight standards impose additional restraints on surface gradients.

3.4.1 Runways

The longitudinal gradient standards for runways are as illustrated in **Figure 3.13.**

As mentioned in the previous section, the longitudinal grades of Runway 7R-25L are designed to provide the largest allowable grade difference between Runway 7R-25L centerline and parallel Taxiway "AC" centerline thus avoiding tail penetrations into the OFZ. Physical constraints to this approach include drainage and underground utilities as well as bridge elevation requirements at the Sepulveda tunnel crossing.

The structural design of the Runway 7R-25L bridge requires the new runway to match the existing north half of the bridge deck elevations. Existing deck elevations were obtained from the Sepulveda tunnel as-built drawings and available topographic information. The vertical alignment of the relocated Runway 7L-25R was design to meet these requirements and match existing elevations at the tunnel crossing.

3.4.2 Runway Safety Area

The longitudinal gradient standards for runway safety areas included in the South Airfield Improvements are as illustrated in **Figure 3.14.**

3.4.3 Runway Blast Pads

The longitudinal grades for blast pads follow the same grades as the respective safety area.

3.4.4 Taxiways

Gradient standards applied to taxiways based on FAA criteria are as follows:

- Maximum longitudinal grade is 1.5 percent. Longitudinal grades should be kept to a minimum
- The maximum longitudinal grade change is 3 percent and should not be exceeded unless no other reasonable alternative is available.
- When longitudinal grade changes are necessary, parabolic vertical curves should be used. The minimum length of vertical curve is 100 feet for each 1 percent of change.
- The minimum distance between points of intersection of vertical curves is 100 feet multiplied by the sum of grade changes (in percent) associated with two vertical curves (See **Section 3.6, Deviations of Standards**)
- At any point on a taxiway centerline, the allowable difference in elevation between the taxiway and corresponding point on the associated parallel runway, taxiway, or apron edge is 1.5 percent of the shortest distance between the points. For the purposes of this item, a parallel taxiway is any taxiway functioning as a parallel taxiway whether it is exactly parallel or not.

The longitudinal grades for Taxiway “AC” were initially set to be 3 feet minimum below the runway centerline grades to achieve the largest possible difference between the runway OFZ surface and the tail of a taxiing or holding aircraft. The drainage of the east side of the south airfield became a physical constraint to this initial approach. Taxiway “AC” was raised on the east side to ensure airfield drainage, which resulted in and the penetration of the OFZ surface in this area by the tail of the B747-400 by approximately 1 foot or less. The analyses of potential impacts to the OFZ of Runway 7R-25L were discussed previously in subsection 3.3.8.

As with the runway, Taxiway “AC” elevations have specific bridge elevation requirements at the Sepulveda tunnel crossing. The bridge design requires a minimum of 38 inches from Taxiway “AC” surface to the existing bridge deck. The vertical alignment of Taxiway “AC” reflects these requirements.

3.5 Grading Requirements

3.5.1 Runway and Taxiway Transverse Grades

Figure 3.15 illustrates the transverse gradient standards for the runways and taxiways on the south airfield, including the safety areas

Runway 7R-25L and the south airfield taxiways have been designed with a crown of 1.5% transverse grade from the centerline to the edge of runway or taxiway except for transition areas needed to match existing grades and at intersections. Beyond the edge of taxiway, the shoulder grades are 1.5% and the respective safety areas will vary from 1.5% to 3%. Grades have been designed such that grading and impacts to existing structures are minimized, while ensuring adequate drainage and pipe coverage.

3.6 Deviations To Standards

3.6.1 Taxiway Longitudinal Grades

The centerline of the parallel taxiway, Taxiway "AC", is located 400 feet from the centerlines of Runways 7L-25R and 7R-25L, which leaves a distance of 262.5 feet from edge of taxiway to edge of runway. It is not physically possible to meet the vertical curve length criteria stated above for the majority of the cross taxiways. In many cases the vertical curve lengths are less than the minimum required, but not less than 100 feet. Although minimum vertical lengths are not always achievable, curves have been designed to ensure smooth grade transitions for taxiing aircraft. Alternative methods, such as asymmetrical vertical curves, will also be considered.

3.6.2 Runway Line-of-Sight

Per FAA recommendations, for runways which have a full length parallel taxiway, the runway profile may be such that an unobstructed line of sight will exist from any point five feet above the runway centerline to any other point five feet above the runway centerline for one-half the runway length.

In an effort to meet other design criteria mentioned in this section, the profile for Runway 7R-25L does not meet the line-of-sight recommendations. Because the deviations are less than substantial and the runway is controlled the line-of-sight recommendations need to be as restrictive.

3.6.3 Runway Transverse Grades

As mentioned in the previous section, the vertical alignment for Runway 7R-25L across the Sepulveda tunnel is controlled by the bridge design requirements. The runway profile and cross slope needs to match the existing bridge deck slope at this location. The proposed crown of the runway no longer coexists with that of the existing bridge. The crown of Runway 7R-25L needs to be transferred to the north edge of pavement in order to match the existing cross slope. The standard 1.5% runway crown slope will be transitioned before and after the bridge section accordingly.

4.0 PAVEMENT DESIGN

4.1 Introduction

This section discusses the development of detailed pavement section alternatives for both full-strength and shoulder sections for Runway 25L and Taxiway AC, and for temporary sections for connecting taxiways as needed to accommodate construction. It assumes standard construction techniques and FAA materials, and assumes that a primary goal is the simplification of the constructed section to allow the most expeditious construction. As discussed in Section 11, limited duration construction restrictions might necessitate special high early strength materials or other special construction techniques which carry intrinsic risks. Both Asphalt Concrete (AC) and Portland Cement Concrete (PCC) sections were generated for the permanent pavement sections. Shoulder and temporary pavements are assumed to be flexible pavements.

The specific pavement alternatives considered, using various combinations of the following standard paving materials, and the recommended Sections, are discussed in Section 4.4. Standard paving materials considered are listed in the follow table:

TABLE 4.1
Standard Paving Materials

Surface Course	Base/Subbase Course	Subgrade Improvements
Portland Cement Concrete (PCC) FAA P-501	Subbase FAA P-154	None
Asphalt Concrete FAA P-401	Crushed Aggregate Base FAA P-209	Import FAA P-154
	Asphalt Stabilized Base FAA P-401	Lime-treated FAA P-155
	Cement Treated Base FAA P-304	Soil-Cement FAA P-301
	Econocrete Base FAA P-P306	Cement Treated Base FAA P-304
		Econocrete Base FAA P-306

4.2 Design Criteria

The two major design criteria for any pavement design are existing subgrade strength properties, and forecasted expected traffic loads. Subgrade conditions are discussed in **Section 4.3**

Forecasting of future traffic loading is both very important and very difficult for any airfield pavement design effort. In this case, the traffic considerations are complicated by the pending introduction of the Airbus A-380. At 1.3 million pounds, and with a complex gear configuration, this aircraft will begin service several years into the design life, and the operations will undoubtedly increase as a percentage of the fleet mix over the years. The inclusion of this aircraft will have important pavement design ramifications. The 40-year design life – longer than the normal 20-year design life – also complicates efforts to forecast traffic.

Because of these factors, a multi-step approach was taken in the determination of the design fleet mix and number of forecast operations for pavement design purposes. The actual calculations consist of the following steps:

- ♦ Historical traffic counts from Runway 25L for the Year 2000 were used to determine a baseline number of operations and a percentage split between 12 different aircraft groups (based on weight and gear configuration).

- ♦ The total annual number of operations from this baseline year was linearly increased from the baseline to a level of 725 per day for the year 2015. This number corresponds to the high Master Plan Alternative D estimate of 2,900 operations for four runways.

- ♦ The Airbus A-380 was introduced into the mix in the year 2006, in a number which, when a 3% annual increase is applied, will result in 16 daily operations in the year 2012. 16 daily operations correspond to the Master Plan estimates of terminal requirements for A-380 equipment for 2012.

- ♦ The 3% per year increase in A-380 operations was applied throughout the remainder of the 40 year design life, with the total number of operations held constant at 725 per day. The forecast operations of other aircraft were decreased, in proportion to their percentage of the fleet mix, to hold the total constant. This total was considered to represent an approximation of the physical capacity of the runway.

- ♦ It should be noted that these total operations numbers correspond approximately with FAA's TAF estimates of 243,308 (for one runway) for the year 2020.

- ♦ The estimates for each of the 40 service years were then summed, and divided by 40, to generate an average annual number of operations per year, for thirteen distinct aircraft. These summary values are shown in **Table 4-2**, and were used as the traffic input into the LEDFAA pavement design program.

- ♦ To forecast traffic for the temporary pavements (taxiway pavement to accommodate construction phasing) a two year design life was assumed.

- ♦ Shoulder designs were checked against a one year trafficked design life.

TABLE 4-2
Aircraft Traffic Summary

Aircraft Group	Aircraft	Avg. Annual Ops
1	B737-300	38,714
2	A-320	21,018
3	B727-200	4,042
4	MD-80 Series	22,451
5	B767-300	19,646
6	B757-200	36,441
7	DC-10/MD-11	10,585
8	B777-200	3,289
9	B747-400	10,366
10	Fokker 100	3,650
11	Brasilia EMB-120	77,802
12	A-340	970
13	A-380	8,456

4.3 Existing Subgrade Conditions

Figure 4.1 shows a graphical representation of the California Bearing Ratio (CBR) test results from Ninyo and Moore's September 2003 geotechnical investigation. These tests were done in the vicinity of the Runway 25L reconstruction. The figure and resulting tests shows that the project limits are divided into two distinct subgrade conditions.

East of a line approximately delineated by Sepulveda Boulevard are low strength silts and clays of very low CBR. West of Sepulveda Boulevard, with one exception (H-14), soils are of a sandy nature and exhibit medium CBR values. For design purposes, two design CBR design values were therefore calculated and are presented in **Tables 4-3 and 4-4**. These design values, as is standard procedure, are calculated as the mean minus one standard deviation. This value is generally held to represent the 85th percentile – that is, that value for which 85 percent of locations will be of this CBR or higher.

Table 4-3 CBR – East Side			
Test Hole	Station	Offset	CBR
H-18	2+40	550	7
H-3	3+80	-190	2
H-17	13+90	520	2
H-4	16+70	-350	2
H-16	24+10	550	2
H-15	41+20	270	2
H-14	62+50	550	2
H-5	45+90	-240	2
Average			**2.63**
Standard Deviation			**1.77**
84th Percentile			**0.86**
Use CBR of 2 (k=25/E=3,000)			

Table 4-4 CBR – West Side			
Test Hole	Station	Offset	CBR
H-6	57+00	-380	35
H-7	72+80	-315	14
H-13	79+40	330	21
H-8	83+20	-210	10
H-12	87+50	440	36
H-9	102+10	-200	45
H-11	104+30	230	12
H-10	118+30	530	31
Average			**25.5**
Standard Deviation			**13.0**
84th Percentile			**12.5**
Use CBR of 12 (k=25/E=10,000)			

It is highly desirable, for construction expediency purposes, to have a uniform section throughout the project. However, the disparity between subgrade support values in the two project areas makes this approach uneconomical. High subgrade support requirements of the easterly end of the project would result in severe overbuilding in the western portion of the project. However, if the subgrade in the eastern section of the project is stabilized or otherwise improved to bring it to the strength level of the western section, a standard pavement section can be utilized for surfacing and base. With this in mind, design alternatives have been generated for the western limits, west of Sepulveda, with the additional requirement of a subgrade treatment layer for the eastern portion of the project.

Because of this two-section approach, it is important that the boundary between weak and strong subgrade be better defined. Figure 4.1 shows a dotted line where this dividing line is assumed to be located. It is recommended that additional CBR be performed between stations 45+00 and 60+00 to attempt to better determine this line of demarcation.

4.4 Airfield Pavement Alternatives

Seven full-strength design alternatives were generated for the 40 year design period – four rigid pavement sections and three flexible sections. All results shown are for the western project limits as determined using the FAA's LEDFAA 1.3 design methodology. Design inputs are the traffic as summarized in Section 4.2, for a 40-year design period, with input subgrade moduli of E=10,000 psi (K=100). The results of these designs are shown in **Table 4-5**.

TABLE 4-5
Full Strength Pavement Section Alternatives

Section Name	Surface Course	Base Course Type	Subbase
F501-209	20.5" P501 PCC	12" P209 Cab	None
F501-304	19" P501 PCC	12" P304 CTB	None
F501-306	18.5" P501 PCC	12" P306 Econocrete	None
F501-401-154	18.5" P501 PCC	12" P401 AC	12" P154 Subbase
F401-209-154	5" P401 AC	12" P209 CAB	39" P154 Subbase
F401-304-154	5" P401 AC	12" P304 CTB	35" P154 Subbase
F401-306-154	5" P401 AC	12" P306 Econocrete	34" P154 Subbase

Note: CAB = Crushed Aggregate Base
CTB = Cement Treated Base

For the eastern section pavements, the conventional FAA design methodology indicates that ten (10) inches of P-304 Cement Treated Base or P-306 Econocrete be required to bring the eastern section Modulus of Reaction (K) of 25 up to 100 of the western section. Alternately, laboratory testing of the eastern section soils should be undertaken to determine the specifics, including layer thickness, of P155 Lime-Treated Subgrade, or P301 Soil Cement.

For shoulder pavements, three flexible pavement section alternatives were developed, as shown in **Table 4-6**. As with the full strength pavements, these sections are for pavement west of Sepulveda Blvd. East of Sepulveda Blvd., the additional treatment of the subgrade, to bring the K-value to 100, similar to the full strength pavement, should be constructed.

TABLE 4-6
Temporary Pavement Section Alternatives

Section Name	Surface Course	Base Course Type	Subbase
T401-209-154	5" P401 AC	12" P209 CAB	26" P154 Subbase
T401-304-154	5" P401 AC	12" P304 CTB	27" P154 Subbase
T401-306-154	5" P401 AC	12" P306 Econocrete	12" P154 Subbase

Likewise, subgrade improvement to K equal to 100 will be required for eastern area shoulder pavements. The basic section alternatives (above the improved subgrade in the east and above native subgrade in the west) for shoulder pavements are shown in **Table 4-7**.

TABLE 4-7 Shoulder Pavement Section Alternatives			
Section Name	Surface Course	Base Course Type	Subbase
S401-209-154	4" P401 AC	8" P209 CAB	30.5" P154 Subbase
S401-304-154	4" P401 AC	8" P304 CTB	26.5" P154 Subbase
S401-306-154	4" P401 AC	8" P306 Econocrete	25.5" P154 Subbase

4.5 Airfield Pavement Section Recommendations

4.5.1 Recommended Pavement Sections

Relative costs were generated on a slab basis for all alternatives. **Table 4-8** lists these approximate costs, based on a 20 foot x 20 foot area, for west side pavement alternative designs. The numbers only include costs for earthwork and paving materials which differentiate one alternative from another. Cost such as mobilization, electrical, and other incidental costs were not included. It can be seen that the cost differential between the lowest cost alternative and the highest is not that wide.

TABLE 4-8 Relative Construction Costs (20x20 Slab)		
Alternative Name	Estimated Construction Cost	Percent over Base Line
F-401-209-154	$3,927.18	-----
F-401-304-154	$4,197.55	7%
F-501-209	$4,341.43	11%
F-401-306-154	$4,445.69	13%
F-501-304	$4,504.94	15%
F-501-306	$4,749.39	21%
F-501-401-154	$5,334.02	36%

Although construction costs are always an important consideration, for this project, speed and simplicity of construction, plus expected service life of the pavement are considered to be much more important. For several reasons, which are discussed below, it is therefore recommended that the Alternative F-501-306 be adopted. This section would apply to both Runway 25L and Taxiway AC. Rounding the surface thickness from 18.5 to 19 inches is recommended as an additional safety factor above the calculated design results:

4.6 Recommended Sections

4.6.1 Full Strength Runway and Taxiway AC West Side Pavements:

Alternative F501-306:

19 inches P501 PCC
12 inches P306 Econocrete

4.6.2 Full Strength Runway and Taxiway AC East Side Pavements:

Alternative F501-306:

19 inches P501 PCC
12 inches P306 Econocrete
10 inches P306 Econocrete

4.6.3 Runway Shoulders - West Side:

Alternative S401-209-154:

4 inches P401 AC
8 inches P209 Cr Aggr Base
Filter Fabric
31 inches P154 Subbase

4.6.4 Runway Shoulders - East Side:

Alternative S401-209-154:

4 inches P401 AC
8 inches P209 Cr Aggr Base
Filter Fabric
31 inches P154 Subbase
10 inches P306 Econocrete (form-placed acceptable)

4.6.5 Temporary Taxiway West Side Pavements:

Alternative T401-209-154:

5 inches P401 AC
12 inches P209 Cr Aggr Base
Filter Fabric
26 inches P154 Subbase

4.6.6 Temporary Taxiway East Side Pavements:

Alternative T401-209-154:

5 inches P401 AC
12 inches P209 Cr Aggr Base
Filter Fabric
26 inches P154 Subbase
10 inches P306 Econocrete (form-placed acceptable)

4.6.7 Discussion of Recommended Alternatives

It is recommended that paving of both the P306 Econocrete and the P501 PCC be accomplished utilizing slip form paving methods. The potential for high productivity utilizing slip form paving techniques is one of the primary reasons for selection of this Alternative. The selection of an

Alternative with stabilized base course is recommended in consideration of the introduction of the NLA equipment.

The selection of an Alternative which uses the same material for both subgrade improvement and for stabilized base course is considered to be a good investment in construction efficiency. By eliminating the number of materials used in the pavement section, it is felt that improvement in Contractor proficiency, as the project progresses, can significantly reduce the construction schedule. The early construction of the 10 inch subgrade layer in the eastern project area can provide the Contractor with the opportunity to build efficiency and consistency in portions of the project which are less critical (finishing techniques, imperfections in the materials, mix, etc.) than when in the construction of the base layer itself.

In order to minimize the possibility of reflected shrinkage cracking from the Econocrete, it is mandatory that a bond breaker layer be constructed between the Econocrete layer and the P501 wearing course. For this purpose a proprietary paraffin-based bond breaker could be used, although further research is recommended in the possible use of a two to three inch layer of open-graded P401 asphalt, using a softer than normal binder. A review of project experience on this topic is underway.

4.6.8 Other Recommendations

As the project development continues to be refined, several materials changes might be considered. One suggestion is that crushed materials from the demolition of the runway be considered as a substitute for the econocrete subgrade improvement layers in the eastern segment of the project. This could be adopted for full strength, shoulder and temporary pavements. The depth of placement will need to be determined after construction is underway and samples of the crushed materials are available for laboratory testing. Estimates of performance properties can then be determined.

So far as possible, it is highly recommended that paving materials be restricted to standard materials. For example, designs discussed and presented herein are predicated on 650 psi concrete. Higher strength P501 could reduce layer thicknesses, but because of the potential for construction materials complications, shrinkage cracking, etc., this is not recommended. However, it is recommended that the P-501 specification be modified to minimize the potential for alkali silica reactions by placing tighter restrictions on properties of the chemical components of the cementitious materials.

While it would introduce another material into the construction effort, the suitability of using P-155 Lime Treated Subgrade, or P-301 Soil Cement, for stabilization of the eastside subgrades should be pursued in the laboratory. These methods, if appropriate for the in-situ materials, would reduce the amount of excavation, and may thus provide some construction schedule benefits. Success of these materials is very dependent upon the suitability of the native soils and further investigation is underway to determine if they may be candidates.

Finally, as discussed in Section 4.3, further testing is recommended to better delineate the boundary between the weak and stronger subgrade soils areas.

5.0 DRAINAGE AND UTILITIES

5.1 Introduction

This section of the report addresses the following:

- The proposed drainage system required to accommodate the reconfiguration of Runway 7R-25L including an assessment of the existing storm drain systems in the South Airfield and surrounding areas; and,
- Utility relocations required by the runway reconfiguration.

5.2 Existing Conditions and Drainage Systems

5.2.1 Existing Conditions

In general, runoff within the South Field is divided into three watersheds (A, B, and C) as shown in **Figures 5.1**.

Watershed 'A' is made up of the eastern one-third of the South Field from the Sepulveda Tunnel to Taxiway F. Watershed 'B' extends from the centerline of Taxiway N to the Sepulveda Tunnel. Watershed 'C' is made up of the western one-third of the South Field from Taxiway U to Taxiway N. The watersheds are comprised of smaller tributary areas that are defined by ridge lines (generally the centerlines of runways and taxiways) which, in turn, form a small basin in the infield areas made up of paved swales and catch basins. Each watershed discharges to an outfall which is under the jurisdiction of the Los Angeles County Flood Control District.

- Watershed A (**Figure 5.2**)
  The outfall for this watershed is an 8 foot by 8 foot reinforced concrete box (RCB) culvert located south of Taxiway A. The box culvert flows east where it joins another 8 foot by 8 foot RCB that is the southerly extension of the Dominguez Channel, a concrete-lined trapezoidal channel parallel to the MTA rail line along Aviation Blvd. The box culvert flows south and is part of the Dominguez Channel Watershed. Surface runoff within the watershed is collected via a series of paved swales and closed pipe systems before being discharged to the concrete-lined channel.

- Watershed B (**Figure 5.3**)
  The outfall for this watershed is a reinforced concrete box culvert which increases in size from 3'-0" by 2'-3" to 4'-3" by 4'-6" to 5'-6" by 4'-6" RCB located along the west side of Sepulveda Boulevard. This RCB flows north and ultimately discharges into the Argo Channel which contributes to the Santa Monica Bay Watershed. Surface runoff within the watershed is collected via a series of paved swales and closed pipe systems before being discharged to the reinforced concrete box culvert.

- Watershed C (**Figure 5.4**)
  The outfall for this watershed is an 8'-6"wide by 10'-0" high RCB that cuts diagonally through the South Airfield (from northeast to southwest). This RCB flows west into the Santa Monica Bay Watershed. Surface runoff within the watershed is collected via a series of

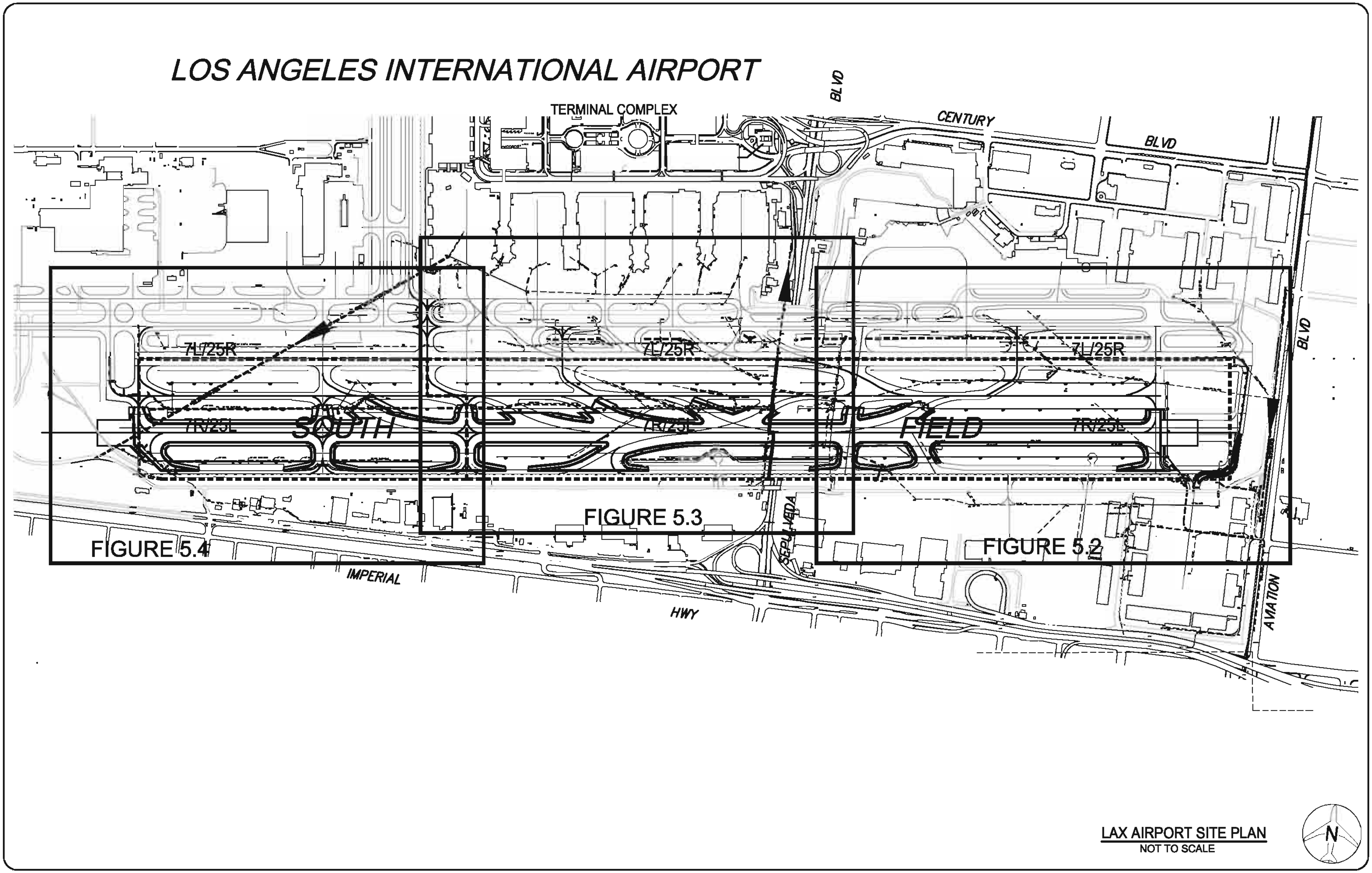


FIGURE 5.1

DRAFT 9/26/03

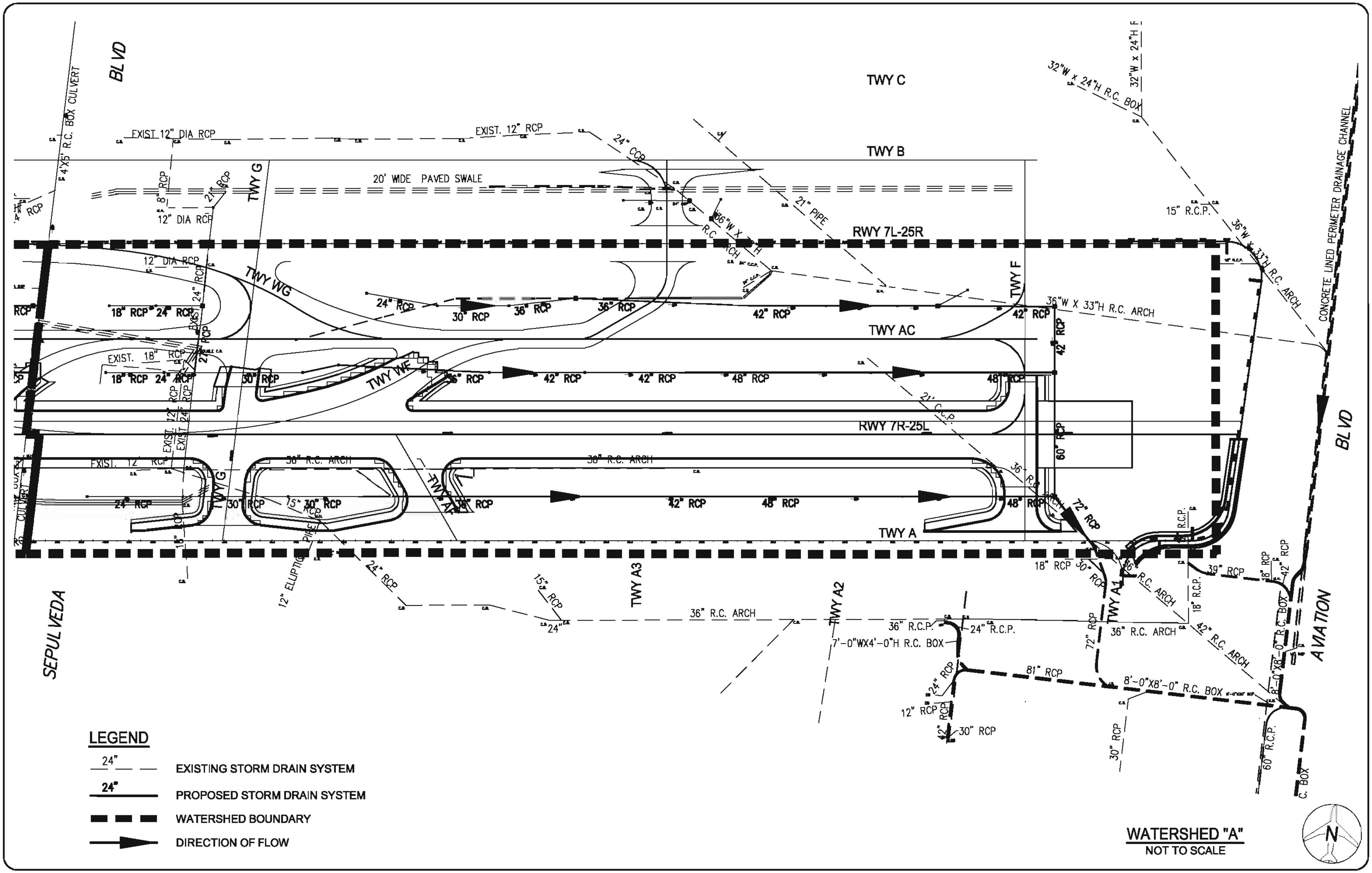

TWY C
TWY B
RWY 7L-25R
TWY AC
RWY 7R-25L
TWY A
TWY F
TWY G
TWY WG
TWY WE
TWY A3
TWY A2
TWY A1
SEPULVEDA
BLVD
AVIATION
BLVD
20' WIDE PAVED SWALE
CONCRETE LINED PERIMETER DRAINAGE CHANNEL
LEGEND
EXISTING STORM DRAIN SYSTEM
PROPOSED STORM DRAIN SYSTEM
WATERSHED BOUNDARY
DIRECTION OF FLOW
WATERSHED "A"
NOT TO SCALE

FIGURE 5.2

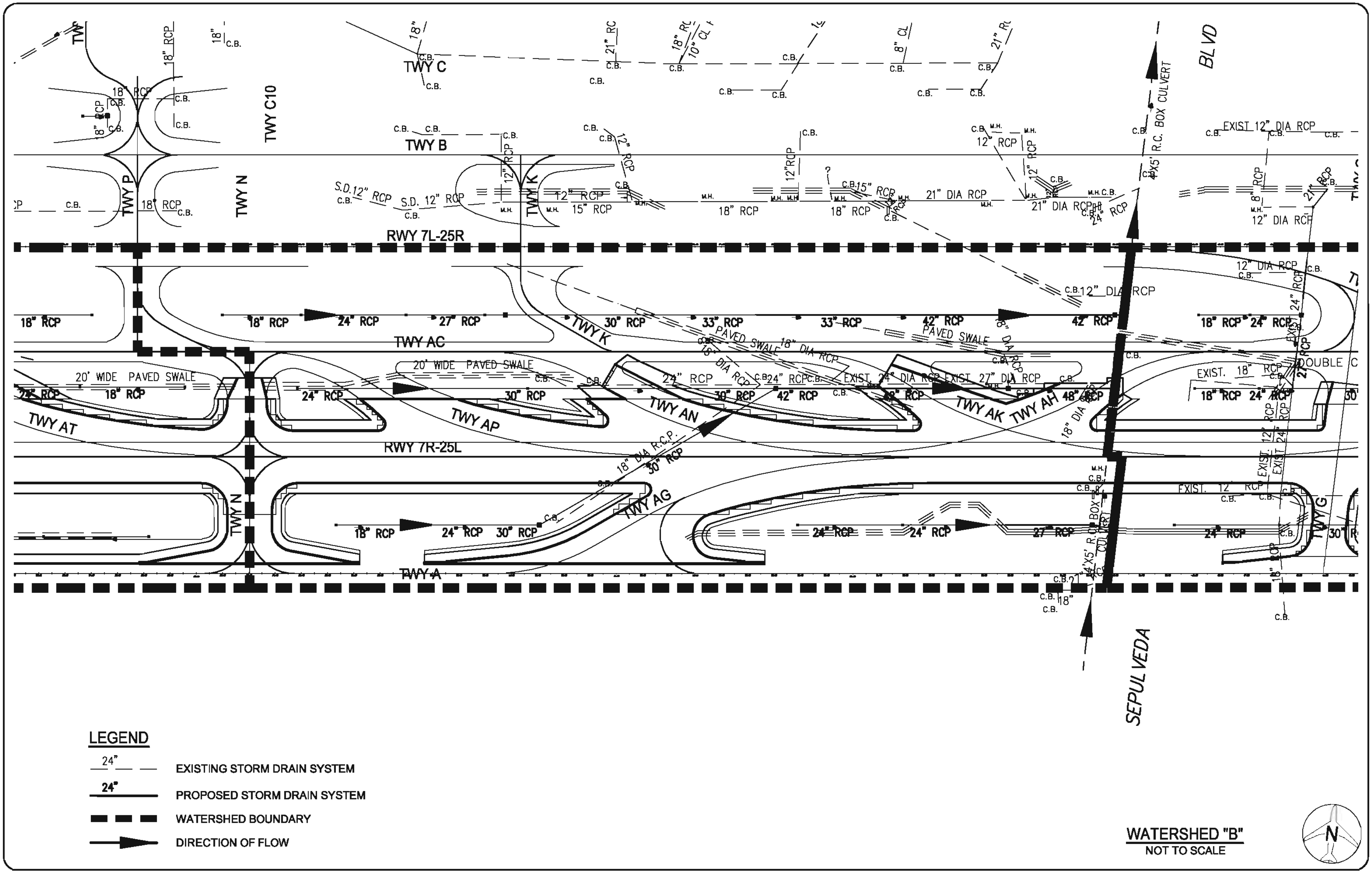

TWY C
TWY B
TWY C10
TWY N
TWY P
TWY K
RWY 7L-25R
TWY AC
TWY AT
TWY AP
TWY AN
TWY AK
TWY AH
RWY 7R-25L
TWY AG
TWY A
TWY G
BLVD
SEPULVEDA
4'X5' R.C. BOX CULVERT
20' WIDE PAVED SWALE
PAVED SWALE
18" RCP
24" RCP
27" RCP
30" RCP
33" RCP
42" RCP
48" RCP
21" DIA RCP
EXIST. 12" DIA RCP
EXIST. 24" DIA RCP
EXIST. 27" DIA RCP
18" DIA R.C.P.
C.B.
M.H.
LEGEND
24"
EXISTING STORM DRAIN SYSTEM
24"
PROPOSED STORM DRAIN SYSTEM
WATERSHED BOUNDARY
DIRECTION OF FLOW
WATERSHED "B"
NOT TO SCALE
N

FIGURE 5.3

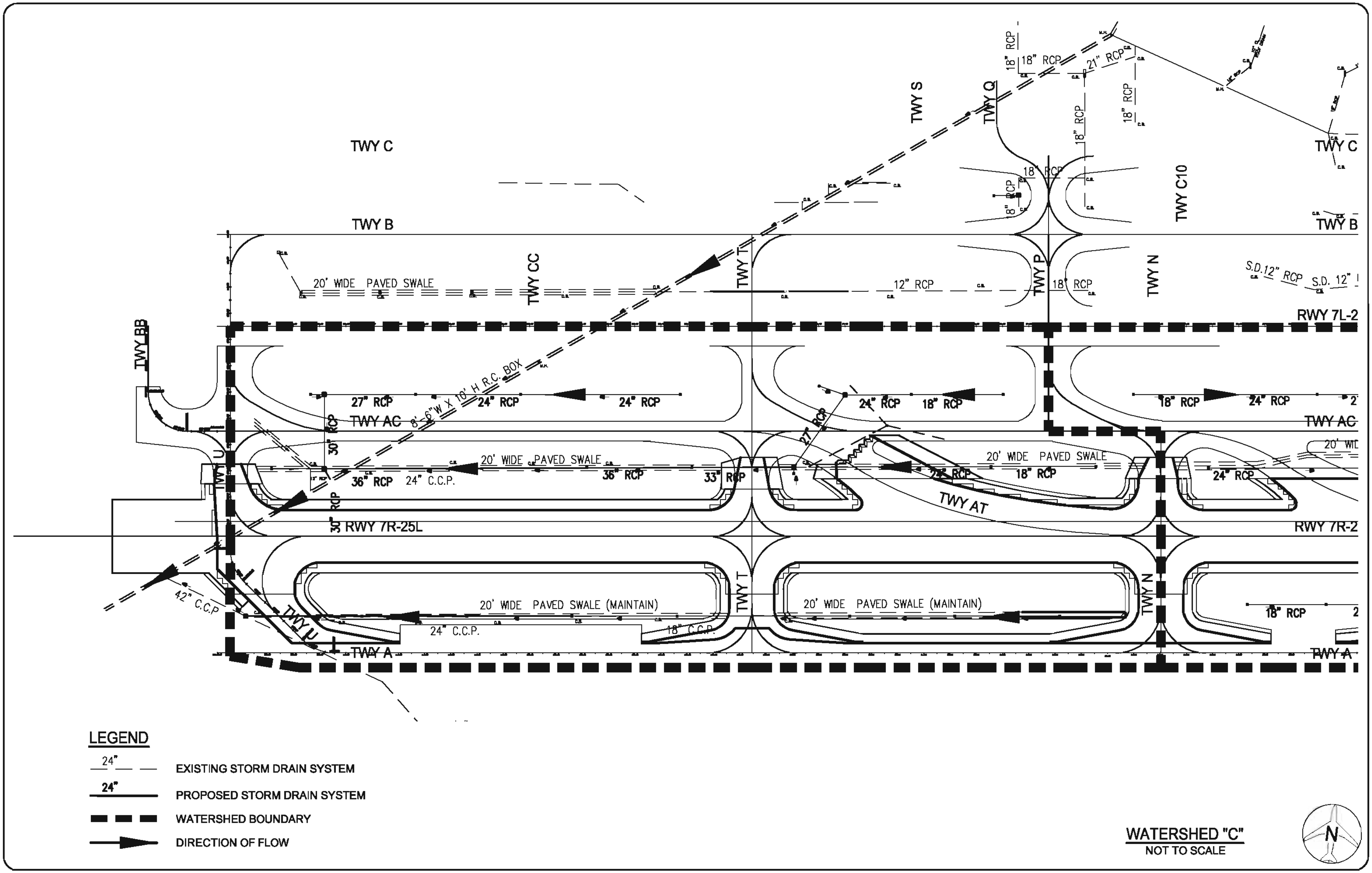


FIGURE 5.4

DRAFT 9/26/03

paved swales and closed pipe systems before being discharged to the reinforced concrete box culvert.

5.2.2 Historical Flooding

According to LAWA maintenance personnel, the east end of the runway experiences occasional flooding near the concrete-lined channel along Aviation Blvd. Within the Watersheds B and C, there is occasional localized flooding in some of the infield areas. This has been attributed to debris buildup in the existing drainage inlets.

5.2.3 Existing Studies

As part of the LAX Master Plan, LAWA had an airport-wide hydrology study prepared. This report, *Final On-Site Hydrology Report for Los Angeles International Airport* (by PBQD, Oct 18, 2002), identified existing drainage facilities, evaluated existing hydrologic conditions, and projected future hydrologic conditions for master plan improvements within the LAX boundaries. Conceptual drainage improvement plans for LAX onsite drainage systems were developed to accommodate future airport layout, facilities, and land uses identified in the LAX Master Plan. The design of future drainage systems for this report is based on a 50-year frequency storm.

The purpose of this report is to develop budgeting, programming and construction scheduling of storm drain system improvements to meet future construction needs at LAX.

The report concludes that future drainage improvements, which are designed to a 50-year recurrence interval, exceed the capacity of drainage systems downstream of the airport such as the Dominguez Channel and the existing drainage system on World Way West (Santa Monica Bay Watershed). Therefore, detention basins must be constructed as part of the airport's drainage improvements to handle 50-year flows unless the downstream systems are upgraded to accommodate 50-year events.

5.3. Methodology and Design Criteria

5.3.1 Design Guidelines

The proposed storm drain systems is to be designed according to the Los Angeles County Department of Public Works' (LACDPW) *Hydrology Manual* (December, 1991), Modified Rational Method. LACDPW has made modifications to the traditional rational method for determining runoff to account for variations in runoff coefficients, time of concentration, and soil conditions. Systems will be designed to accommodate a 25-year design storm.

5.3.2 Methodology

The proposed storm drain system will be designed to accommodate the ultimate runway/taxiway configuration for the South Field. Whenever possible, the existing storm drain system will be used. However, due to the more stringent storm drain criteria established for this project (i.e., 25-year design storm); larger-diameter pipe will replace the existing systems in many cases to accommodate the higher design flow rates. <u>The design assumes there is no downstream tailwater condition</u>. The larger flow rates impact both hydrology and water quality issues and are intended to satisfy the Master Plan commitments. However, construction requirements for this project will implement the current Best Management Practices (BMP's) to control sedimentation and environmental pollutants.

5.3.3 Design Criteria

Some of the key design criteria used in the Modified Rational Method are described as follows:

A. Rainfall Zones

Per Appendix A of the *Hydrology Manual*, the project falls within rainfall zone "K" for coastal plain conditions which corresponds to a 24-hour rainfall of 3.91 to 6.40 inches for a 25-year storm frequency.

B. Soil Classification

The soil type for the project falls into soil types "009", "010" and "014" as identified in the LACDPW design manual.

C. Time of Concentration (t_c)

Times of concentration are computed using an iterative procedure based on unburned, unbulked flow velocities and flow path lengths. The minimum t_c is 4 minutes; the maximum t_c is 30 minutes for any given tributary area.

D. Runoff Coefficients (c)

Runoff coefficients are developed for each tributary area based on the imperviousness of the soil, soil type, and the rainfall intensity.

5.4 Proposed Drainage Improvements

5.4.1 Proposed Layout

Watersheds A, B, and C for the proposed project mimic the existing watersheds described in Section 5.2 except that the ridge lines are moved south according to the reconfiguration of the runway. For limits of the watersheds, see Figures 5.2 through 5.4. Runway and taxiway pavements will be crowned to drain to infield areas between runways. Infield areas will be graded at approximately two percent slopes from the edge of shoulder.

5.4.2 Proposed Drainage Improvements

The layout of the proposed drainage system is very similar to the existing system. Runoff is collected via a system of paved swales, catch basins, and underground pipes. Watersheds A, B, and C will continue to drain to their current outfall locations. Volume II includes a series of drawings illustrating the proposed drainage improvements as well as the anticipated drainage tributary areas. Further, these drawings also report the run-off quantities for each area based on a 25-year frequency storm rainfall event.

It is believed that the existing drainage systems were designed for a 10-year design storm. With the proposed project calling for a 25-year design storm, some of the existing facilities are undersized and require upgrading.

5.4.3 Design Flows

Preliminary hydrologic calculations are made according to LACDPW's Modified Rational Method as described in Section 5.3.1. Runoff volumes are computed and pipes initially sized. Tabulation of the runoff calculations (including the times of concentration, area, runoff coefficients and rainfall intensity) and pipe flows are presented as **Appendix D** in Volume III.

5.5 Utilities

5.5.1 Overview

In addition to the storm drain network in the South Airfield, there are major utilities located throughout the project site. Fuel, fiber optic duct banks, electrical power, sanitary sewer, transmissometer cable, water, crude oil, and natural gas lines cross the site. The following list describes the major utilities within the project limits:

A. Longitudinal (east-west) Utilities

- FAA Transmissometer Cable (Concrete Encased)
- FAA Direct Buried Cable
- FAA 4" Galvanized Conduit
- FAA (VASI – Lighting Cable)
- 10" Crude Oil Line (Shell Oil Co.)
- 3-4" Standard Oil Lines
- 21" VCP Sanitary Sewer

B. Transverse (north-south) Utilities

- 12" Water Line
- 10" Crude Oil Line (Shell Oil Co.)
- 4" Gas Line
- 8" Crude Oil Line (Standard Oil Co.)
- 6" Product Line (Standard Oil Co.)
- 3" Natural Gas (Standard Oil Co.)
- 3-4" Standard Oil Pipelines
- 16-3" Concrete Encased Duct Bank (Power)
- 3-4" Fiber Ducts (Power)
- 4-3" Fiber Ducts (Telephone)
- 3-4" Standard Oil Pipelines
- 8" Sanitary Sewer
- 21" Sanitary Sewer
- Pump Station (Abandoned)
- 14" LAX Fuel Line (26" Casing)

In addition to the utilities mentioned above, aviation utilities include airfield lighting and signing, airfield lighting control system, and landing and navigational aids.

5.5.2 Potential Utility Conflicts

The proposed storm drain system crosses existing utilities at several locations throughout the site. Until a compilation of existing utilities is developed, it is uncertain if existing utility lines are impacted or not.

Early indications are that some proposed drainage lines may be crossing FAA cables buried at several locations throughout the site. Although it is anticipated that the FAA cables are typically shallow so that the new drainage lines will most likely pass under them, the vertical geometry of the cables must first be confirmed via additional utility surveys (as-builts and/or field verification).

In Watershed A, the proposed drainage lines cross existing sanitary sewers. Additional as-built data are needed in order to determine if conflicts exist. The subsequent design phase of the project will explore this in more detail.

Within Watershed B, there are potential conflicts between the proposed drainage lines and a corridor of utilities that parallel the west side of the Sepulveda Tunnel. The corridor includes a 10 inch crude oil line (Shell Oil), a 12 inch water line, an 8 inch crude oil line (Standard Oil), an 8 inch gas line (Standard Oil), a 6 inch product line (Standard Oil), and a 3 inch gas line. These potential crossings will be examined closely given that relocating oil and product-related lines can be more sensitive than other utilities. More information (as-builts) is needed about the lines before any impacts can be determined.

Also within Watershed B, the upper reaches of the proposed drainage lines cross an existing 12 inch water line. The crossings will be studied in more detail during the subsequent design phase.

6.0 AIRFIELD LIGHTING AND POWER DISTRIBUTION SYSTEM

6.1 Introduction

This section defines the design procedure and criteria used to develop the airfield lighting, signage and power distribution systems required for the project as defined in **Section 1.0 - Introduction** of this report. The existing airfield lighting, signage and power distribution systems are addressed in this section along with proposed improvements.

6.2 Design Criteria

The proposed runway/taxiway lighting and signage system and power distribution system are designed to conform to the latest editions of the following standards.

6.2.1 FAA Advisory Circulars (AC's)

The FAA Advisory Circulars pertaining to this project are listed below:

FAA AC 150/5340-18	Standards for Airport Signage System
FAA AC 150/5340-19	Standards for Taxiway Centerline lighting System
FAA AC 150/5340-24	Runway and Taxiway Edge Lighting System
FAA AC 150/5340-28	Low Visibility Taxiway Lighting System
FAA AC 150/5340-46	Specification for Runway and Taxiway Lighting System
FAA AC 150/5345-2B	Standards for In-Pavement Runway Guard Lights
FAA AC 150/5345-7D	Standards for Underground Electrical Cables L-824
FAA AC 150/5345-10E	Standards for Constant Current Regulators L-828
FAA AC 150/5345-26C	Standards for Cable Connectors L-823
FAA AC 150/5345-42C	Specifications for Airport Light Bases
FAA AC 150/5345-44F	Standards for Taxiway and Runway Signs L-828
FAA AC 150/5345-46	Standards for Runway and Taxiway Edge Light Fixtures including FAA LED Requirements, Document-2001
FAA AC 150/5345-46B	Standards for Runway Centerline Lights
FAA AC 150/5345-47A	Standards for Isolation Transformers for Airport Lighting Systems L-830
FAA AC 150/5345-53	Standards for Airport Lighting Equipment Certification
FAA AC 120-57A	Standards for Surface Movement Guidance and Control System
FAA AC 70/7460-1H & FAA 120/5345-43E	Standards for Obstruction Lighting System

6.2.2 Other Codes and Regulations

National Electrical Code (NEC)
City of Los Angeles, Building Safety Code (Electrical)
Underwriters Laboratories (UL) Listing Requirements for AFL Products

6.2.3 As-Built/Record Drawings

Table 6-1 presents a list of the As-Built drawings that were used to gather information for the definition of existing conditions.

TABLE 6-1
As-Built and Record Drawings

Project Name	Project Date	Consultant	LAWA Drawing No.
Airfield Runway Guard Lights	January 6, 2003	CALPEC Engineering	98052-240
Southside Taxiways WG, WF & T	October 12, 2000	HNTB Corporation	93016-243
Airfield Signage & Lighting Phase 2	May 9, 1995	HNTB Corporation	94048-301
Runway 25L Reconstruction	August 30, 1984	LOS Angeles World Airport (LAWA)	LAWA 83006-301

6.3 Scope of Electrical Design

6.3.1 Airfield lighting improvements

- Removal of the existing Runway 7R-25L threshold, touchdown zone, centerline and edge lighting fixtures.
- Removal of the affected existing Taxiways A, A7, F, G, H, J, K, M, N, P, T, U, WG, WU WF, and WG, centerline and edge lighting fixtures.
- Removal of signs associated with the existing Runway 7R-25L and Taxiways A, A7, F, G, H, J, K, M, N, P, T, U, WF, and WG, in the area of construction activity.
- Removal or alteration of existing maintenance holes, hand holes, pull boxes, and duct banks that cross the existing Runway 7R-25L, Taxiways A, A7, F, G, H, J, K, M, N, P, T, U, WF, and WG and the adjoining construction area.
- Removal of 5kV series circuit cables and ducts associated with the demolition work described above.
- Installation of Category III precision approach lighting system for the realigned Runway 25L and Category I for Runway 7R. (See Section 8 details)
- Installation of runway threshold/end lighting system, runway guard lights, runway edge lighting system, runway touchdown lights and runway centerline lighting system for the realigned Runway 7R-25L.
- Installation of Taxiway Lead-On/Lead-Off lights and Airfield lighting connected with the high speed exit Taxiways and connecting taxiways.
- Installation of the runway and taxiway mandatory and information/guidance signs including new distance remaining signs for realigned Runway 7R-25L.
- Installation of 5kV series circuit cables and ducts associated with the proposed work described above.
- Installation of new maintenance holes, hand holes, pull boxes, and duct banks, as required, to connect the proposed airfield lighting system for realigned Runway 7R-25L and associated taxiways to the existing electrical Airfield Lighting Vaults.

- Installation of new duct banks, maintenance holes and pull boxes, as required, to connect the future airfield lighting system for future taxiway "AC" to the existing electrical Airfield Lighting Vaults.

6.3.2 Other Electrical/Power Distribution Improvements

The electrical design also addresses the power requirements for the new or relocated facilities currently owned and operated by the FAA Airway Facilities Branch or to be provided as part of this project many of those facilities are addressed under **Section 8.0, Landing and Navigational Aids** (NAVAIDS). These facilities may require enhancement and/or upgrade to accommodate the new alignment. These facilities include:

- Runway 7R Localizer/DME
- Runway 7L and 7R Glide Slope
- Automated Surface Observation System (ASOS) currently located between Runways 25L and 25R
- Low Level Wind-shear System (LLWAS)
- Runway 7R and 25L Precision Approach Path Indicators (PAPIs)
- Illuminated Wind Cones (LAX Owned – FAA Maintained)
- Extension/relocation of all Fiber Optic Services related to NAVAID

6.4 Design Assumptions

The design approach presented in this section assumes that Runway 7R-25L will be shut down (inactive) for the duration of the construction. As such, the existing power distribution and airfield lighting systems will be bypassed to maintain conformance to Codes and Regulations listed above.

6.5 Existing Conditions

The existing power distribution, airfield lighting and airfield signage systems described herein based on the analysis of the As-built drawings, as listed above, and a site visit made on July 29, 2003 for verification of the existing conditions at airfield lighting Vaults No. 1, 2N, 2S and 3.

6.5.1 Power Distribution System

The power for the airfield lighting system is derived from the 34.5kV Los Angeles Department of Water and Power (LADWP) LAX airport power distribution grid. The electrical services by the utility company are connected to the existing airfield lighting Vault No. 1, 2S, and 3. Vault No 2N is sub fed from Vault No 2S. The utility company transforms the service voltage at each airfield lighting vault primarily feed to the utilization level. Emergency generators are installed at each vault to serve emergency airfield lighting loads in case of a power outage to conform to FAA requirements for CAT III operations.

The airfield lighting fixtures are series connected to 5kV airfield lighting circuits originating from Constant Current Regulators (CCRs). CCRs are generally 6.6 amps for taxiway and signage circuits, and 20 amps for runway circuits. These regulators are located inside airfield lighting Vaults No. 1, 2N, 2S, and 3, as described below.

A . Existing Airfield Lighting Vault 1

Airfield Lighting Vault 1 is located on the west side of the Airport between the North and South Airfield and is served by 1,600 amps, 120/208V, 3-phase 4-wire LADWP Service. A 450kW, 120/208V, 3-phase, 4-wire Emergency Generator is installed. The existing total connected load is 419 amps. **Table 6-1** depicts the load schedule for this vault. Ample spare power capacity is available to serve the additional loads anticipated by this project.

At present, 25 taxiway CCRs are installed inside the Vault. There are two 10kW spare CCRs and space is available for five 10kW regulators. A Single Line Diagram for Vault1 is presented as **Figure 6.1**. A load schedule is included as **Table 6-2.**

TABLE 6-2
Vault 1 CCR Load Schedule

CCR	CCR Rating (kW)	Load Measured (kW)	CCR	CCR Rating (kW)	Load Measured
A1	10	9.8	A16	10	3.6
A2	10	4.8	A17	10	8.0
A3	10	7.0	A18	10	3.2
A4	10	9.2	A19	10	5.0
A5	10	5.0	A20	10	6.0
A6	10	8.0	A21	10	5.2
A7	10	8.4	A22	10	4.6
A8	10	10.0	A23	10	4.4
A9	10	2.6	A24	10	5.4
A10	10	3.0	A25	10	7.2
A11	10	3.6	A26	10	Space
A12	10	6.4	A27	10	Space
A13	10	2.0	A28	10	Space
A14	10	Spare	A29	10	Space
A15	10	Spare	A30	10	Space
				Total	**132.4**

B. Existing Airfield Lighting Vault No. 2S

Airfield Lighting Vault No. 2S is located on the north side of the Airport near the North Airfield and is served by 1,200 amps, 277/480, 3-phase 4-wires LADWP Service. The emergency generator is 230kW, 277/480, 3-phase, 4-wire. **See Figure 6.2, Single Line Diagram – Vault No. 2S**. No additional loads will be added under the Scope of this Project. At present, three 50kW, 480V, Single Phase CCR's are installed inside this vault to serve Runway 6L-25R. A 400 Amp, 277/480Volts, 3-phase supply is provided to serve Airfield Lighting Vault No. 2S.

A single line diagram of Vault 2S is presented on **Figure 6.2**. A load schedule is included as **Table 6-3**.

TABLE 6-3 Vault 2S CCR Load Schedule		
CCR No.	CCR Rating (kW)	Load Measured (kW)
24RI	50	14.8
24R2	50	15.6
24R3	50	24.8
24R4	50	Spare
Total		55.2

C. Existing Airfield Lighting Vault 2N

Airfield Lighting Vault 2N is located on the north side of the Airport near the North Airfield and is sub fed by 400 Amps, 277/480, 3-phase 4-wire feeder from Vault 2S. The Emergency Generator is a 250kW, 277/480, 3-Phase, 4-wire. **See Figure 6.3** – Single Line Diagram – Vault No. 2N. A load schedule is included as **Table 6-4**. No additional loads will be added under the Scope of this Project.

TABLE 6-4 Vault 2N CCR Load Schedule					
CCR	CCR Rating (kW)	Load Measured (kW)	CCR	CCR Rating (kW)	Load Measured
24L1	20	7.6	B13	4	Spare
24L2	20	16.2	B14	4	Spare
24L3	30	31.2	B15	4	Spare
24L2	20	14.8	B16	4	Spare
24L5	25	Spare	B17	7.5	3.4
B1	10	8.0	B18	4	Spare
B2	10	6.8	*B19	10	6.6
B3	7.5	Spare	B20	4	Spare
B4	4	2.2	B21	7.5	6.6
B5	10	8.8	B22	10	8.0
B6	7.5	3.2	*B23	7.5	7.3
B7	4	Spare	B24	7.5	6.6
B8	7.5	5.6	B25	7.5	Spare
*B9	10	8.1	*B26	4	2.4
B10	7.5	5.6	B27		Spare
B11	4	3.6	B28		Spare
B12	4	3.2			
				Total	**96.0**

At present, four 480V, single phase CCRs are installed inside this vault to serve Runway 6R-24L. A spare 25kW, 480Volts, Single Phase CCR is available for future use. At present, 27

CCRs are installed inside this vault. There are ten spare CCRs and space is available for one additional regulator.

D. Existing Airfield Lighting Vault 3

Airfield Lighting Vault 3 is located on the south side of the Airport and is served by 400 Amps, 4,160/2,400Volts, 3-phase 4-wires LADWP Service. A 300kW, 4,160/2,400Volts, 3-phase, 4-wire emergency generator and 200kW, 4160/2400Volts, 3-Phase, 4-wire Uninterruptible Power Supply Systems (UPS) is installed. See **Figure 6.4** - Single Line Diagram – Vault 3. The existing total connected load is 419 amps. Refer to Table 6-2, Vault 3 Panel and Runway CCR Load Schedule. Ample spare power capacity is available to serve the additional loads if added under this project.

At present, 25 CCR's are installed inside the Vault. There are two spare 10kW CCRs and space is available for five 10kW regulators. A single line diagram of vault 3 and an equipment layout plan is presented on Figure 6.4. Further, a load schedule is presented in **Table 6-5**.

TABLE 6-5
Vault 3 Load Schedule

CCR	CCR Rating (kW)	Load Measured (kW)	CCR	CCR Rating (kW)	Load Measured
25L1	50	26.6	C13	10	6.4
25L2	30	13.8	C14	10	6.4
25L3	30	26.8	C15	4	2.2
25L4	50	Spare	C16	10	3.6
25R1	50	24.2	C17	7.5	2.8
25R2	30	20.6	C18	4	2.0
25R3	30	10	C19	10	7.8
25R4	20	Spare	C20	10	7.0
C1	20	12.0	C21	10	9.4
C2	10	9.2	C22	7.5	7.8
C3	4	1.0	C23	10	8.8
C4	10	9.0	C24	7.5	2.8
C5	7.5	5.5	C25	10	2.4
C6	7.5	5.6	C26	10	3.2
C7	7.5	Spare	C27	10	8.6
C8	10	Spare	C28	10	5.8
C9	7.5	4.0	C29	10	4.2
C10	10	5.8	C30	10	5.6
C11	10	8.6	C31		Space
C12	10	5.0			
				Total	**284.6**

6.5.2 Existing Airfield Lighting System

The existing airfield lighting system within the project limits consists of runway, runway-end/threshold lights, runway touchdown zone lights, runway and taxiway edge lights, runway and taxiway centerline lights, runway guard lights, taxiway holding position lights and Precision Approach Path Indicators (PAPIs)

A. Existing Runway-End and Threshold Lighting System

The existing runway-end identification lighting (REIL) system consists of four elevated, high intensity bidirectional red/green lights on each side of the runway centerline. The existing lights are FAA type L-862E with a 200 watt lamp.

B. Existing Runway Touchdown Zone Lighting System

The existing touchdown zone lighting system for Runway 25L consists of two rows of transverse light bars (Barrettes) located symmetrically about the runway centerline. The existing touchdown zone lights are type L-850B, with 100 watts quartz lamps. The total power consumption per fixture is 444 watts, including system losses. Runway 7R, which is classified FAA Category I, and does not have a touchdown zone lighting system.

C. Existing Runway Edge Lighting System

The existing high intensity runway edge light (HIRL) system consists of elevated and in-pavement lights. The elevated edge lights are FAA type L-862, bidirectional, with two 200 watt lamps. The total power consumption per fixture is 444 watts including system losses. The inset runway edge lights are FAA type L-850C, bidirectional, with two 200 watt lamps. The total power consumption per fixture is 444 Watts.

D. Existing Runway Centerline Lighting System

The existing runway center lighting system consists of high intensity, in-set (semi-flush), type L-850A fixtures spaced approximately 50 feet apart longitudinally along the runway centerline. These are bidirectional lights with two 62 watt lamps. The total power consumption per fixture is 150 watts including system losses.

E. Existing Taxiway Edge Lighting System

The existing taxiway edge lights are medium intensity FAA type L-861T, omni-directional with blue lenses that are installed ten feet off the taxiway edges. These are elevated light fixtures with 45 watt quartz lamps. The total power consumption per light is 56 watts including system losses.

F. Existing Taxiway Center Line Lighting System

The existing taxiway centerline lighting system consists of bidirectional in-pavement light fixtures installed alongside the taxiway centerline markings for straight taxiway sections. FAA type L-852C narrow beam centerline lights are used and FAA type L-852D wide beam centerline light fixtures are utilized for the curved taxiway sections. These are inset light fixtures with 45 watt quartz lamps. The total power consumption per light is 56 watts including system losses.

G. Existing Runway Guard Lights and Taxiway Holding Position Lighting System

The existing runway guard lighting system consists of elevated and inset unidirectional light fixtures visible only to pilots of departing airplanes. The in-pavement fixtures are installed at the runway holding position or ILS critical area holding position marking. These semi flush fixtures are FAA type L-852G, unidirectional wide beam with traffic signal yellow filters and a 105 watt quartz lamp. The total power consumption per light is 125 watts including system losses. The existing elevated light fixtures (Wig-Wag) are type L-804 with a pair of yellow flashing heads. These are unidirectional fixtures with two 105 watt quartz lamps. The total power consumption per fixture is 125 watts including system losses.

6.5.3 Existing Airfield Signage System

The existing signage system within the project limits consists of runway/taxiway guidance and runway distance remaining signs and markers.

A. Existing Runway Distance Remaining Signs

The existing Runway Distance Remaining (RDR) Signs are FAA type L-858B, size 4. These are internally illuminated, double-faced, signs and they indicate the runway distance remaining in 1,000 foot increments. The runway 7R-25L signs are connected to a 5kV series circuit C23, which originates from airfield lighting Vault 3. The total power consumption of each sign is 170 watts with system losses.

B. Existing Taxiway Signs

The existing taxiway signage system consists of FAA type L-858Y and 858R, size 3, internally illuminated, single or double-faced signs. Depending upon the inscription, the existing taxiway signs are single, double, triple, or four unit modules. Each module is illuminated by its own lamp and the total power consumption including system losses for one, two, three, and four module signs is 115w, 170w, 260w, and 315w respectively.

6.6. Proposed Airfield Lighting System

The proposed airfield lighting system within the project limits consists of

- Runway precision approach path indicator,
- Runway-end/threshold lights, runway touchdown zone lights, runway and taxiway edge lights, runway and taxiway centerline lights, runway guard lights, and taxiway holding position lights.

The existing airfield lighting fixtures use quartz lamps. These fixtures are not as energy efficient. These lamps have lower efficiency and a shorter life than alternate types, resulting in higher operational and maintenance costs.

The proposed airfield lighting system is based on energy efficient light fixtures utilizing the new generation energy efficient and longer life Light Emitting Diodes (LED) and halogen lamps. The LED lamps have a projected life of 56,000 hours versus a 1,000 hour life for existing conventional quartz lamps. The LED lamps have a higher efficiency. For example, the conventional taxiway edge light fixture uses a 30 watt lamp with a total power input of 38 watts, while the proposed taxiway edge lights would use an 8.5 watt lamp with a total power input of 10 watts, reflecting a savings of 28 watts per fixture. The 10 watt isolation transformer is less costly than a 45 watt unit. These improvements would substantially reduce airport operational and maintenance costs although the initial capital cost is higher, but the pay back period is shorter. See **Table 6-3** for a comparison of energy efficiency and life expectancy.

Please refer to Section 8 of the report for a discussion of the existing CAT III and Category I precision approach lighting systems installed at Runway 25L and 7R respectively.

6.6.1 Proposed Runway Threshold and Runway-End Lighting System

The proposed runway threshold/runway-end identification lights are designed two to five feet off the threshold, four on each side of the runway. The design in terms of fixture type, spacing conforms to the latest FAA recommendations.

The existing 2-200w quartz lamps light fixtures, and isolation transformers will be disconnected, removed, cleaned, boxed, tagged and delivered to LAX Maintenance. The transformer base cans and other accessories will be demolished.

The existing threshold/runway end lights will be replaced with more efficient new generation light fixtures, FAA type L-850D with, 3x105 watt halogen longer life lamps. Lights will be served from L-830-9 isolation transformers and will be mounted on L-867, Class I, size B base cans.

6.6.2 Proposed Runway Touchdown Zone Lighting

The touchdown zone lighting system design for Runway 25L allows landing operations down to 600 feet RVR (Runway Visual Range). The touchdown zone lighting system consists of two rows of transverse light bars (Barrettes) located symmetrically about the runway centerline. The design in terms of fixture type and the like conforms to the latest FAA recommendations.

The existing light fixtures, isolation transformers will be disconnected, removed, cleaned, boxed, tagged and delivered to LAX Maintenance. The transformer base cans and other accessories will be demolished.

The existing touchdown zone lights will be replaced with more efficient new generation light fixtures FAA type L-850B with 48 watt clear halogen longer life lamps. Lights will be served from L-830-3 isolation transformer and will be mounted on L-868, Class I, size B base cans.

6.6.3 Runway Edge Lighting System

The proposed Runway Edge Lighting System is a high intensity type and the design conforms to the latest FAA recommendations. The last 2,000 feet of runway edge lights are designed as bidirectional yellow/red installed in such a manner that departing aircraft see yellow lights, while landing pilots view red lights. The lenses are 180 degree red and 180 degree yellow. The reminder sections of the runway edge lights are white.

The existing high power consuming (200w quartz lamp) light fixtures, isolation transformers will be disconnected, removed, cleaned, boxed, tagged and delivered to LAX Maintenance. The transformer base cans and other accessories will be demolished.

The existing runway edge elevated lights will be replaced with more efficient new generation light fixtures, FAA type L-862 with 120 watt halogen, longer life lamps. Fixtures are to be served from L-830-7 isolation transformer and are to be mounted on L-868, Class I, size B base cans. These fixtures are to be installed ten feet off the runway edges and shall be elevated 14 inches.

The existing runway edge semi flushed lights will be replaced with energy efficient new generation light fixtures FAA type L-850C with four 48 watts halogen, longer life lamps. Fixtures will be served from L-830-7 isolation transformer and are to be mounted on L-867, Class I, size B base cans.

6.6.4 Runway Centerline Lighting System

It is proposed that the runway centerline lighting system be designed as a high intensity type with light fixtures spaced an average of 50 feet apart longitudinally along the runway centerline. These fixtures will be color coded white for the major part of the runway, bidirectional red and white from 3,000 feet to 1,000 feet from the runway threshold, and red for the last 1,000 feet of each runway end. This design conforms to the FAA recommendations for fixture type, spacing, color coding and the like.

It is proposed that the existing 2-62w, quartz lamp light fixtures, isolation transformers and other elements be disconnected, removed, cleaned, boxed, tagged and delivered to LAX Maintenance. The transformer base cans and other accessories will be salvaged.

It is proposed that the existing runway centerline semi flushed lights will be replaced with energy efficient, life (2x48W, halogen lamps) new generation light fixtures FAA type L-850A with four 48 watts halogen, longer life lamps. Lights will be served from L-830-5 isolation transformer and will be mounted on L-868, Class I. size B base cans.

6.6.5 Taxiway Edge Lighting System

The proposed taxiway Edge Lighting System is designed as a high intensity type and the design conforms to FAA. The taxiway edge lights are type L-861T and will be installed ten feet off the taxiway edges. They shall be elevated 14 inches to match the existing installations. They will be mounted on 24 inches deep L - 867B base cans. The fixtures shall have omni-directional photometrics with blue lenses.

It is proposed that the existing 30w quartz lamp light fixtures, isolation transformers will be disconnected, removed, cleaned, boxed, tagged and delivered to the LAX Maintenance. The transformer base cans and other accessories will be demolished.

The existing taxiway edge elevated lights can be replaced with more efficient new generation light fixtures, FAA type L-861T with 8.5 watt LED, longer life (56,000 hours) lamps. Lights will be served from 10 watt L-830-1 isolation transformers.

6.6.7 Taxiway Centerline Lighting System

The proposed taxiway centerline lighting system consists of unidirectional or bidirectional in-pavement light fixtures installed alongside intersecting taxiway centerline markings. Taxiway centerline lights are designed as green or yellow. Yellow alternating with green lights are used to identify the confines of the ILS critical area. The layout of taxiway centerline lights conforms to FAA requirements for operations down to 600 feet RVR.

It is proposed that the existing high power consuming (45w, quartz lamps) light fixtures, isolation transformers be disconnected, removed, cleaned, boxed, tagged and delivered to the LAWA Maintenance department. The transformer base cans and other accessories will be demolished.

The existing taxiway centerline semi flushed lights are proposed to be replaced with energy efficient, longer life (56,000 hours) new generation light fixtures FAA type L- 850A with two 10 watt halogen, longer life lamps. Lights will be served from L-830-1 isolation transformer and will be mounted on L - 868, Class I Size B base cans.

6.6.9 Proposed Runway In-Pavement Guard Lights

The proposed airfield lighting design includes installation of in-pavement runway guard lights for Cat. III runway operations per FAA requirements. The stop bar lighting system consists of inset unidirectional red. These are to be installed at the runway holding position or ILS critical area holding position marking. They are to be spaced nine feet 8 inches across the width of the pavement. These fixtures are controlled by the airport traffic controller to coordinate aircrafts and ground vehicle movement over an active runway.

The existing light fixtures, isolation transformers and other elements will be disconnected, removed, cleaned, boxed, tagged and delivered to the LAX Maintenance department. The transformer base cans and other accessories will be demolished.

The existing runway semi flush lights will be replaced with energy efficient, longer life (105w, halogen lamps) and new generation light fixtures, FAA type L-852G. Lights will be served from L-830-4 isolation transformers and will be mounted on L–868, Class I size B base cans.

6.6.9 Proposed Runway Elevated Guard Lights

The runway guard lighting system consists of a pair of elevated yellow flashing light fixtures type L-804. These will be installed at the runway holding position or ILS/MLS critical area holding position marking on both side of the taxiway, ten feet off the taxiway edge. The function of these fixtures is to confirm the presence of an active runway ahead and to assist in preventing runway incursions. The existing light fixtures, isolation transformers will be disconnected, removed, cleaned, boxed, tagged and delivered to LAX Maintenance department. The transformer base cans and other accessories will be demolished.

It is proposed that the existing taxiway holding position lights be replaced with energy efficient, longer life (105w halogen lamps) new generation lamps and new FAA type L-804 fixtures. Lights will be served from L-830-5 isolation transformer and will be mounted on L-867, Class I, Size B base cans.

6.7 Proposed Airfield Signage System

The proposed airfield signage system is designed in conformance with the latest editions of FAA Advisory Circulars AC 150/5340-18 "Standards for Airport Sign System". The proposed airfield signage system within the project limits will consist of runway and taxiway signs.

The proposed airfield signage system is based on the use of energy efficient and longer life fluorescent lamps. These fluorescent lamps have a projected life of 5,000 hours versus a 1,000 hour life for conventional quartz lamps. The efficacy of fluorescent lamps is 35 lumens per watt versus the existing quartz lamps efficacy of 15 lumens per watt.

These improvements substantially reduce airport operational and maintenance costs although the initial capital cost is higher but the pay back period is shorter. Signs fall into two groups, Runway Signs and Taxiway Signs as discussed below.

6.7.1 Proposed Airfield Signs

A. Proposed Runway Distance Remaining Signs

The proposed design calls for Runway Distance Remaining (RDR) Signs will be equipped with an internally illuminated double-faced sign. Each sign will indicate the runway distance remaining in 1,000 feet increments. RDR signs will be located approximately 50 feet away from runway edge. They will be provided with tether straps to prevent them from being damaged during operations. The signs will be connected to 5kV runway edge light circuit C-23. The Runway Distance Remaining Signs will be type L-858B size 4.

The existing signs and, isolation transformers will be disconnected, removed, cleaned, boxed, tagged and delivered to LAX Maintenance department. The transformer base cans and other accessories will be demolished. The proposed signs will be equipped fluorescent lamps.

B. Proposed Taxiway Signs

Taxiway signs will be located 50 feet away from the taxiway edge to mitigate jet blast. The taxiway signs will be type L -858Y, Size 3. The taxiway signage system is classified into four groups:

- Destination Signs that define the direction to a particular runway, taxiway or apron.
- Directional Signs that indicate the taxiways leading out of a taxiway/taxiway or taxiway/runway intersection.
- Location Signs that show the taxiway on which the aircraft is traveling.
- Mandatory Signs that warn the pilot of holding position locations at taxiway/taxiway, taxiway/runway or taxiway/ILS critical area intersections.

The existing signs and, isolation transformers will be disconnected, removed, cleaned, boxed, tagged and delivered to the LAX Maintenance department. The transformer base cans and other accessories will be demolished.

The proposed signs with energy efficient and longer life fluorescent lamps to reduce the operation and maintenance costs. The signs will be connected to a 5kV taxiway edge lighting circuit.

6.8 Miscellaneous Visual Aids

6.8.1 Illuminated Wind Direction Indicator

The Illuminated Wind Direction Indicator, more commonly known as a "Wind Sock", is a device which provides the pilot visual indication of wind direction and, to a limited degree, wind velocity. The existing illuminated wind direction indicators, isolation transformers will be disconnected, removed, cleaned, boxed, tagged and delivered to the LAX Maintenance. The transformer base cans and other accessories will be demolished. The proposed centerfield Illuminated Wind Direction Indicator will be installed near the mid point of runway 25L-7R per FAA Standards. It will be FAA type L-807, Size 2 and will be illuminated by four 45 watt/6.6Amps lamps. The two or three supplemental Illuminated Wind Direction Indicators proposed will be installed approximately 1,000 feet from each runway end. They will be FAA type L-806, Size 1 and will be illuminated by four 45 watt/6.6 Amp lamps.

6.8.2 Illuminated Obstruction Lights

Proposed obstruction lights are in conformance with FAA Advisory Circular 70/7460-1H and will be mounted to structures, equipment or appurtenances that penetrate the vertical FAA clearance criteria. The existing obstruction lights mounted on illuminated wind direction indicators will be disconnected, removed, cleaned, boxed, tagged and delivered to the LAX Maintenance. The transformer base cans and other accessories will be demolished. The proposed obstruction lights omni-directional red light fixtures conforming to FAA requirements will be mounted atop wind socks. Photoelectric control will be provided for these fixtures.

6.8.3 Precision Approach Path Indicator (PAPI)

A Precision Approach Path Indicator (PAPI) is a device which provides the landing pilot with a visual indication of the glide slope. The PAPI projects a precise beam of light which indicates red if the pilot is below the glide slope aiming angle and white if above the glide slope angle. The transitional angle between red and white is only a few minutes of arc that indicate the correct glide slope. PAPI's will be connected to low voltage power distribution systems with step-down transformers as appropriate. Refer to Section 8.0 of this report for further discussion of PAPIs.

6.9 Airfield Lighting and Signage Circuiting

The proposed circuiting will improve the operation of the airfield lighting system, providing more ways to save energy, ease maintenance and control flexibility. The current taxiway lighting and signage circuits originate from CCR's located in airfield lighting Vault 1, 2N, 2S and 3.

These circuits are identified on Program Refinement Drawings – Volume II, with vault and CCR designations. For example C23 indicates that the circuit is originated from regulator 23 located at Vault 3. As noted earlier, and as shown in the load schedules per vault facility, the first letter designates the vault number and the numerical indicates the CCR.

The existing runway 7R-25L centerline, touch down zone and edge lights are identified by their application. It is proposed they be disconnected from their respective regulators: 25L1; 25L2 and 25L3. All existing CCRs, ducts and 5kV cables will be used as far as possible, new duct banks and cables will be provided to connect new lights. The proposed runway 7R-25L centerline, touch down zone and edge lights will be connected to existing regulators 25L1, 25L2 and 25L3 respectively.

The existing runway 25L-7R signs will be disconnected from their existing regulator C23. The existing CCRs, ducts and 5kV cables will be used as far as possible, new duct banks and cables will be provided to connect new signs. The proposed runway 25L-7R distance remaining markers will be connected to existing regulator C23.

The existing taxiway edge, centerline and runway guard lights within the project limits will either be disconnected or will be modified to suit the proposed configurations. Most of taxiway lights under the scope of this project served from airfield lighting Vault 3. Approximately a third of the taxiway edge lights are connected to airfield lighting Vault 1. The existing taxiway edge, centerline, holding position and wig-wag lights, served from circuits C1, C3, C4, C6, C7, C12, C13, C20 through C26, C28, C30, A2, A3, A4, A5, 19, and A19 will be affected by this project.

Based on airfield lighting control and monitoring requirements, four to six new regulators will be required to serve new taxiway edge, centerline, and runway guard lights. **Table 6-6** details spare regulators.

TABLE 6-6
Spare Regulators

Vault No.	Number of Spare CCR Regulators	Designation of Spare Number
1	2	A14 and A15
2N	10	B3, B7, B13, Thru 16, B18, B20, B25 and B27
2S	1	24R4
3	2	C7 and C80

The spare regulators will be used to serve new circuits. Available spaces will be utilized to install new regulators required to handle proposed circuits. There is no more space available for new regulators in Vault No. 3. In case new regulators are required to connect the proposed circuits, at Vault No. 3, the following options will be considered:

- Installation of new regulators atop the existing CCRs.
- Upgrading the size of existing regulators and providing Selector Switches to connect more than one circuit on a CCR.

The proposed directional signs will be generally connected to the served taxiway edge lighting circuits. The proposed wind cones will be connected to the runway distance remaining marker circuit C23. The proposed airfield lighting and signage system design will not allow more than two circuits in direct buried conduits between light fixtures. This will generally accomplished by creating loops for the edge light circuits and by returning centerline circuit separately in the duct banks. The touchdown zone raceways will be routed to eliminate multiple cables in one conduit.

6.10 Airfield Lighting and Signage Duct Banks

The concrete encased main duct banks run from each airfield lighting vault to the airfield. The duct bank from Vault No. 1 serves the north air field and a small portion of the south airfield. The duct banks from Vaults No. 2 and 3 serve several south airfield and north airfield circuits. Spare ducts are available to connect the proposed circuits to the pertinent airfield lighting vault.

A portion of main duct bank from Vault No. 3 in the path of the construction area will be relocated outside the runway safety areas. All maintenance holes and pull boxes will be located outside runway taxiway safety zones. New duct banks, as required to connect the proposed circuits to the vault, will be built as part of this work. The general duct bank construction will match the existing one and the maintenance hole covers will be rated for 100,000-pound aircraft loading. Direct buried conduits will be typically 2 inch PVC, schedule 40. They will be buried 18 to 24 inches below grade.

6.11 Electrical Load Calculations

The electrical load calculations based, on the maximum demand reading provided by LA County Department of Water and Power, confirmed the adequacy of the existing power supply by LACDWP to serve the additional loads covered under the scope of this project. It is anticipated that upgrades to the existing electrical services will not be required. This is based on the assumption that Runway 7R-25L will be closed during the construction. The electrical service load calculations are presented below.

6.11.1 Airfield Lighting Vault 1

DW&P Meter No: **APMYD 126-1720**

Maximum demand for past 12 months as recorded by DW&P is	203 kW
Add 25% per NEC 220-35	50.8 kW
Total demand load	250.8 kW
Total demand load @ 120/208 Volts System	696.7 amps
Size if existing DW&P 120/208 Volts Service	1600 amps

Conclusion:
The Existing DW&P service has adequate spare capacity available and is adequate to serve additional loads, if added by this Project.

6.11.2 Airfield Lighting Vault 2S/2N

DW&P Meter No: **APMYD 226-4852**

Maximum demand for past 12 months as recorded by DW&P is	301 kW
Add 25% per NEC 220-35	75.3 kW
Total demand load	376.3 kW
Total demand load @ 277/480 Volts System	452.8 amps
Size if existing DW&P 277/480 Volts Service	1200 amps

Conclusion:
The Existing DW&P service has adequate spare capacity available and is adequate to serve additional loads, if added by this Project.

6.11.2 Airfield Lighting Vault No. 3

DW&P Meter No: **APMYD 2022-405**	
Maximum demand for past 12 months as recorded by DW&P is	427 kW
Add 25% per NEC 220-35	106.8 kW
Total demand load	533.8 kW
Total demand load @ 4160/2400 Volts System	73.16 amps
Size if existing DW&P 4160/2400 Volts Service	100 amps

Conclusion:
The Existing DW&P service has adequate spare capacity available and is adequate to serve additional loads, if added by this Project.

6.12. Constant Current Regulators

CCR's convert the constant voltage power supply to constant current (20 or 6.6 amp) power system. This is done to eliminate the voltage drop problem for the long airfield lighting circuits and to provide uniform lighting intensity for all airfield lighting fixtures connected in a circuit.

High density loads such as runway precision approach and touchdown zone light fixtures will utilize the existing 20 amps CCRs while the low density loads such as the runway and taxiway centerline, edge lights and signs will be served by existing 6.6 amps CCRs. The existing CCRs with five brightness steps will be used for the runway lighting system while three steps CCRs will be utilized for the taxiway lights. The existing regulators are located in airfield lighting vault 1, 2N, 2S, and 3. Spare regulators are available and they will be used to serve proposed circuits added under the scope of this design. Some of regulators are not loaded to their full capacity.

7.0 AIRFIELD LIGHTING CONTROL AND MONITORING SYSTEM (ALCMS)

7.1 Introduction

The ALCMS provides a means for the Airport Traffic Control Tower (ATCT) personnel to control and monitor airfield lighting systems in order to facilitate aircraft movement on the airfield.

The purpose of this section is to identify the existing Airfield Lighting Control and Monitoring System (ALCMS) equipment associated with this project's relocation of Runway 7R-25L. In addition, this section identifies improvements necessary to expand the existing ALCMS, as required to accommodate the proposed electrical modifications associated with the airfield lighting modifications. The Runway 7R-25L ALCMS equipment modified under this project includes the equipment which controls of the runway edge lighting, runway touchdown zone lighting, runway and taxiway centerline lighting, taxiway edge lighting, and all lighted signage associated with Runway 7R-25L.

The condition of the existing equipment, and conformance to applicable local and FAA design standards was determined based on an inventory and evaluation of the existing LAX ALCMS.

The conclusion of this section includes recommendations for improvement of the LAX ALCMS.

7.2 ALCMS Evaluation

7.2.1 ALCMS Description

The existing ALCMS is a Crouse-Hinds (C-H) computer based control and monitoring system with separate and independent main and backup systems. The ATCT and each of the four vaults consist of control and monitoring systems equipment, with each location consisting of a main and backup computer assembly. The maintenance facility consists of a single computer assembly. Communication between facilities is via a dual direction Fiber Optic Ethernet Network, with a wireless Ethernet Network serving as a backup communications method. Tied together through the Ethernet Network, the systems are combined to create the ALCMS.

Select airfield lighting fixture lamps that have been identified as part of the proposed LAX Surface Movement Guidance and Control System (SMGCS) plan, for use under low visibility conditions, has an on-board monitoring device, the Crouse Hinds Logitrac module. Runway Guard Lights have Logitrac modules as well. However, at this time, they only serve as a control device to flash the lamp.

The Logitrac system operates on a power line carrier signal generated over the airfield lighting cable. The Logitrac master receives commands from the Digitrac and impresses the signal over the airfield lighting cable at a higher frequency then generated by the constant current regulator (CCR). The Logitrac module receives this signal and carries out the command. The Logitrac modules also send signals back to the master unit identifying if the command was carried out and if there is a problem with the device it is connected to. The current problem being experienced with the system (as reported to HNTB by the LAX electrical maintenance personnel and Crouse-Hinds) is that the existing signage terminated to the same circuit as the Logitrac units generate a competing frequency as the signal being transmitted by the Logitrac master. Power line signal problems may be resolved with investigation of how the circuits are routed, how the modules are terminated to the circuit, capture of interferences associated with the circuit with frequency shift key technology, and/or if the frequency generated by the Logitrac master can be changed.

CCRs which drive the airfield lighting, as well as other electrical devices which are part of the ALCMS, are controlled by a Crouse-Hinds Digitrac distributed control module.

The existing system has been installed and operational for approximately 2 years.

7.2.2 System Configuration

Each ATCT Touch Screen has its own industrial Computer. The ATCT computers are tied together via a hub communicating with each vault via a star topology communication configuration over fiber optic cables from the tower to each vault and use the wireless link as a backup. At each vault, the duplicate fiber runs terminate to Fiber Drivers hardwired to the main and backup computers. A separate twisted pair cable is routed from both the main and backup computers around the vault and terminated to each Digitrac Interface Unit.

7.2.3 ALCMS System Components

The major system components are the main and back-up ATCT Cab touch screens that are operated via main and back-up central processing units (CPUs) located within the ATCT. Each vault has a main and back-up CPU with standard monitors, and the maintenance facility has a single CPU and standard monitor.

The ATCT CPUs communicate with the Vault CPUs via fiber optic cables and use a wireless link for the backup system. Individual electrical equipment which is controlled by the ALCMS has a Digitrac module interfaced with the unit. Individual "lamps out" monitoring requires a Logitrac module interfaced with the airfield lighting circuit. Megatrac modules are installed at each regulator to provide Insulation Resistance Monitoring (IRMS) of the airfield lighting cable.

The Digitrac unit is the control module, which controls the regulators, generator, or other controlled electrical equipment, to comply with commands from the ATCT touch screen or Maintenance computer, through direct system inputs.

The Logitrac module monitors individual lamps out on the airfield lighting system. A Logitrac module is located at each fixture required to be controlled and monitored under SMGCS operations. There is a Logitrac master installed on the output side of each regulator which is to control and monitor the fixtures under SMGCS operations.

7.2.4 FAA Airfield Lighting Requirements

High intensity runway lights are to operate on a five-step regulator and runway medium intensity lights are to operate on a three-step regulator to obtain the proper photometrics during various visibility conditions per FAA AC 150/5340-24. FAA AC 150/5340-24 stipulates as well, that the taxiway medium intensity lighting shall operate on a three-step regulator. FAA Order 7110.65, section 4 provides guidance to the Air Traffic Controllers (ATC) on regulator settings for operations under each visibility condition.

The existing ALCMS touch screens control the runway lighting circuitry in accordance with the FAA Advisory Circulars, base on current operating conditions.

7.2.5 ALCMS Sub Systems

The ALCMS is comprised of six separate sub-systems, each of which consists of a computer based system which both controls and monitors the Airfield Lighting System. These sub-systems are described as follows:

A. Airport Traffic Control Tower (ATCT) Equipment

- Touch screen for ALCMS, located in the ATCT Cab.
- Back-up touch screen for ALCMS, located in the ATCT Cab.
- Main ATCT touch screen computer, rack mounted, located in the ATCT first floor Electrical Room
- Back-up ATCT touch screen computer, rack mounted, located in the ATCT first floor Electrical Room
- Separate video and control cabling between the main touch screen computer and main Cab touch screen, and between the back-up touch screen computer and back-up Cab touch screen.
- 24-fiber fiber optic Ethernet network between ATCT, the airfield lighting vaults, and the maintenance facility.
- Wireless Ethernet network from the computers in the ATCT, the computers unit in each lighting vault, and the maintenance facility computer.

B. Lighting Vault Equipment:

There are four vaults which house the airfield lighting equipment for LAX: Lighting Vault #1, Lighting Vault #2N, Lighting Vault #2S, and Lighting Vault #3. Each of these lighting vaults consists of both a main and back-up ALCMS computer system.

Lighting Vault #1:

- Single cabinet with Main Vault #1 ALCMS computer, and Back-up Vault #1 ALCMS computer.
- Both Vault #1 computers connect to the Airport's Fiber Optic Ethernet Network, both have wireless Ethernet Network capability, and both connect to two (2) sets of twisted pair cables running to each regulator.
- Each regulator is controlled via a computerized control interface device (C-H Digitrac module), and includes an Insulation Measurement Unit (Megatrac)
- Some regulators in Vault #1 have C-H Logitrac modules connected to the regulator, that monitor lamps out. These modules are not functioning due to frequency interference between the Logitrac modules and existing airfield signs.

Lighting Vault #2N:

- Single cabinet with Main Vault #2N ALCMS computer, and Back-up Vault #2N ALCMS computer.

- Both Vault #2N computers connect to the Airport's Fiber Optic Ethernet Network, both have wireless Ethernet Network capability, and both connect to two (2) sets of twisted pair cables running to each regulator.
- Each regulator is controlled via a computerized control interface device (C-H Digitrac module), and includes an Insulation Measurement Unit (Megatrac)
- Some regulators in Vault #2N have C-H Logitrac modules connected to the regulators, that are designed to monitor lamps out. These modules are not functioning due to frequency interference between the Logitrac modules and existing airfield signage.

Lighting Vault #2S:

- Single cabinet with Main Vault #2S ALCMS computer, and Back-up Vault #2S ALCMS computer.
- Both Vault #2S computers connect to the Airport's Fiber Optic Ethernet Network, both have wireless Ethernet Network capability, and both connect to two (2) sets of twisted pair cables running to each regulator.
- Each regulator is controlled via a computerized control interface device (C-H Digitrac module), and includes an Insulation Measurement Unit (Megatrac)
- Some regulators in Vault #2S have C-H Logitrac module connected to the regulator, that are designed to monitor lamps out. These modules are not functioning due to frequency interference between the Logitrac modules and existing airfield signage.

Lighting Vault #3:

- Single cabinet with Main Vault #3 ALCMS computer, and Back-up Vault #3 ALCMS computer.
- Both Vault #3 computers connect to the Airport's Fiber Optic Ethernet Network, both have wireless Ethernet Network capability, and both connect to two (2) sets of twisted pair cables running to each regulator.
- Each regulator is controlled via a computerized control interface device (C-H Digitrac module), and includes an Insulation Measurement Unit (Megatrac)
- Some regulators in Vault #3 have C-H Logitrac modules connected to the regulator, that are designed to monitor lamps out. These modules are not functioning due to frequency interference between the Logitrac modules and existing airfield signage.

C. Maintenance Facility Equipment:

- Single desk top personal computer
- Computer connects to the Airport's Fiber Optic Ethernet Network.
- Computer is connected to a printer for printing the logged information.

7.3 ALCMS Inventory

7.3.1 General

The ALCMS Touch Screens are installed in the counter tops of the ATCT Cab. The touch screen panels control all runway and taxiway lighting circuits, generators, and the airport Beacon. Airfield lighting is controlled and monitored via the ALCMS. Individual "lamps out" monitoring is not functioning at this time.

Airfield lighting circuits are controlled by the FAA Air Traffic Controllers who select each circuit. **Table 7-1** below lists the airfield lighting circuits associated with the ALCMS, included in this inventory.

7.3.2 Condition of Exiting ALCMS

The existing ALCMS is relatively new, and other than the issue of the existing airfield signs generating a competing frequency with the Logitrac units, there have been no reported problems with the system. However, a review of the frequency interference problems with the Logitrac units is recommended under this project as identified in section 7.2.1.

Existing ALCMS cables and conduit are both fairly new, and there have been no reported problems with the existing ALCMS cable and conduit systems.

Existing Fiber Optic Ethernet cables routed between the ATCT and the airfield lighting vaults are all assumed to be in reasonable condition, but the current Optical Time Domain Reflectometer (OTDR) readings and spare capacity of the cable is unknown. However, no modifications to the existing Fiber Optic Ethernet Network are proposed.

It was not possible to evaluate the condition of the existing conduit as it is buried, nor was it possible to evaluate the availability of spare conduits available between the ATCT and the airfield lighting vaults. However, no need for spare conduit is anticipated in association with this project.

A review of the existing conduit and cable routing was not performed as a part of this project. The existing inter-facility communications system is not intended to be modified under this project.

7.3.3 ALCMS Inventory

The following is an inventory of the existing ALCMS:

A. Electrical Vault 1
- ♦ Antenna 13.5 DBI Yagi
- ♦ Lighting Arrestor

B. Electrical Vault 1 Main Computer Cabinet
- ♦ NEC E500 15" Monitor
- ♦ MICRON Industrial Computer 333MHz
- ♦ Trilogic Keyboard, Mouse Pad, and Unit
- ♦ Centercom Ethernet Hub
- ♦ Aironet Wireless Bridge
- ♦ LA/PC Modem+CBL
- ♦ Uninterruptible Power Supply

C. Electrical Vault 1 Backup Computer Cabinet
- ♦ NEC E500 15" Monitor
- ♦ MICRON Industrial Computer 333MHz

- Trilogic Keyboard, Mouse Pad, and Unit
- Centercom Ethernet Hub
- Fiber Driver
- Single Slot Chassis, Network
- Single Slot Interface Board - Fiber to Copper
- Fotec Fiber Optic Attenuator
- Repeater Interface, 2 Repeaters and 24 VDC Power Supply
- Uninterruptible Power Supply
- Power Strip

D. Electrical Vault 2N

- Antenna 13.5 DBI Yagi
- Lighting Arrestor
- Air conditioner

E. Electrical Vault 2N Main Computer Cabinet

- NEC E500 15" Monitor
- MICRON Industrial Computer 333MHz
- Trilogic Keyboard, Mouse Pad, and Unit
- Centercom Ethernet Hub
- Aironet Wireless Bridge
- LA/PC Modem+CBL
- Uninterruptible Power Supply

F. Electrical Vault 2N Backup Computer Cabinet

- NEC E500 15" Monitor
- MICRON Industrial Computer 333MHz
- Trilogic Keyboard, Mouse Pad, and Unit
- Centercom Ethernet Hub
- Fiber Driver
- Single Slot Chassis, Network
- Single Slot Interface Board - Fiber to Copper
- Fotec Fiber Optic Attenuator
- Repeater Interface, 2 Repeaters and 24 VDC Power Supply
- Uninterruptible Power Supply
- Power Strip

G. Electrical Vault 2S

- Antenna 13.5 DBI Yagi
- Lighting Arrestor
- Air Conditioner

H. Electrical Vault 2S Main Computer Cabinet

- NEC E500 15" Monitor
- MICRON Industrial Computer 333MHz
- Trilogic Keyboard, Mouse Pad, and Unit

- Centercom Ethernet Hub
- Aironet Wireless Bridge
- LA/PC Modem+CBL
- Uninterruptible Power Supply

I. Electrical Vault 2S Backup Computer Cabinet

- NEC E500 15" Monitor
- MICRON Industrial Computer 333MHz
- Trilogic Keyboard, Mouse Pad, and Unit
- Centercom Ethernet Hub
- Fiber Driver
- Single Slot Chassis, Network
- Single Slot Interface Board - Fiber to Copper
- Fotec Fiber Optic Attenuator
- Repeater Interface, 2 Repeaters and 24 VDC Power Supply
- Uninterruptible Power Supply
- Power Strip

J. Electrical Vault 3

- Antenna 13.5 DBI Yagi
- Lighting Arrestor
- Air Conditioner

K. Electrical Vault 3 Main Computer Cabinet

- NEC E500 15" Monitor
- MICRON Industrial Computer 333MHz
- Trilogic Keyboard, Mouse Pad, and Unit
- Centercom Ethernet Hub
- Aironet Wireless Bridge
- LA/PC Modem+CBL
- Uninterruptible Power Supply

L. Electrical Vault 3 Backup Computer Cabinet

- NEC E500 15" Monitor
- MICRON Industrial Computer 333MHz
- Trilogic Keyboard, Mouse Pad, and Unit
- Centercom Ethernet Hub
- Fiber Driver
- Single Slot Chassis, Network
- Single Slot Interface Board - Fiber to Copper
- Fotec Fiber Optic Attenuator
- Repeater Interface, 2 Repeaters and 24 VDC Power Supply
- Uninterruptible Power Supply
- Power Strip

M. ATCT CAB

- Two NEC 20.1 Flat Panel Displays
- 6 Ft. Standard Video Cable
- Two Video Extender (Receiver)
- 100 Ft Cable, PC Extender
- Two pairs of Speakers
- 100 Ft. 20 AWG, 2 conductor speaker wire
- 6 ft. DB9-DB 25 Cable
- Two four wire modems
- 100 Ft. Twisted shielded 2 pair cable

N. Control Tower

- Ethernet Hub
- 3 Antennas 13.5 DBI Yagi
- 3 Lighting Arrestors
- 3 Wireless Bridges

O. Control Tower Main Computer Cabinet

- NEC 15" Touch Screen Monitor
- Industrial Computer
- Two Trilogic Keyboard, Mouse Pad, and Units
- Centercom Ethernet Hub
- Video Extender (Transmitter)
- ABC Switch
- Modem
- Uninterruptible Power Supply
- Power Strips

P. Control Tower Backup Computer Cabinet

- Industrial Computer
- Centercom Ethernet Hub
- Video Extender (Transmitter)
- Modem
- Fiber Driver
- 16-Slot Chassis
- Five Slot Interface Board - Fiber to Copper
- Five Fotec Fiber Optic Attenuators
- Fast Ethernet Switch
- Uninterruptible Power Supply
- Power Strips

Q. Maintenance Facility

- Desktop PC with Accessories
- 17" Monitor
- Printer
- Interface Board – Fiber to Copper

- Uninterruptible Power Supply

7.3.4 Assumptions and Limitations

Lighting Vault #3 is the only ALCMS facility impacted by this project's airfield lighting modifications.

The control of the airfield lighting and signage circuits for Runway 7R-25L, the new Taxiway AC, and the reconfigured connecting and exit taxiway was included in this evaluation.

The Airfield Control and Monitoring System – Upgrade Phase I drawings dated May 1999, and Airfield Control and Monitoring System – As-Built drawings, dated November 2001 were used as a basis for the ALCMS evaluation for this inventory.

The existing airfield lighting control system was not evaluated against the standards contained in FAA Advisory Circular 150/5345-3, since the system is relatively new and the Sponsor directed HNTB to re-use the existing system.

7.4 FAA-Owned Lighting

All NAVAID systems at LAX are owned and operated by the FAA. This includes 7R PAPI, 25L Touchdown, Midfield, and Rollout RVR, 7R MALSR, 25L ALSF-2, 7R ILS/DME (CAT I), 25L ILS/DME (CAT II/III). **Section 8.0 – Landing and Navigational Aids** addresses the NAVAID improvements.

7.5 Airport Traffic Control Tower

7.5.1 Existing Touch Screen Graphics

The LAX airport graphics were generated in 1999 in accordance with the airfield lighting circuitry installed at that time. There have reportedly been a number of circuit modifications to the airfield lighting since that time. The LAX airport graphics will be updated to reflect the new taxiway modifications included in this project. It is recommended that the graphics be updated to reflect the circuiting as installed to date.

7.6 Airfield Lighting Vault Equipment Improvements

7.6.1 Existing Equipment

Table 7-1 lists the existing airfield lighting equipment in the existing ATCT, and Vault #3.

TABLE 7-1
Vault 3 Airfield Lighting Equipment

Equipment	DIGITRAC	MEGATRAC	LOGITRAC	Quantity
CCR: 3 step, 7.5kW, 6.6A	yes	yes	no	10
CCR: 3 step, 7.5kW, 6.6A	yes	yes	yes	1
CCR: 3 step, 10kW, 6.6A	yes	yes	no	13

TABLE 7-1
Vault 3 Airfield Lighting Equipment (continued)

Equipment	DIGITRAC	MEGATRAC	LOGITRAC	Quantity
CCR: 3 step, 10kW, 6.6A	yes	yes	yes	2
CCR: 3 step, 4kW, 6.6A	yes	yes	no	5
CCR: 5 step, 50kW, 20A	yes	yes	yes	3
CCR: 5 step, 30kW, 20A	yes	yes	no	3
CCR: 5 step, 20kW, 20A	yes	yes	no	1
Generator	yes	no	no	2
Main Computer Cabinet	n/a	n/a	n/a	1
Backup Computer Cabinet	n/a	n/a	n/a	1
Antenna 13.5 DBI Yagi	n/a	n/a	n/a	1

7.6.2 New Equipment

A minimum of three new regulators will be added to the existing Vault #3 to supply the new taxiway circuits added under Phase II of this project. These regulators will require new control and monitoring units, as well as new IRMS modules. New control and monitoring conduit and wiring will be required, as well as conduit and wire to power the new control and monitoring modules.

7.7 ALCMS Conclusions and Recommendations

The proposed project is organized in two separate phases. Phase I involves relocation of existing runway 7R-25L approximately 56 feet to the south. There are no anticipated vault equipment modifications required under this phase, as the existing circuits will be re-used as presently designed, and the existing vault regulators will not be altered. Modifications to the ALCMS would be necessary if any runway lighting circuits are modified under this phase which requires changing the current regulator sizes or adding or deleting regulators.

Phase II involves modifications to the existing taxiway circuits, adding approximately three circuits to the existing system. The ALCMS graphics will be updated to reflect then airfield changes made as part of this project. Control, monitoring, and IRMS modules will be added to all new regulators, as required, and modifications to existing modules will be made as necessary where existing regulator are changed out, based on the revised lighting load. Since the SMGCS routes are controlled and monitored by the Logitrac units, it is recommended that the frequency interference problem between the existing signage and the Logitrac units be investigated under this project.

8.0 LANDING AND NAVIGATIONAL AIDS

8.1 Introduction

This section of the report presents preliminary information related to modifications to existing navigational and landing aids (NAVAIDS) needed to accommodate the airfield improvements. As described in the following subsections, the relocation of Runway 25L and the construction of the Center Taxiway, create many challenges in the siting of the required equipment.

One of the primary goals of the studies is to find alternatives that will retain the type and quality of the current approaches for all ends of the runways in the South Airfield, while not compromising FAA recommended airport design standards.

Since all the affected facilities are owned and maintained by the FAA, it is imperative that this section, and more importantly the findings of these studies, be reviewed by several of the FAA business lines, more specifically, Airway Facilities, Flight Standards and Procedures, as well as Airports. Collectively, these business lines or branches of the FAA should provide guidance on the resolution of conflicting and critical issues.

The following subsections are structured to address each of the affected facilities. First, the subsections briefly describe the existing conditions, in terms of equipment type, location site constraints, and the like; and then a proposed approach is presented. Note that for some of the equipment; more than one option is available. The selection of the preferred action should be collective and should involve the design engineer, the FAA and LAWA.

The studies have made every attempt to address available and proven technologies recognizing that some of this technology is not currently being used in the area and therefore presents a departure from current FAA regional practice. However, some of the technology presented herein is used in other parts of the county at airports with similar site and operating constraints as LAX.

8.2 Affected Facilities

The NAVAID facilities being considered for relocation during the construction of Runway 25L/7R and the proposed Centerfield Taxiway are:

- Runway 25L:
  ALSF-2
  Localizer
  Far Field Monitor
  Middle Marker
  Inner Marker
  Glide Slope
- Automated Surface Observation System (ASOS)
- Midfield RVR Sensor
- Low Level Windshear Alert System (LLWAS)
- Airport Surface Detection Equipment (ASDE) alignment reflectors

- Runway 7R:
  Middle Marker
  MALSR
  Localizer/DME
  Glide Slope
- Runway 7L Glide Slope
- Runway 25L Rollout RVR (located adjacent to Runway 7L and 7R GS facilities)
- Runway 7R PAPI

Each facility relocation, except the ASDE alignment reflectors, requires the extension of associated power service and control circuits. The control circuits can either be copper cable or fiber optic. Further, each facility requires some type of site improvements and foundations to meet current FAA siting standards.

The siting studies follow current FAA standards. Existing conditions have been determined through review of "as-built" FAA drawings and field visits. Further investigation and research is still underway in respect to ASOS, LLWAS and ASDE alignment reflectors. The former is a facility owned by the National Oceanic and Atmospheric Administration (NOAA). **Figure 8.1** illustrates the location of all NAVAID facility referenced in this section.

8.3 Approach Light Systems

8.3.1 Runway 25L ALSF-2 (Approach Lighting System with sequenced Flashing lights)

A. Current Conditions

The Runway 25L ALSF-2 threshold bar is located 10 feet east of the Runway 25L landing threshold and the ALSF system extends east along the runway centerline approximately 2,400 feet. The threshold bar and stations 1+10 through station 11+43 are inside the AOA. Station 12+58 is located within the Metropolitan Transportation Authority (MTA) railroad right-of-way running along the west side of Aviation Boulevard. ALSF stations 13+50 through 24+20 are located east of Aviation Boulevard. The ALSF-2 Power and Control substation is located east of Aviation Boulevard and approximately 430 feet south of the light lane centerline. All existing light support structures are frangible.

B. Proposed Improvements

While the runway centerline will shift to the south, the landing threshold will essentially remain aligned with the current threshold. All existing ALSF-2 light bars will be removed, and new threshold bar and new light stations will be constructed at locations shown on the ALSF-2 Plan and Profile drawing depicted in **Figure 8.2**. New frangible light support structures will be erected and the existing ALSF-2 fixtures will be salvaged and reused. New lamps will be provided for steady burning fixtures and the flashers will be reused. No revisions are anticipated that will affect the existing Runway 25L ALSF-2 Power and Control Station. Almost all existing ALSF duct work will be retained and reused. The existing conduit and manholes serving the threshold bar and light stations out to station 11+43 are located approximately 100 feet south of the existing runway centerline. Three of these existing manholes will be in the new paved blast pad. All manholes in the blast pad will be aircraft load rated.

The ALSF-2 light plane is designed to begin a positive 2% slope beginning at station 2+00 and ending at station 12+45. All lamp centers east of station 12+45 will be erected at a constant elevation of 116.1 feet mean sea level (msl). The light plane provides approximately 25.9 feet of clearance above the top of rail on the railroad track and approximately 26.5 feet of clearance above Aviation Boulevard.

The portion of the ALSF-2 east of Aviation Boulevard is currently accessed via a paved service road. This service road will remain in service and stub sections will be constructed from it to each light standard location. A paved maintenance area will be constructed around each light station east of Aviation Boulevard and a low impact resistant (LIR) structure erected.

All existing ALSF-2 circuit wiring will be removed and new electrical cables will be installed from the existing Power and Control Station to each light bar. FAA Standards will be observed for lightning protection and grounding.

As noted earlier, FAA is required to procure/amend the existing agreement allowing installation of a light station within the MTA railroad right of way (Station 12+45). The reminder of the ALSF-2 system is within property currently owned by LAWA and will require modifications to the land agreements between the FAA and LAWA.

8.3.2 Runway 7R MALSR (Medium intensity Approach Lighting System with Runway alignment indicators)

A. Current Conditions

The Runway 7R MALSR is located on the runway centerline west of the Runway 7R landing threshold and extends 2,400 feet to the west. The light lane crosses a service road and a deep depression between station 12+05 and station 16+00. The light support at station 14+00 is approximately 42 feet high. It consists of a steel structure approximately 20 feet high and an MS-20 LIR structure. Power and flasher control wiring is carried to station 14+00 by a messenger cable between a point about 50 feet west of station 12+05 and station 14+00.

Stairways providing access to the Power and Control Station and station 14+00 are not currently being used or maintained. All light stations out to station 24+00, except Station 14+00, use direct coupling mounting or electromechanical tubing (EMT) LIR structures. The MALSR power and control shelter is 325 feet south of station 10+00.

B. Proposed Improvements

The MALSR center line will be moved to coincide with the new runway centerline as depicted in **Figure 8.2**. The existing light fixtures will be salvaged for reuse. The existing foundations will be removed and disposed of off-site. The design will retain the existing Power and Control Station without modification. All existing underground wiring will be replaced with new cables in PVC conduit meeting existing electrical specifications. All foundation designs and LIR structures will conform to FAA standards. The contractor will provide new LIR support structures as shown on Figure 8.2. The steel tower at station

14+00 will be replaced with a similar structure meeting the height requirements of the new system. The existing MS-20 LIR structure will be retained and reinstalled. New light cans will be provided and installed at the Runway 7R threshold bar. Service road construction, grading and brush removal will be accomplished as shown on the plans.

8.4 ILS Localizers and Far Field Monitors

8.4.1 Runway 25L Localizer/DME

A. Current Conditions

The Runway 25L Instrument Landing System (ILS) is an FAA Mark 20 system certificated to perform to Category III (CAT III) standards. In order to provide CAT III signal integrity, a 20 element Log Periodic Dipole (LPD) antenna array was installed by FAA several years ago. The antenna array is presently located 935 feet west of the Runway 7R threshold. The Localizer/DME equipment shelter is approximately 400 feet north of the array. No revisions to any equipment within the localizer equipment shelter are anticipated.

B. Proposed Improvements

A new concrete foundation will be designed for the relocated 20-element LPD array, see **Figure 8.3**. The new 20 element antenna foundation will be located 1,050 feet west of the runway 7R landing threshold. Some relatively minor fill work will be required towards the south end of the new foundation. The antenna system will be relocated to the new foundation. The existing foundation will be demolished and removed form the site. A new 4-way 4-inch duct will be provided from the existing antenna cable pull box to the relocated array. New power, control and Heliax cable will be provided between the relocated array and the existing Localizer equipment shelter for termination by FAA. FAA Standards will be observed for lightning protection and grounding. Ground check markers will be surveyed and installed which meet the system's requirements.

8.4.2 7R Localizer/DME

A. Current Conditions

The 7R Localizer antenna is located on a wooden platform approximately 1,800 feet east of the 25L landing threshold on extended runway centerline. The Localizer/DME equipment shelter is located approximately 330 feet north east of the antenna near the 7L Localizer shelter and fiber optic node shelter.

B. Proposed Improvements

The existing antenna system will be salvaged and stored. The shelter will be removed and stored. The foundations will be demolished 12 inches below surrounding soil and abandoned. The wooden platform will be demolished and disposed of off site. A new antenna foundation will be installed at ALSF-2 Station 10+60. A new equipment shelter site will be provided as shown on the drawings 400+ feet southwest of the antenna centerline, see Figure 8.2. The existing shelter will be relocated to the new foundations. Power and control will be provided from existing sources near the new shelter site. A 4-way 4-inch duct bank will be installed between the Localizer shelter and the antenna. New power cables, control cables and Heliax feedlines will be provided for termination by FAA. Power and fiber optic service will be extended from the existing FAA underground vault near the proposed shelter site. FAA standards for lightning protection and grounding will be observed. Ground check markers will be surveyed and established as required.

8.4.3 25L Far Field Monitor:

A. Current Conditions

The two existing 25L Far Field Monitor (FFM) antennas are located near the existing 25L Middle Marker on runway centerline extended. The antennas are mounted on MG-30 LIR towers. The FFM system derives power from the Middle Marker (MM) site and its data cable junctions in the MM shelter.

B. Proposed Improvements

Drawings will be prepared which direct the contractor to disassemble the FFM, store the materials on site, construct foundations identical to the existing foundations and reinstall the complete FFM system on the new foundations, see Figure 8.2. The existing foundations are to be removed and disposed of off site. The plan will require installation of new conduit and pull boxes and extension of the FFM cables to the MM shelter. Power and control wiring extended will be of same class and type as that being replaced. A paved maintenance area will be constructed using the same materials as that employed in the ALSF-2 light station maintenance areas.

8.5 Middle/Inner Markers

8.5.1 25L Middle Marker

A. Current Conditions

The 25L Middle Marker (MM) is located approximately 2,700 feet east of the runway 25L landing threshold on runway centerline extended, see Figure 8.2. The site consists of the MM shelter and a 6 feet high triangular tower. The MM antenna is mounted on the tower. The shelter is believed to be fully serviceable and is not slated for replacement as part of this contract.

B. Proposed Improvements

FAA Order 6750.16C, Section 4.40.c, "Location Tolerances" states that the "*Middle marker: +/- 500 feet longitudinal and +/- 300 feet lateral*" from the touchdown zone. The runway centerline shift is well within the 300 foot lateral tolerance; therefore there is no need to relocate this facility.

8.5.2 7R Middle Marker

A. Current Conditions

The 7R Middle Marker (MM) is located 3,115 feet west of the runway 7R landing threshold on runway centerline extended, see Figure 8.3. The site consists of the MM shelter and a 6 foot high triangular tower. The MM antenna is mounted on the tower. The shelter is in satisfactory condition and is not slated for replacement under this contract.

B. Proposed Improvements

As with the 25L MM, there is not need to relocate this facility. MM beacons are no longer required for CAT I ILS installations (FAA Order 6750.24D Instrument Landing System and Ancillary Electronic Component Configuration and Performance Requirements, 7b, 3/21/00). The 7R MM may be removed if needed to accommodate other airport/airfield improvements.

8.5.3 25L Inner Marker

A. Current Conditions

The Inner Marker (IM) is located on runway centerline approximately 980 feet east of Runway 25L landing threshold. Since Order 6750-16C Chapter 4, Section 40, Paragraph c, tolerance for IM location allows only +/-50 feet both laterally and longitudinally, this facility must be relocated unless a National Change Proposal (NCP) is obtained. A small metal blast deflector is installed about 10 feet west of the IM shelter

B. Proposed Improvements

The contractor will be directed to duplicate the existing foundations at the new location shown on the drawings, see Figure 8.2. The IM equipment will be removed and stored and later installed on the new foundation. An extension of power and control will be provided. The blast deflector will no longer be required and will be removed and disposed of off site

8.6 Glide Slope Systems

8.6.1 25L/25R Glide Slope

A. Current Conditions

The Runway 25L and Runway 25R Glide Slope facilities are located 1,000 feet west of the runway 25L landing threshold. They share a site midway between the centerlines of Runways 25L and 25R. As show in **Figure 8.4**, the antenna towers are approximately 30 feet apart north to south. The systems are Mark 20 Capture Effect Glide Slope (CEGS). The antenna towers are approximately 50 feet in height. The two Glide Slopes facilities share a common power and fiber optic control service. The Runway 25L and Runway 25R GS sites share a common lightning protection and grounding counterpoise system.

B. Proposed Improvements

The criteria for **image-type glide slopes**, (FAA Order 6750-16C Chapter 3, Paragraph 33.c.1), states that the antenna shall be located outside the runway Obstacle Free Zone (OFZ) as defined in the FAA Advisory Circular (AC) 150/5300-13 – Airport Design. As discussed in Section 3 – Airfield Development of this report, the runway OFZ for large aircraft is defined by a series of surfaces starting with a flat surface centered along the runway centerline spanning 400 feet.

Allowable antenna height calculations per FAA AC 150/5300-13, Airport Design, Change 7, Chapter 3, Paragraph 306 are:

- For the CAT I Runway 25R at the edge of the 200 foot OFZ between the runway and proposed Taxiway AC an antenna tower 40.61 feet high can be used. However, the Glide Slope antenna should be located outside the Runway Safety Area (250' from the runway centerline). A 35 foot null reference antenna tower may be installed or a 50 foot Capture Effect antenna tower can be accommodated 260 feet from the runway centerline. The spacing between the centerline of Taxiway AC and the centerline of runway 25R is 400 feet. Taxiway AC is planned for Airplane Design Group V (ADG-V) having a Taxiway Object Free Area (TOFA) width of 160 feet either side of centerline; (160 + 250 = 410 feet). Hence, there is an overlap between the runway RSA and the proposed taxiway OFA.

  Should an end fire antenna system be selected for the CAT I Runway 25R, the end fire glide slope antenna system may be sited within the handbook tolerances. The equipment shelter may be located as close as 275 feet to the runway centerline (6750-16C, Paragraph 32, Section e). The shelter must be subsurface since the runway 25R RSA and the proposed Taxiway AC TOFA overlap by 10 feet. Taxiway B to the north is even closer to runway 25R and does not offer any reasonable siting opportunities for a glide slope facility.

- For CAT II/III Runway 25L at the edge of the 200-foot OFZ an antenna tower 25.06 feet high can be used. The Glide Slope antenna should be located outside the Runway Safety Area (250 feet from the runway centerline). A 50-foot Capture Effect Antenna tower can be accommodated 325 feet from the Runway 25L centerline.

  Proposed Taxiway AC centerline is 400 feet north of the runway 25L centerline. Locating the Glide Slope to the north of Runway 25L poses the same problem between the RSA and taxiway OFZ as previously stated.

  Taxiway A is 445 feet south of runway 25L. As noted earlier, the TOFA for Taxiway A is 160 feet on either side of centerline; (160 + 325 = 485 feet). None of the Runway 25L to adjacent taxiway spacings are adequate to accommodate a 50-foot CAT III Capture Effect antenna mast. Therefore, this option is not available if the Center Taxiway is extended eastward.

It is recommended that the existing 25L and 25R Glide Slope systems be retained at their present location. If left in place, no change will be required for the Runway 25R GS. The Runway 25L GS will require relocation of the three antennas on the tower to correct for proximity error due to the runway centerline shift. Antenna adjustments will be performed by FAA.

8.6.2 7R/7L Glide Slope:

A. Current Conditions

The Runway 7R and Runway 7L Glide Slope facilities are located 1,075 feet east of the Runway 7L/7R landing threshold. They share a site midway between the centerlines of Runways 7R and 7L. The antenna towers are approximately 30 feet apart north to south. The systems are Mark 20 Capture Effect Glide Slope (CEGS). The antenna towers are approximately 50 feet high, see **Figure 8.5**. The two Glide Slopes share a common power and fiber optic control service. The 7R equipment shelter is approximately 8 by 12 feet. The 7L shelter is 10 by 30 feet. The 7L and 7R GS sites share a common lightning protection and grounding counterpoise system.

B. Proposed Improvements

The shelter, tower, and antennas will be removed and stored for reuse. The foundations will be removed and disposed of off-site. The power and control wiring and fiber optics will be extended to the relocated facilities.

New Glide Slope foundations will be constructed at the locations shown, see Figure 8.4. For the Runway 7R glide slope, the Capture Effect distribution and combining units will be removed and new **Null Reference** distribution and combining units installed. The antennas and tower sections will be installed at the heights specified by the FAA. Final cable cutting and tune up will be by FAA. FAA standards for lightning protection and grounding will be observed. The Runway 7R glide slope relocation site is 280 feet south of the relocated runway 7L centerline. An antenna tower height of approximately 41 feet can be accommodated. This is more than sufficient for either a null reference or a sideband reference antenna system and will allow for obstruction lighting and lightning protection air terminals.

The site has upslope terrain in the far field and is not well suited for use with a **sideband reference** antenna configuration therefore, a null reference system is proposed for the Runway 7R glide slope. It should be noted that the glide slope critical area would overlap Taxiway A for either a null or a sideband reference glide slope system. This will require aircraft to hold and wait for ATC clearance prior to entering the glide slope critical area. This will have minimal impact on airport operations due to the small percentage of departures to the east.

For the Runway 7L glide slope, the spacing between the Runway 7L centerline and the centerline of proposed taxiway AC is 400 feet. The half width runway RSA is 250 feet and as noted earlier the TOFA is 160 feet. If all these dimensions are added, this exceeds the Runway to Taxiway separation by ten (10) feet. To mitigate this problem, it is proposed that an end fire system be installed within the RSA as allowed by Order 6750.16C Paragraph 32d and e. The shelter must either be below ground within the taxiway OFA or a NCP granted to allow penetration of the taxiway OFA. If above ground, the end fire equipment shelter must be located 275 feet from the runway centerline which would place it 125 feet north of the Taxiway AC centerline and non in compliance with the TOFA requirements. The rear antenna, shelter, and clearance antennas of the end fire array conflict with Taxiway CC and its TOFA. In order to install this glide slope Taxiway CC as proposed need to be realigned or reconfigured. A siting study conducted of the infield area north of Runway 7L offers even less space for a glide slope system.

8.7 Runway Visual Range (RVRs)

8.7.1 Midfield Runway Visual Range (RVR)

A. Current Conditions

The Midfield RVR is located approximately 5,600 feet east of the Runway 7L landing threshold and midway between the Runways 7L and 7R centerlines, see **Figure 8.6**. It consists of the Visibility sensor and an equipment rack supporting the RVR electronic equipment necessary to process the RVR sensor data and transmit it to the Airport Traffic Control Tower (ATCT). Power and Control are provided to the site.

B. Proposed Improvements

Several combinations of sensor height and locations were explored. An option that will meet the RVR siting standards is to locate the RVR 283 feet south of the Runway 25L centerline. This will provide two feet of clearance to the edge of TOFA if taxiway A is limited to ADG V. This will allow an RVR support structure of approximately 41.6 feet high.

8.7.2 25L Rollout RVR

A. Current Conditions

The rollout RVR is located just easterly of the 7R/7L glide slope facilities, see Figure 8.5. It consists of the visibility sensor and an equipment rack supporting the RVR electronic equipment necessary to process the RVR sensor data and transmit it to the Air Traffic Control Tower (ATCT). Power and fiber optic control is provided to the site.

B. Proposed Improvements

The Future ALP Sheet 3 of 15 shows the Rollout RVR to be relocated midway between the centerline of the proposed midfield taxiway AC and the centerline of runway 25R. Several combinations of sensor height and locations were explored. A solution that will meet the RVR siting standards is to locate the RVR 283 feet south of the runway 25L centerline. This will provide 2 feet of clearance to the edge of taxiway A OFA if taxiway A is limited to Group 5 Aircraft. This will allow an RVR support structure of approximately 41.6 feet.

8.8 Airport Surface Observation System (ASOS)

8.8.1 Airport Surface Observation System (ASOS):

A. Current Conditions

The ASOS is located approximately 2,500 feet westerly of the landing threshold of runway 25L and midway between the 25L and 25R centerlines. This facility is owned and operated by the National Oceanic and Atmospheric Administration (NOAA). It consists of various weather sensors and signal processors which provide the official airport ceiling, visibility, wind direction and velocity, rain fall amounts, temperature and humidity values. Power and control service is derived from the adjacent 25L and 25R Glide Slope facilities.

B. Proposed Improvements

Assuming that the 25L and 25R Glide Slope facilities are left as presently located, the ASOS will be relocated to new foundations identical to the existing foundations 850 feet easterly of the present ASOS site. The new ASOS foundations will be midway between the Runway 25L and 25R centerlines and approximately midway between the existing touchdown RVR and the existing 25L and 25R glide slope shelters. The existing foundations will be removed and disposed of off-site. Power and control circuits will be extended to the relocated ASOS equipment. ASOS alignment, calibration, and return to service will be performed by NOAA.

8.9 Low Level Wind Shear Sensor (LLWAS)

8.9.1 Low Level Wind Shear Sensor (LLWAS)

A. Current Conditions

The LLWAS site is located approximately 5,350 feet east of the landing threshold of runway 7L and midway between the centerlines of runways 7L and 7R, (see Figure 8.6) The facility consists of a 30 foot high Low Impact Resistant (LIR) tower with sensors mounted on it. It includes the electronic equipment required to process the sensor data and transmit it to the Air Traffic Control Tower (ATCT).

B. Proposed Improvements

The LLWAS will be relocated to a site near the midfield RVR. The existing foundations will be duplicated and power and control service extended to the LLWAS. A solution that will meet the RVR siting standards is to locate the LLWAS 283 feet south of the runway 25L centerline. This will provide two feet of clearance to the edge of Taxiway A TOFA if taxiway A is limited to ADG V. This will allow an LLWAS support structure of approximately 41.6 feet.

8.10 Precision Approach Path Indicator (PAPI)

8.10.1 7R Precision Approach Path Indicator (PAPI)

A. Current Conditions

The 7R PAPI projects a visual glide path which corresponds to the electronic signal transmitted by the 7R Glide Slope facility. The PAPI path allows the pilot to visually establish the aircraft on an approach path corresponding to the 3 degree electronic guidance transmitted by the Glide Slope facility. The PAPI employs four light housing units. Each light unit is aimed at a slightly different vertical angle such that the pilot will see all red lights when well below path, one white and three reds when slightly below path, two red and two white when on path, three white and one red when slightly above path and all white when well above the glide path, see Figure 8.5.

B. Proposed Improvements

The design for the PAPI will require the contractor to remove the existing system and place it in storage. New foundations will be constructed in the same relationship to the runway (as relocated) as presently exist. Note that the PAPI Light Housing units are located inside the Runway OFZ. These units are frangible and their location is fixed by function. They are allowable within the runway OFZ. The power and control equipment rack is not fixed by its function and will be located outside the Runway OFZ (beneath the 3:1 plane). Electrical power and control will be extended. The existing PAPI system will be reinstalled. Certification and return to service will be by FAA.

8.11 Airport Surface Detection Equipment (ASDE) Reflectors

8.11.1 ASDE Reflectors

A. Current Conditions

Two or more reflectors are located on the south airfield for the purpose of ASDE system calibration. The location of these reflectors (targets) has been chosen by FAA to correspond with desired alignment features of the ASDE.

B. Proposed Improvements

The contractor will be directed to remove the existing ASDE reflectors and place them in storage pending installation at new locations. Coordination with the FAA will be conducted to define new locations for the reflectors. The selected locations will be described on the plans along with details of the foundation required.

8.12 NAVAID Materials Procurement

The items to be procured to facilitate the relocation of the various NAVAID facilities are:

- Conversion Kit, Mk. 20 Glide Slope from Capture Effect to Null reference configuration. This material is FAA contract specific and can be purchased only from the original manufacturer or through FAA procurement channels.

- Conversion Kit, Mk. 20 Glide Slope from Capture Effect to End Fire and the End Fire antenna array. This material is FAA contract specific and can be purchased only from the original manufacturer or through FAA procurement channels.

- Low Impact Resistant (LIR) structure materials for MALSR, ALSF-2, FFM, RVR, LLWAS sites (MG-20, MS-20, MG-30 and MG-40). This material is available from only one manufacturer but may be purchased from several supply sources.

- Electrical cables, conduit, connectors and electrical fittings meeting FAA Advisory Circular standards may be obtained on the open market.

- Acceptable lightning protection and grounding materials are over the counter.

6. Standard construction materials such as gravel, asphalt, reinforcing bar and concrete are commonly procured on the open market

These materials are to be purchased and installed by the LAWA Contractor in accordance with the specifications that will be provided with the construction documents. Those items that are provided by only one manufacturer will be stated in the documents and procured as sole source items.

9.0 CONSTRUCTION MATERIAL AVAILABILITY

9.1 Introduction

This section presents analyses performed on the availability of the major construction materials items that are likely to be needed for this project. These analyses are limited to the major paving items and airfield lighting and signage materials projected for procurement. This section analyzes several possible material sources considering two of the possible phasing options, full runway or a partial runway closure with a displaced threshold. These options are further discussed in **Section 11 – Construction Packaging and Phasing** of this report.

The conclusion presents a brief summary of the options provided, highlighting the possible availability issues and restrictions.

9.2 Assumptions

This report is a preliminary document and is intended to only provide LAWA with broad guidelines on material procurement and availability. All possible material sources have not been exhausted in preparing these studies and reasonable limits were set with regard to the likelihood of possible material and equipment sources. These limits were based on conservative engineering judgment and cost implications.

9.2.1 Existing Conditions

A large percentage of the construction that occurs on the airfield at LAX, takes place within the runway and taxiway safety areas. Due to FAA regulations and safety requirements runways and taxiways must be closed during the construction period. Therefore, construction on the airfield at LAX, one of the busiest commercial airports in the world, could have a vast impact on airport operations and, therefore, affect the airlines and other airport tenants. To keep these potential impacts to LAX's tenants to a minimum; LAWA has selected Portland Cement Concrete (PCC) as the preferred construction material for pavements. This is primarily due to the longevity of this material as compared to bituminous asphalt pavements. The design of this project assumes that most full strength pavements (taxiways and runways) will be constructed of PCC. Other temporary, shoulder, and roadway pavement is assumed to be constructed of Asphalt Concrete (AC).

9.3 Materials

9.3.1 P-501 Portland Cement Concrete (PCC)

A preliminary estimate on the quantity of P-501 PCC material needed for this project is in excess of 175,000 cubic yards. This material must be supplied in accordance with *FAA Advisory Circular 150/5370-10A – Specification for Airport Construction*, which specifies strict criteria for any concrete to be used as airfield pavement.

Typically, large airfield paving projects at LAX have produced P-501 either at a central ready-mix plant, or on-site using a portable batch plant. In order to be effective and competitive, local ready-mix plants must be located relatively close to the airport so that concrete truck trips can be short and frequent. These plants should also be capable of producing material to the levels required to meet the construction schedule.

A. Local Ready Mix Suppliers

Initial inquiries yielded three main ready mix suppliers in this region:

Westside Premix
5299 W 111th St.
Los Angeles, California

Catalina Pacific Concrete Co
339 South Aviation Blvd.
El Segundo, California

A&A Ready Mix Concrete Company
134 W Redondo Beach Blvd.
Gardena, California

It is anticipated that these suppliers would be interested in supplying concrete for this project.

- Westside Premix
  Westside Premix is located on 111th St. just east of Aviation Blvd. This facility is located directly adjacent to the airport property and due to their proximity; they have provided most of the ready mixed concrete for past projects at the airport. The batch plant is capable of producing approximately 150-200 cubic yards of concrete per hour each day without significant impacts to their other customers.

- Catalina Pacific Concrete Co.
  Catalina Pacific Concrete is located on Aviation Blvd just 3.5 miles from LAX. The batch plant is capable of producing approximately 100-150 cubic yards of concrete per hour each day without significant impacts to their other customers.

- A & A Ready Mix Concrete
  A & A Ready Mix Concrete has two ready mix batch plants located 11 miles from LAX in Gardena. These two plants are capable of supplying the airport with between 300-350 cubic yards of concrete per hour.

  Rates of production fluctuate at both manufacturers and are dependent on several factors such as aggregate source, local demand during the actual construction, and weather conditions.

B. On-Site portable batch plant

Many of the large runway reconstruction projects that have been completed in the last 10 years at other airports in the United States have commonly utilized on-site batch plants. On-site batch plants can be very effective because they are usually under the direct operation and control of the general contractor. This allows the general contractor to have direct control over the operation, production, quality control, and material used in the plant without having to rely on a separate company when these issues arise.

On-site batch plants require a significant amount of space to function effectively. It is essential that there is adequate space for stockpiling materials, room to maneuver trucks, space for silos, trailers, wash-out pits, conveyor belts and other equipment so that operations can continue around the clock safely and effectively. A typical double drum on-site plant requires a minimum footprint of 300 feet by 500 feet to function effectively. On-site batch plants also have a vertical component. Batch plant silos and associated equipment can extend to a height of 80 feet. The LAX Master Plan has identified a limited number of staging areas where a portable batch plant meeting these size criteria could be located.

C. Aggregates

In the past, LAWA has specified that Hanson Aggregates, formally known as Livingston-Graham, provide all aggregates used in P-501 concrete. This was done because aggregate obtained from Hanson's quarries often produced concrete that exhibits very high flexural yields and strength.

The fine aggregate source is expected to be the Hanson Quarry in Irwindale, Ca. The Hanson Quarry is a 700 acre site that is permitted to a depth of 200 feet. Unfortunately, the sand excavation is nearing the 200 foot depth. Currently, Hanson Aggregates is in negotiations with the City of Irwindale to issue a new permit by the City that will allow sand excavations to continue within three months.

The coarse aggregate source is expected to be the Hanson Quarry in Eagle Valley, Ca. The Eagle Valley quarry has a significant supply of coarse aggregate and should be able to produce enough rock for this project.

There is the possibility of pre-buying and supplying the contractor with the aggregates. The advantage with this method is that it ensures a guaranteed supply of aggregates for the project. However, this method does have some disadvantages. The owner would be responsible for the quality and supply of the aggregate, and this raises the potential of disputes with the contractor on the pay factors for the P-501. Also, by removing this item from the bid package, it also removes from the bid the contractor's ability to obtain competitive prices for the aggregate.

9.3.2 Asphalt Concrete Pavement

The current design criteria call for 40 foot wide AC shoulders on Runway 25L and 35 foot wide shoulders with a 15 foot wide dust cover on the center taxiway. The LAX master plan also stipulates that all service roads must be paved. These facilities will require a significant amount of asphalt to be placed on the airfield. A preliminary estimate of the quantity of asphalt material needed for the project is 15,000 tons. The FAA requires P-401 asphalt concrete in areas where full strength pavement is required. However, in the past, the FAA has allowed modifications to the P-401 specification for AC used on the airfield at locations such as shoulders and dust covers, that are not intended to support daily aircraft traffic. This modified AC is similar to standard P-401 with the Percent Within Limit (PWL) conditions and payment penalties associated with them deleted. This modified P-401 mix can be produced and placed at the cost of traditional "green book" street mix and can provide a significant cost saving over traditional P-401.

A. Local Suppliers

Initial inquiries yielded three main suppliers in this region, as follows:

- Blue Diamond Materials
- Vulcan – Calmat
- All American Asphalt

It is anticipated that both Blue Diamond Materials and All-American Asphalt would be interested in supplying this project. However as a result of previous experiences, there remains a question over Vulcan-Calmat's interest in supplying any P-401 material. This could possibly change for this project due to the large quantities involved. All three of these suppliers were contacted for general input on the material availability and procurement.

- Blue Diamond Materials

  Blue Diamond Materials has being successful in supplying similar projects requiring compliance with strict specifications. Some of the company's asphalt batch plants are located in the general airport vicinity and could reasonably be expected to supply this project. These are as follows:

  - Irwindale (No.1)
  - South Gate
  - Inglewood
  - Sun Valley
  - Victorville
  - Pier 400 Portable plant

This portable plant may be relocated prior to the start of the construction period. Also, a second portable plant, presently in Oxnard, may also become available.

- Vulcan - Calmat

Vulcan-Calmat has also supplied P-401 asphalt material in the past, but due to losses incurred on previous work as a result of not achieving the required quality, they have not recently pursued airfield work aggressively. Initial inquires with the company indicate that they would be interested in taking a closer look at this project.

- All American Asphalt

All-American Asphalt is interested in producing P-401 material. However, the general consensus is that there remains a question over their ability to produce the quality of material necessary for P-401. However, their interest in this project will help to keep the suppliers more competitive.

B. Aggregate Source (for Asphalt Concrete)

The primary aggregate source is expected to be San Gabriel Aggregates from Irwindale, California. There are three main producers of aggregates in this area, namely:

- Unite Rock – (A Division of Blue Diamond Materials)
- Hanson Aggregates
- Vulcan Materials

Other sources may also be used for the production, especially with the more distant batch plants such as Corona. Both Blue Diamond and Hanson have previously imported aggregates from Canada and Mexico respectively. Obviously, there are unloading and hauling costs associated with this option and further investigation of the feasibility of this method may be warranted at a more advanced stage in the design process.

In summary, initial inquires indicate that sufficient aggregate material can be made available using local and possible more distant sources, and no capacity problems for aggregates are anticipated. However, where several different sources of aggregates are employed, this introduces the issue of separate quality control processes as well as separate paving operations using different mix designs for each source.

C. Asphalt Binder

At this stage in the design process, the actual type of asphalt binder that is proposed for use in the mix design is not confirmed. For the purpose of this analysis it was assumed a modified binder such as a Performance Grade 70-10 would be employed as this would be the more stringent criteria. Initial contact was made with Paramount Petroleum Corporation in Paramount, California; however, they were reluctant to discuss specific production methods. Nevertheless, it must be considered that the Paramount Petroleum Corporation's refinery facilities near LAX are the largest manufacturer of asphalt products in the Southwest. This facility produces approximately 54,000 barrels per day, 30% of which are asphalt products. No capacity problems are anticipated, provided that reasonable notice is given of the project schedule requirements.

9.4 Airfield Lighting and Signage

9.4.1 Project Requirements

A preliminary review of the project scope and existing airfield layout reveal that the following Airfield Lighting and Signage materials should reasonably be anticipated to be included in the final design package:

- Base Cans
- Elevated and In-pavement Runway Edge Lights
- Taxiway Edge Lights
- Runway Distance Remaining Signs
- Taxiway Guidance Signs
- Centerline Lights
- Touchdown Zone Lights (TDZ)
- In-pavement Guard Lights

- Runway Guard Lights (RGL)
- Constant Current Regulators (CCR)
- Lighting Cable, Conductors and Conduit
- Isolation Transformers, Connector Kits, Etc.
- Fiber Optics and Patch panels
- Modifications to Airfield Lighting Control And Monitoring System (ALCMS)

9.4.2 Airfield Lighting and Signage Suppliers

Three of the larger national airfield lighting suppliers were contacted concerning their current production turnarounds for filling orders placed by contractors on large projects such as this one. They were as follows:

- Siemens Airfield Solutions
- Crouse Hinds Airport Lighting Products
- Honeywell Airport Systems

All three companies manufacture FAA approved products and supply the majority of the airfield lighting materials utilized in major airfield construction projects nationally. None of the companies contacted maintain the quantities of materials on hand that would be required for a project this large. The materials would be manufactured upon receipt of a firm purchase order.

None of the contacted companies supply airfield lighting conductors (cable). Those materials are purchased from other suppliers which supply general electrical materials and generally are readily available. Delivery timeframes range from overnight air delivery for small quantities to approximately 6 weeks for large orders with the best market price in mind.

The remainder of the materials are those that the manufacturers noted above are accustomed to supplying. In general, those materials could be on site within about 8 to 10 weeks from receiving the purchase order. One exception would be the large (50 or 75 kW) CCRs (oil filled), which take about 12 to 17 weeks to deliver. Preliminary delivery information from each of the manufacturers is included in **Table 9-1** below.

TABLE 9-1 Lighting Material Availability	
Equipment	**Delivery (weeks)**
Siemens Airfield Solutions	
Base Cans	5 to 6
Elevated Runway Edge Lights	4
In-Pavement Runway Edge Lights	4 to 5
CCR	6
Taxiway Guidance Signs	6 to 7
Isolation Transformers, Connector Kits, etc	4
Crouse Hinds Airport Lighting Products	
Base Cans	5 to 6
Elevated Runway Edge Lights	6 to 8
In-Pavement Runway Edge Lights	8 to 10
CCR	8 to 10
Taxiway Guidance Signs	10 to 12
Isolation Transformers, Connector Kits, etc	4
Honeywell Airport Systems	
Base Cans	5
Elevated Runway Edge Lights	3 to 5
In-Pavement Runway Edge Lights	3 to 5
CCR	8 to 10
Taxiway Guidance Signs	8 to 10
Isolation Transformers, Connector Kits, etc	4

9.4.3 Material procurement and Phasing Impacts

The two phasing scenarios to be discussed in this section are:

- With a reduced runway length, partial runway closure (runway length reduced and threshold displaced) and;
- Full runway closure with expedited construction. (The airport operational impacts of these alternatives are not addressed in this section of the report)

A. Partial Runway Closure

This option most closely mimics a conventional construction project, although dealing with partial runway construction has its own inherent problems. From a materials procurement standpoint, it allows the contractor his usual procurement and delivery process. However, it does raise labor costs due to reduced daily productivity and, in some cases, shift differentials.

B. Full Runway Closure

This option poses significant logistics problems, both with labor and materials. All airfield lighting and signage materials must be pre-purchased and on site prior to commencing the extended runway closure. If they are not, the likelihood of some critical material impacting the return of the runway to service increases significantly. Stockpiling, storing, securing, and tracking this amount of material will take significant facilities and manpower. From a labor standpoint, a larger than normal supervisory force would be required to keep all tradesmen on task and to prevent needless re-work, which could extend the closure. If the materials are pre-purchased by the owner and later furnished to the contractor for installation, the potential for warranty and material security issues while in storage increases greatly.

Regarding concrete production, a full closure would lead to the requirement for at least one and possibly two portable batch plants located on-site or in close proximity to the airport. Several ready mix suppliers have indicated that they could not dedicate their major batch plants to this one project for a significant period of time and would need to perform a thorough in-depth analysis if this phasing option were chosen.

If a total runway closure option is allowed, it is assumed that Runway 25L would only be permitted to be closed for a maximum of four (4) continuous months. This would allow approximately 78 working days (assuming 1 month to complete the other construction activities, and a 6 day work week) for concrete paving operations to occur.

Therefore, concrete would have to be produced at an average rate of 2,300 cubic yards per day and hauled and placed on site. The concrete batching processes would have to be capable of producing concrete at a much higher rate, on the order of 3,000 to 5,000 cubic yards per day, to accommodate large pours where little tie-in work would be required.

With respect to the phasing options, it is not anticipated that concrete capacity would be a problem with the partial closure option. In regard to the full closure option, the initial information received from the suppliers indicates that the necessary concrete production rates could be achieved by a combination of on-site plants as well as dedicating several of the large off-site production plants to the project.

10.0 BRIDGE ENGINEERING

10.1 Introduction

Portions of the airfield improvements included in this program are proposed to be constructed over an existing bridge structure that spans over Sepulveda Boulevard, (California State Route 1). This section presents the preliminary bridge engineering analyses included in the Advanced Planning Study (APS) prepared by Wei Koo and Associates. This APS was submitted as part of a Combined Project Study Report/Project Report (PSR/PR) submitted to Caltrans on September 16, 2003. This document is currently under review by Caltrans.

10.2 Site Description

Sepulveda Boulevard crosses under the Los Angeles International Airport South Airfield via the Sepulveda Subway. This section of Sepulveda Boulevard is a State of California highway, Route 1 (SR-1). Landing and departing aircraft are carried across the roadway by the International Airport Overcrossing, also known as the Sepulveda Subway. The existing International Airport Overcrossing structure carries two main runways, 25R and 25L, four taxiways, and multiple vehicle access roads over SR-1. Los Angeles World Airports (LAWA) is improving the safety of the airfield by moving Runway 25L south by 55.41 feet, adding a new center taxiway between the existing runways 25L and 25R.

The existing runways and taxiways cross over Sepulveda Boulevard on strengthened sections of the International Airport Overcrossing. The proposed bridge improvements include strengthening the existing International Airport Overcrossing at two locations to accommodate the runway widening and proposed taxiway. The sections to be strengthened include 55.41ft to the south of Runway 25L, and the 244.6 feet section between Runway 25L and Runway25R, also referred to as the Center Taxiway. Furthermore, the bridge work includes the upgrade of Runway 25L to carry a new large class of aircraft currently scheduled for passenger service at LAX in late 2006. This new aircraft loading requires strengthening of the approach slab seat on Runway 25L.

10.3 Existing Condition

The Sepulveda Subway Tunnel structure was originally constructed in 1952 as a two span continuous concrete rigid frame structure. The superstructure is a solid reinforced concrete slab spanning 80 feet over each direction of vehicular traffic. There are three turnouts along the roadway where the span lengths increase from 40 feet to 50 feet. The runways cross the structure at a 6°53’32” degree skew. The total length of the tunnel is 1,009.5ft, constructed in 60 feet wide segments separated by expansion joints and shear keys.

The tunnel has an elaborate ventilation system, consisting of 7 feet, 10 inch by 7 feet, 10 inch boxes running under the roadway along each side of the piers, and similar boxes behind each abutment. A maintenance agreement between the City of Los Angeles and the State of California (Caltrans) confers maintenance responsibility of the lighting, ventilation, drainage and superstructure to the City. Caltrans has maintenance responsibility over the bridge substructure.

In 1979, portions of the bridge superstructure were strengthened by adding 3 feet deep simple span slabs on top of the existing structure. A 0.15 feet gap was created between the top of existing deck and the bottom of the strengthened slab. This gap allows the strengthened slab to carry all of the live loads. The strengthened slab is connected to the existing subway tunnel at the abutment and center pier. The strengthened slabs were constructed only at Runway 25L, and Runway 25R, and Taxiways A, B, & C.

In 1999, Taxiway C was relocated by adding an 87.9 feet long single span bridge immediately adjacent to the north edge of the bridge.

10.4 Site Conditions

10.4.1 Falsework clearance

Based on the analysis and proposed bridge work, no falsework will be required. The 1979 strengthening project, which is very similar to the proposed project, did not require falsework. The new slab would be placed on a two inch mat of styrofoam. The styrofoam would limit the forces transferred from the new slab to the existing deck.

10.4.2 Utilities

A number of utility lines are carried in the existing overcrossing structure. The fire lines crossing through a slot in the existing rigid frame structure would be protected in place during construction of the slab strengthening. The airfield runway, taxiway, and centerline lights in the strengthened slab on Runway 25L would be relocated to the proposed runway centerline.

10.4.3 Staged Construction

Vehicular traffic on Sepulveda Boulevard would not be interrupted at any time during construction. The Runway 25L widening and approach slab seat strengthening would be completed while the runway is closed for rehabilitation and widening in June 2006. The Center Taxiway would be constructed after the completion of the Runway 25L modification, and would not require runway closings.

10.4.4 Bridge Removal Requirement

Bridge removal would consist of removing a portion of the tapered transition slabs built in 1979 at three locations and the structure approach slabs along Runway 25L. At the edge of the strengthened slab, a transition was constructed with a tapered profile and varying thickness. These sections to the north and south of the Runway 25L and to the south of Runway 25R will be removed in order to provide constant thickness strengthened slabs. These tapered slabs rest on the existing top of deck, but do not have a positive connection, and thus can be easily removed without affecting the existing bridge superstructure. A portion of the approach slab adjacent to the Center Taxiway is below the taxiway profile. This slab would be removed and reconstructed to match the new taxiway profile.

10.4.5 Bridge Loading Requirements

The live load crossing the structure consists of aircraft taxiing, landing and taking off. The largest planned aircraft is the new airbus A380, capable of carrying up to 555 passengers or 150.1 tons of cargo. The A380-800 aircraft weights 562 tons and is scheduled for rollout in November 2006. A possible alternate configuration is the 900 model weighing up to 602 tons, with a rollout date after 2008; see **Table 10-1** below.

TABLE 10-1 Design Load Criteria *			
Feature	A380-800	A380-800F	A380-900
Total Aircraft Weight	1,239,000 lbs	1,239,000 lbs	1,324,400 lbs
Number of Wheels:			
Nose	2	2	2
Body	6 per strut	6 per strut	6 per strut
Wing	4 per strut	4 per strut	4 per strut
TOTAL	22 per strut	22 per strut	22 per strut
Tire Pressure	197 psi	197 psi	197 psi
Braking Force Coefficient	0.8 Gross Vehicle Weight at landing	0.8 Gross Vehicle Weight at landing	0.8 Gross Vehicle Weight at landing
Impact	30%	30%	30%

* Manufacturer information published July 2002. Criteria based on Caltrans HS20, Airbus A380 aircraft models 800, 800F, and 900.

10.5 Preliminary Foundation Evaluation Summary

A draft geotechnical evaluation report was prepared by Ninyo & Moore, Geotechnical and Environmental Sciences Consultants. The report includes data from field borings and laboratory testing.

The addition of a strengthening slab and larger loads may induce additional foundation settlement. Settlement values of the foundations calculations are based on the footing geometries, footing depth, and existing and future loading. The additional settlement due to the new strengthened slab and the new large aircraft is estimated to be 3/16 inch to 3/8 inch with a maximum differential settlement of 3/16 inch.

An analysis of the deck was performed to determine the affect of this settlement on the existing strengthening slab as well as the new design. The analysis assumed that the maximum differential settlement between any two segments is 5/16 inch, all occurring at the expansion joint in the original structure. The new slab strengthening spans these joints with no expansion joint. This is conservative since the existing structure has a shear key along the superstructure, which would distribute the differential settlement over some distance. When fully loaded by an A380-900 aircraft, the existing superstructure capacity is larger than the moments and shear induced by 5/16 inch discontinuity. Thus, the estimated differential settlement of 3/16 inch over a 30 feet length is acceptable for this structure.

10.6 Verification of Existing Strengthened Slab

The new large aircraft has a total weight of 1,327,000 lbs, distributed in a wheel pattern as shown in **Figure 10.1.** The total load is larger than the design load used for the strengthened slab shown in **Figure 10.2.** The existing strengthened slab has been analyzed with the future loading to verify the structure's adequacy. The new aircraft has a larger footprint than the design aircraft, which allows the higher wheel load to be spread over a larger width of deck. The ends of the strengthened slabs where the approach slabs are supported exhibit a weakness in a shear capacity under the higher wheel loading. The structure approach seat strengthening for Runaway 25L is included as part of this project.

10.7 Seismic Retrofit

A seismic evaluation of the Sepulveda Tunnel was performed in 1990 by URS (formerly Greiner) under contract to LAWA (formerly The City of Los Angeles, Department of Airports.) The analysis utilized a force based method to check the major structural components. The peak bedrock acceleration used was 0.4g. The report concluded the following:

"The structure meets the basic code intent of life safety, although significant repairs may be required to restore the structure back into operation following a major earthquake"[1]

A reanalysis of the structure was completed using the latest Caltrans Seismic Design Criteria (SDC). 1 Based on the 1997 Caltrans Seismic Hazard map, the peak bedrock acceleration is 0.5g. The reanalysis includes the additional mass of the 3 feet strengthening. An elastic dynamic model in SAP2000 was created to assess the seismic demands on the structure. Inelastic properties were added to the structure to create a push-over model to assess the displacement capacities in the longitudinal direction. Two cases were run for the analysis. Case 1 includes the dynamic response of the structure and the reactions with the soil behind the abutments. Case 2 includes the acceleration of the soil backfill behind the abutment as it reacted against the structure. The soil backfill was applied using the Mononabe-Okabi method to determine dynamic overpressure on the rigid frame wall.

The results of the seismic analysis show that the structure meets the non-collapse criteria, but would suffer damage, see **Table 10-2**. Due to the rigid frame effect, elements of the structure would experience plastic deformations associated with large rotations. Plastic hinges are found within the ultimate capacity of the members, and thus the structure would not collapse. Plastic hinges would form at the abutment walls immediately below the bottom of the wall where it joins the ventilation box, as well as in the deck slab approximately at the quarter point from the abutments. The deck slab hinges will not affect the load carrying capacity of the structure as the strengthened slabs on top carry all the live load. The ventilation box behind the abutment wall is lightly reinforced and could fail in a large seismic event. It is possible that the failure of the ventilation box could cause a cave-in condition and a loss of support for the approach slabs above. Although the failure of the approach slab does not contribute to a collapse, it is recommended that the ventilation boxes behind the abutments be inspected immediately after a large seismic event before restoring airfield operations.

Though there may be damage to the existing structure, seismic retrofit was deemed not to be needed because the structure meets the "no-collapse" criteria. However, structure serviceability could be hampered or reduced.

[1] URS/Greiner Corporation, 'Sepulveda Tunnel Seismic Evaluation Report", 1990

TABLE 10-2 Displacement Demand And Capacity Ratios			
Seismic Event	Displacement*(in.)	Demand/Capacity	Mode of Failure
Case 1	1.84	0.95	None
Case 2	1.17	1.31	Vent flexure

* Shear capacity of the abutment wall below the side vent limits the displacement capacity.

10.8 Proposed Structure

The new proposed structure would be similar to the existing strengthened structure to match the adjacent runway profile. The structure would be a simply supported concrete slab superstructure. A structural gap of at least 2 feet would be created between the new slab and the existing top deck to prevent overloading of the existing superstructure.

There are two slab strengthening alternatives, a 3 inches thick conventional reinforced concrete slab (Alternative 1) or a 2 foot, 5 inches thick post tensioned concrete slab (Alternative 2). The post-tensioned concrete slab would be lighter, generating less demand to the existing footings. However, the post-tensioned slab would have to be constructed with a thicker void form in order to match the existing deck profile. The post-tensioned slab would experience long term shortening, which could create additional stresses at the interface with the existing slab, and possibly additional maintenance requirements.

The recommended structure type is Alternative 1, the 2 feet deep conventional reinforced concrete slab. This alternative would match the existing deck stiffness, thereby minimizing maintenance needs for the structure in the future.

10.9 Cost Estimates

The cost estimates for the International Airport Overcrossing are summarized in **Table 10-3**.

TABLE 10-3 International Airport Overcrossing Cost Estimate			
Alternative	Unit Cost $/sf	Total sf	Total Cost
CIP Concrete Slab	$179	30,796	5,512,000
CIP Prestressed Slab	$178	30,796	5,482,000

11.0 CONSTRUCTION PACKAGING AND PHASING

11.1 Introduction

Airports are always seeking to increase safety of operations while maintaining and improving their capacity. Improvements to airside, landside, and terminal facilities ensure that the enhancements to safety and security stay ahead of increases in demand. However, if not carefully planned, the construction of these facilities could degrade the capacity of the airport. This is something to be avoided if at all possible, even for relatively short periods of time.

This section addresses the general construction phasing criteria developed for the design of the proposed improvements in the South Airfield and NLA Program, however it concentrates in the details associated with the construction of Runway 25L. It is important to recognize that the continued and safe operation of the airport during and after construction is imperative. LAX is a 24-hour facility with limited capacity and any disruption to airport operations (regardless of how minute) would have a significantly detrimental effect on air transportation service in the region and, possibly, nationwide.

The alternatives considered would include a range of options from one extreme, where the project site is closed to aircraft operations and made available to the contractor exclusively until construction completion, to phasing the construction in a way where the contractor shares the site with limited operations. It is vitally important to understand the magnitude of the impacts caused by the closure of a runway and adjacent taxiways. This facilitates the process of determining whether or not the premium of paying off-hours labor is worth the additional overtime costs. Taking all of these factors into consideration, three construction schedule alternatives are presented in this report and discussed in detail.

11.2 Contents of this Section

This section of the report presents the construction phasing studies of the designed project improvements. These studies were performed to identify and evaluate alternative approaches to solve the project's construction challenges. This report documents research performed in the following areas:

- Construction Packaging
- Airport Operations and Safety Settings
- Design Considerations
- Project Phasing Options
- Construction Considerations and Approach
- Evaluating Factors
- Proposed Construction Phasing Approach

These topics are discussed in detail in the following sub sections.

11.3 Construction Packaging

The overall South Airfield and NLA program, as described in **Section 1.0 – Introduction**, consists of several airfield improvements. Most notable are the realignment of Runway 25L and the construction of the Center Taxiway, Taxiway AC.

The scale and possible impacts to airport operations associated with the overall project necessitate that the program be implemented in more than one project. The construction of these projects should be sequenced to meet the following conditions:

- Competitive Bidding. The magnitude of the contract should allow several local and national contractors to be able to bid and offer competitive prices. Larger projects tend to limit the number of financially qualified contractors.
- Construction Coordination. Segregating the program into smaller and more numerous projects can lead to excessive coordination and lack of accountability.
- Construction Related Impacts to Operations. Related to coordination, larger and selective projects are likely to lead to less construction impacts
- Availability of Materials. As discussed in **Section 9.0 – Construction Material Availability**, phasing the construction into several components (two or more) will ensure that the supply of material is adequate. Shortages of material could drastically increase the cost of construction.

11.3.1 Proposed Construction Packages

The airfield development program has been divided into two primary projects. The elements included in each of the projects and the rationale used in segregating them into each of the projects is briefly presented below.

A. Runway 25L Realignment.
As depicted in **Figure 11.1**, this project consists of the demolition of the existing pavement and relocation of Runway 25L. All ancillary facilities, including NAVAIDS will be included in this project. The extent of the project to the north is limited by the boundary of the Runway Safety Area (RSA). This assumes a reduced RSA of 200 feet, as allowed by the FAA during construction; however the limit of construction will extend 20 feet beyond this line to prevent encroaching into the RSA during subsequent construction.

B. Center Taxiway.
This project completes the airfield program and consists of the construction of the center taxiway and all connecting taxiways to Runway 25L and 25R. Further, this project includes the construction of small connecting taxiways between Runway 25R and Taxiways B and C. This project is likely to have minimal impact on airport operations during construction. The approximate extents of this project are depicted in **Figure 11.2**.

11.3.2 Sequence of Construction Packages

As noted earlier, the sequence of construction should minimize the impacts to airport operations as well as to minimize coordination efforts.

The relocation of **Runway 25L – Phase I** will be the first project implemented. Transitions to existing operating surfaces will be provided to have an operational airfield at the completion of the project. As noted, the extent of the project is being purposely restrained to expedite its completion.

Phase II – Center Taxiway will begin after the completion of Phase I, as described above.

11.4 Airport Operations and Safety Settings

While the design and construction of the proposed project is of significant concern to the airport, it is certainly not the only concern. The continued and safe operation of the airport during and after the construction is vitally important to the economy of not only the Los Angeles area but other regional areas served by LAX. As such, it is imperative that a basic understanding be gained of the operational intricacies of the air traffic utilizing the airport.

11.4.1 Traffic Volumes and Fleet Mix

Up to the winter of 2001, LAX had experienced a steady growth of operations. The effects of the terrorist attacks of September 11, 2001 coupled with the slowdown of the economy have had an effect on LAX activities and as of today airport activity is still down as compared to pre-9/11 traffic. However, based on recent statistics published by LAWA, during the summer months LAX experienced 1,900 operations per day and approximately 1,700 operations per day during the winter months. During weekends, there are approximately 1,600 operations on Saturdays and 1,700 operations on Sundays. The majority of the cargo operations consist of B-747 and DC-10 traffic. July through September is the peak travel season and has the best weather conditions. From May through mid-July, VFR operations may be limited due to a reduced cloud ceiling.

11.4.2 Airport Operations and Traffic Patterns

The airfield is split into two operational areas: the Runway 24 complex and the Runway 25 complex. Each complex consists of two runways spaced 750 feet apart. Runway 25L has a relocated threshold and Runway 25R has a displaced threshold. Since the runways within each complex are too close together for simultaneous use, the operations are staggered with arrivals assigned to the outboard runway and departures assigned to the inboard runway. Currently, 58% of the arrivals are routed to the Runway 25 complex and 42% are routed to Runways 24. Similarly, 53% of the departures are routed to the Runway 25 complex and 47% are routed to Runways 24. In addition, almost all wide-body traffic utilizes Runway 25R for departures.

LAX operates with a westerly flow for approximately 90% of the time. During October, when there are Santa Ana winds or during winter storms, operations are turned to the east. Approximately 40% of the traffic is from the east and is typically assigned to the Runway 25 complex.

LAX has four major standard instrument departures (SIDs):

- LAXX - aircraft depart on a 250 degree heading and turn south to points south.
- LOOP - aircraft depart on a 250 degree heading for 8-10 miles then turn back 180 degree passing directly over the airport. Aircraft pass over the LAX VOR and must be at an altitude of at least 10,000 feet.
- VENTURA - aircraft depart on a 250 degree heading then are vectored to the San Marcos VOR.

- GORMAN - aircraft depart on a 250 degree heading and then are vectored to turn north back over the Hollywood Hills to continue east.

There is currently a contingency plan in place when one of the runways within the 25 complex is closed. In all cases, operations to and from the Runway 24 complex remain unchanged and the remaining open runway within the 25 complex is used for both arrivals and departures.

11.5 Design Considerations

11.5.1 General

Traditional design techniques were examined to ensure that construction could proceed on a "fast-track" basis. Every effort was made to simplify the design and allow the contractor to successfully complete the project within the restrictions required for off-peak hour construction, if necessary.

11.5.2 Horizontal and Vertical Alignment

To assist in the construction, the layout of the project should be such that a minimum amount of time is required for surveying and staking. The majority of the horizontal alignment is set by existing runway and taxiway locations, as well as FAA design requirements. Detailed curve information is provided, as well as coordinates based on the LAX local coordinate system. This will give an experienced contractor all the information necessary to quickly lay out the work. Vertically, the numbers of grade breaks are minimized to the greatest extent possible. Long runs of relatively flat grades are used in the profile and the majority of the cross-slopes are kept constant. To facilitate the placement of concrete pavement, "odd" shaped slabs are avoided. The majority of the panels are 20 feet square. A few rectangular panels might be required but their length to width ratio will not exceed 1.25. While this does require "overbuilding" (extending new concrete beyond the edge of the taxiway) in some areas, this extra expense is offset by the elimination of not only the need for time consuming hand forming, but also the need for panel reinforcement. Also, the long term stability of the full size panels adds to the benefits realized. To further simplify the construction, grade breaks in mid-panel are minimized.

11.5.3 Drainage and Underground Utilities

To allow the contractor the opportunity to operate during regular working hours, the drainage system is designed to fall outside the runway safety area. This allows the contractor to mobilize and install the majority of the utilities without having to close either runway. Airfield Operations Area (AOA) badging and an approved safety plan are still required but should not be a problem for a contractor experienced in airport work.

11.5.4 Pavement Section

Ideally, for ease of construction, a single uniform pavement section would be utilized for the entire project. However, differing soil conditions in each of the construction areas require that separate sections be developed. The soils within the project site vary from silty sands to mostly clays and clay-like sands. The latter soils exhibit a moderate to high potential to swell, which could cause differential settlement in the pavement leading to high maintenance costs. The use of lime stabilization could be considered as a way to not only raise the CBRs, but it can also reduce this swell potential. Another factor that affects the pavement section is the forecast traffic load.

In a further attempt to assist the contractor in quickly completing the project, consideration should be given to utilizing the same thickness of pavement for all runway sections. This would allow the contractor to use the same forms or slip-form equipment and minimize the number of adjustments to the paving apparatus. The difference in cost for an additional inch of concrete should be minimal.

11.5.5 Pavement Materials

The construction approach used would have a major impact on the pavement materials that are required. If a total or partial airfield shutdown is allowed, normal Type II cement concrete can be utilized. This concrete, if needed, can attain the design flexural strength in 7 days or under normal curing conditions would reach the design strength in 28 days. This is certainly adequate to meet the requirements of the project.

However, if off-peak/night construction is required, standard Type II concrete would not be able to meet the early strength requirements necessary to meet FAA strength requirements prior to the opening of the runway. Assuming that the contractor is able to mobilize and be ready to place concrete at the end of the first 8 hours of the allotted 37-hour period and it takes 4 hours to pave within the runway safety area, the concrete used for this project must be capable of attaining a nominal flexural strength of 325 pounds per square inch (psi) within 25 hours. This would not be possible, using conventional Type II cement. Several options are available to meet this requirement.

A. <u>Conventional Concrete</u>

The characteristics needed for this project can be met with Type II cement, but only with careful control over all factors in the mix, including water content, aggregates, and admixtures. Since there is no one mix or approach that would satisfy the project and laboratory requirements, the contractor should be allowed to propose a mix that he deems capable of satisfying the project requirements. His submittal should be accompanied by detailed testing results on the proposed mix. This testing should be done in sufficient advance of the actual work so that early strength, as well as long-term properties of the proposed mix can be studied. Beam breaks should be done for the initial hours, as well as for 7-day, 28-day and 90-day time periods. In addition to the cement itself, the contractor must consider the effects of heat of hydration, aggregate size distribution, entrained air, water temperature, curing provisions and ambient and sub-base temperatures.

It is recommended that the Contractor be allowed latitude in proposing the ways in which these various factors would be controlled. A very detailed laboratory job mix should be prepared which uses the actual materials to be used. This job mix should demonstrate that both the 25-hour and the 28-day strengths are consistently obtainable. Some elements that need to be addressed are:

B. <u>Total Water Content (WC)</u>

A low ratio between water and cement materials is a major controlling influence on early strength gain. Typically this WC ratio should be kept below 0.43 to provide the necessary early strength development.

C. Presence and Type of Admixture

If the off-peak construction schedule is adopted, it is unlikely that the necessary strength development can be attained in the necessary time frame without the use of chemical admixtures. Air-entrainment is necessary for fast-track concrete. The exact percentage is important, and should be specifically outlined in the job mix. Higher or lower percentages can have detrimental effects on both short term and long term strength. Water reducing agents would likewise be necessary in order to allow the water-cement ratio to remain low. Water reducing admixtures actually perform two functions. They improve workability of the low WC mixes, and they also directly affect early strength gain by reducing the number of cement particle agglomerations and aid in dispersing cement particles. ASTM C 494 Types A, E and F water reducing agents are generally used for fast-track projects. It is very important that the actual admixture that the Contractor proposes to use be included in the job mix laboratory analysis. Accelerating admixtures, consisting of soluble inorganic salts or soluble organic compounds, directly affect short-term strength development. These materials should conform to ASTM C 494 Type A. However, a non-chloride accelerator must be used in order to preclude corrosion of the steel load transfer dowels. Again, it is extremely important that the actual admixture proposed, from the same supplier, be used for the laboratory job mix analysis.

D. Aggregate Properties

Grading uniformity and particle shape have been shown to significantly affect early strength gain and should therefore be addressed in the laboratory job mix. The standard FAA specification includes separate grade restrictions on both the coarse and fine aggregate without regard to the final grading. In order to more closely determine the blend delivered to the job site, it is suggested that the final blended gradation be specified. In order to allow the Contractor as much latitude as possible, it is suggested that a specific gradation not be required, but that certain attributes of the gradation submitted be specified. To this end, it is suggested that the final combined gradation be uniform; that is, the percentage of material retained on each sieve should vary uniformly from one sieve to the other. Plotting the percentage retained on each sieve should yield a smooth bell-shaped curve when plotted on a standard grading chart. Such uniformity affects concrete strength, workability, and long-term durability. According to the ACPA publication, a uniform grading would result in:

- Reduced mix water demand, thereby improving long term strength
- Increased long-term durability by reducing pavement permeability
- Better workability
- Less edge slump
- Reduced wear on construction equipment

Particle shape and texture also significantly affect early strength gain. Bond strength increases as aggregate texture moves from smooth and rounded to rough and angular. While the latter adversely affects workability, it improves the ultimate pavement product and should therefore be specified. Flat or elongated pieces should be restricted to less than 15 percent or mix problems may develop. Aggregate cleanliness is also of utmost importance for fast-set concrete and special attention should be placed on ensuring that the percentage of material passing the #200 sieve be monitored carefully during construction to ensure that it does not deviate from that used in the mix design.

E. Water

Heating of the water tends to accelerate time of set. The control of this heat depends on both ambient temperature and aggregate temperature. Heated water, combined with heated aggregate, would considerably decrease the time of set. Again, it is important that the temperatures to be used during production be included in the laboratory job mix analysis.

F. Rapid Set (Curing) Concrete

Typically with fast-track projects, rapid set concrete is used. By use of proprietary set accelerating additives, flexural strengths of up to 500 psi can be obtained in a few hours. This would certainly allow the contractor to meet the safety area strength requirements. However, because of questions about long term durability, LAX staff does not look favorably about the use of Type III or proprietary high-early cements. Also, there are special design issues that must be addressed if this type of cement is to be used. Firstly, the concrete is difficult to work with. The contractor must be very experienced with the product to ensure that the project goals are met. Secondly, this type of cement typically bonds exceptionally well to steel. After initially expanding, the concrete would begin to shrink. Since the bond between the cement and the dowel bars is stronger than the internal bond within the concrete, cracking can occur behind the dowels. To eliminate this cracking, dowel bars are frequently eliminated from the design. To allow for adequate load transfer, a thickened edge section is used on every panel. Since the cost of this type of cement is very high to begin with, this drives the construction cost of the project up.

G. Precast Panels

It is possible to construct the portion of this project within the runway safety area by utilizing only precast panels. With precast panels, the use of dowel bars is impossible, forcing the use of thickened edge or totally thickened slabs. This causes the cost of the pavement to increase. Also, the labor costs are higher. Each panel needs to be formed individually off site, and then lifted into place. A crane or other lifting device is also required, along with the personnel necessary to operate it. The advantage of this type of construction is that no cure time is necessary once the panels are in place. Technically, the panels could be placed and immediately opened to traffic.

11.6 Project Phasing Options

11.6.1 General

The phasing options presented in this section focus on the work included in Phase I – Runway 25L realignment. This section does not address the phasing criteria and options for the construction of

Phase II, however it is anticipated that the criteria presented herein will be further used to develop concepts and alternatives for the construction of the Center Taxiway.

The item that would have the biggest impact on the cost and time required for the construction of this project would be the amount of time that the construction area will be available to the contractor. A large percentage of the construction for this project lies in the safety area of Runways 7R-25L. Due to FAA regulations and safety requirements, while construction is being undertaken within this area, the runway would have to be closed for traffic. Realistically, even paving the sections that fall outside the runway safety area would, due to material and personnel deliveries, greatly hinder airfield operations. It is therefore recommended that no paving operations be attempted while the runways are open and operational.

Ideally, to achieve the most cost effective construction of this project, the site would be closed to air operations and made available to the contractor exclusively until the completion of the construction. The delays to the airlines and cargo carriers, both in terms of additional taxi time and additional time in the air waiting for a runway clearance, could equate to additional operating costs. Usually, these costs mandate that, at a minimum, the airport be allowed to operate during peak times. This sometimes forces the contractor to work at night or during weekends. It is critical that an understanding be gained of the impact of disruptions caused by the closure of a runway or taxiway so that it can be determined if the premium of paying off-hour labor is worth the additional costs. There are three scenarios that can be utilized for the construction of this project: close Runway 7R/25L for the duration of the construction, close portions of the runway at a time as required, or off-peak construction (nighttime closures). Each of these options is discussed in some detail.

11.6.2 Total Closure of Runway 25L

This would entail the closure of Runway 7R-25L and, as needed, associated taxiways. It would provide the most economical construction costs and would likely yield the highest construction quality. With the runway closed, the contractor could focus on achieving the highest production without significant constraints associated with phasing, sequencing and aircraft operations within the project site. The contractor could assign his resources to meet the schedule demands and apply work shifts as needed. Further, the contractor would benefit from large areas of work at one time.

Staging areas, within the constraints outlined in the LAX Master Plan Update, could be located near the construction site, which would reduce any delays in delivering personnel, materials, or equipment.

As mentioned previously, over half of the operations at LAX are from the Runway 25 complex, including all south and east traffic as well as all wide-body departure traffic. The closure of Runway 25L would require that portions of the traffic be routed to the North Airfield (Runway 24 complex).

11.6.3 Partial Airfield Shutdown

This would entail the closure of portions of the runway at a time for an extended period of time. At any given time, Runway 7R/25L would be open with length limitations. This would still allow the contractor to locate his staging area near the construction site. The construction would be limited so that he was not within the safety area of the active runway. While this would create the requirement for phasing, the majority of the work should be possible during normal working hours, depending on contract time. Aircraft operations would be affected since the available landing and take-off runway lengths would be temporarily redefined. Sporadic total closure of the runway would still be required to accommodate construction of transition areas. These total closures could be accommodated during nighttime or during the weekend. This would extend the amount of time required for construction, because the contractor would have to work on portions of the runway partially completing these areas before moving and finishing. It is likely that the contractor would experience additional delays in the delivery of equipment and supplies due to routing around the safety areas. The requirement to phase the work, coupled with additional expenses associated with closed runway markings and barricades would add to the cost. Operationally, delays would be created for both incoming and outgoing traffic, although the delays should be no greater than those created during runway closure for routine maintenance.

Aircraft would operate on limited runway length, therefore limiting the type and number of aircraft able to land and take-off. This will force that traffic be segregated by air traffic control. The shortened runway should meet the requirements of smaller (turbo prop and regional jet) traffic.

Construction safety is a key concern. This scheme mixes construction operations with aircraft movement specifically at the ends of the redefined runway thresholds which is not an optimal solution.

11.6.4 Off-Peak Construction

This approach involves leaving the runway open and operational during the peak times of the day or week. While generally creating the most expensive construction cost, it involves little or no delays or interruptions to flight operations.

This option carries the most construction challenges. As the runway centerline is shifted, there is a need for the crown of the pavement to be transitioned for each work area. The off-peak hours that could be made available for construction have been suggested during nighttime (11:00 PM to 6:00 AM) or during an extended period from Fridays at 11:00 PM. to Sunday at noon. This restriction creates a number of challenges above the obvious Contractor's personnel hardship. For each of the construction windows, the contractor must have completely demobilized from the site and left the construction area so that all FAA safety area requirements are met. This means that not only does the contractor have to remove all obstructions from the site (including equipment and stored material); he must also satisfy the drop-off and surface load-bearing capacity restrictions.

This challenge must be met in three ways. Firstly, the contractor must break down the work into sections that can be completed in the allotted nighttime or extended weekend time. This includes mobilization, demolition, excavation, stabilization of subbase (if required), placement of base material, and placement of pavement, as well as cleanup and demobilization. Secondly, FAA regulations require that the safety area contain no object or break on surface continuity which exceeds 3 inches in height, width, or depth. This would require that the contractor completely finish construction in the safety area (within 200 to 250 feet of the centerline of the runway) during the construction window period, or temporarily backfill uncompleted work to finish grades. Thirdly, FAA regulations require that the surface area inside the safety area be capable of supporting the weight of an errant aircraft without sustaining damage to the aircraft undercarriage and that the surfaces meet strict tolerances. While this does not require that the concrete be at full design strength prior to each opening of the runway, it does require that the pavement reach some nominal support strength.

Additional costs are involved with the extra work created by the demobilization, temporary transition improvements and clean up as well as the fact that, due to local union rules, laborers get paid a premium wage for working during nighttime or extended weekend hours. Also, with such tight time constraints, any delay in the delivery of the concrete to the site would have severe impacts on the contractor's ability to meet the schedule. To help minimize this problem, staging areas would be established in an area that would allow for the installation of one or more on-site batch plants. With an on-site batch plant, the contractor would have almost instant access to concrete. This would also allow the contractor to have hands-on control of the mix. However, in an effort to maximize bidding potential, on-site batch plants might be optional rather than a requirement. If an off-site plant is used, the unusual working hours actually works in the project's favor. Nighttime delivery would minimize potential traffic delays.

11.7 Construction Considerations

11.7.1 General

Due to the sensitivity of the schedule, it is crucial that the construction of this project proceed smoothly and efficiently. To achieve this, it is imperative that the selected contractor be experienced in this type of work and that he utilize proven construction techniques. During the course of design, many different construction approaches were examined in an effort to allow for the most efficient construction possible. While traditional methodologies were preferred, new and innovative techniques were also considered. All of these were evaluated against local contractor availability and the probability of success. The majority of this special scrutiny was centered on one aspect of the project. Because the majority of the other construction for this project is outside of the runway safety area, the most critical part and the key to the success is the timely and expedient completion of the paving operation.

11.7.2 Contractor's Qualifications

This is not a project that should be used to train a contractor. As such, the construction documents should be structured to include, at the time of the bid, a submittal from the contractor detailing his experience not only with Los Angeles World Airports and LAX, but also his experience with projects similar in scope to the one proposed. Many basic aspects of the project, such as the layout of the spiral taxiways, are fairly unique to this kind of work and may not be familiar to all contractors. Detailed references should be submitted, including phone numbers of the client's project manager. The submittal should also include a listing of available equipment and a financial statement that can show that the potential contractor has the means to successfully complete a fast track project. In an effort to accelerate the process, an attempt could be made to pre-qualify potential bidders. A pre-bid notification could be sent out to have interested contractors submit a letter of interest and include their qualifications. These submittals could be analyzed and only qualified contractors would be asked to submit a bid. Historically, the FAA has been reluctant to allow pre-qualification of bidders.

With FAA grant funded projects, as well as other federally funded projects, proprietary products and methodologies must be avoided in an effort to allow fair competition and provide the lowest construction costs. Pre-qualification processes have been viewed as restricting the fair and open bid process. However, FAA guidelines also mandate that the bid be awarded to the lowest qualified bidder. It is certainly an arguable issue that if a bidder can be disqualified after the opening of the bids, he could easily be disqualified prior. Dialog should be initiated with the FAA to determine if pre-qualification is an acceptable procedure for this project.

11.7.3 Pavement Construction Techniques

A. Slip-Form

For actual paving operations, slip-form paving is the most time efficient process. For slip-form paving, long paving runs are preferred. This allows the contractor to maximize his efforts in the placement of the concrete instead of moving and adjusting the slip-form paver. To accommodate this, a diagonal joint layout along the high-speed exits would be the most logical. However, due to the geometry of the high-speed exit taxiways, a diagonal joint pattern is difficult to achieve. A few long runs down the center of the taxiway could be made, but this would create some smaller runs along the edges. This would also create some odd joints at the intersections with the runways and existing taxiways. Also, there is some question as to the expediency of using a slip-form paver in this application. While this method is fast during the placement of the pavement, it loses some of its advantages if the construction area is not closed for the duration of the construction. If a recurring limited time window of construction is required, the necessary mobilization and demobilization may preclude its use. During the times when the runways are open, the paver would have to be removed from the air operations area and stored in the contractor's staging area. For this project, the staging area could be as much as a mile away from the construction area. The time required to move from the staging area is likely prohibitive. Some of these problems could be eliminated by the use of a trailer to haul the paver to and from the site. If slip-form paving is to be allowed, the specifications would need to be reviewed to ensure that there is strict control over the concrete mix characteristics, particularly slump.

B. Formed Slabs

In recent similar projects, the contractor has chosen to form and complete smaller, manageable blocks of pavements. With this method of construction, the contractor can concentrate his efforts on actual paving rather than delivering and adjusting equipment. If this method of paving is to be utilized, the ideal joint pattern would be parallel and perpendicular to the surface that is being abutted, in this case the runways. This joint pattern can be very easily laid out by the contractor and the ease of this layout could overcome some of the time lost due to additional labor involved with the paving process. This manner of paving is more attractive if small time windows for construction are required. Also, the placement of dowels can be easier, due to the fact that they can be held in place by the form. If the construction site is available for long periods of time, the labor involved with large concrete pours can make this unfeasible.

11.8 Evaluating Factors

There are several factors that should be considered in evaluating the preferred construction scheme option; however of paramount concern is **safety**. Other evaluating factors considered in the selection of the preferred alternative include:

11.8.1 Impacts to Airport/Aircraft Operations

As noted earlier, the construction could impact airport operations, and therefore unduly tax the airport tenants. The construction should aim to minimize these impacts. An assessment of the capacity and delay implications of the closure of Runway 25L is currently underway. This analysis is not currently available. However, it will be before the design has been formalized.

11.8.2 Construction Cost

Constraints posed on the contractor's work are likely to be reflected in additional costs of construction. These constraints could be in the form of site limitations or in penalties associated with the failure to complete sections of the work on time. Either way, it is likely that the construction risks and difficulties will yield a more costly project.

At the same time, and as was experienced during the reconstruction of Runway 24L in the late 1980's, payment incentives for early completion have proven to be effective in achieving the desired result. This is an option that should be available to this project; however it's eligibility on federally funded projects needs to be explored.

11.9 Proposed Construction Phasing Approach

Three distinct construction phasing schemes were developed in order to procure the most feasible construction option. The phasing criteria and time durations for these three proposed alternatives were based on a series of assumptions and developed with the help of local paving contractors.

Assumptions included contractor stockpiling on in-field areas, batch plant on-site, production rates, construction logistics and a simplified structural design section. The selection criteria for these construction schemes are based upon safety, cost and the impacts to the airfield operational areas.

The first phasing scheme consists of the closure of Runway 25L. Although this method is by far the quickest and cheapest of all three alternatives, the operational impacts could be significant. These impacts will certainly be less today due to the recent reduction in air traffic nationwide and at LAX. These impacts, in terms of minutes of delay per aircraft operation, should be quantified and compared to any incremental construction cost proposed.

The second alternative is to temporarily relocated the thresholds and perform the construction in three phases – west end, east end, and finally the center portion of the runway. The latter would require complete closure. Note that this option would probably degrade the approach to this runway to a non-precision approach. Also, this option brings aircraft and construction operations within close proximity to each other and therefore increases the risk of construction related mishaps. Further, this option is likely to carry a premium for construction associated with the limitations imposed on the contractor.

The third alternative is the off-peak (nighttime/weekend) schedule. This option would extend the project and would increase the cost of construction considerably and would carry the highest premium for construction costs. Experience in similar projects suggests that quality of construction is likely to be an issue as well. The transition structures – from the old crown to the new relocated crown, are also likely to add significant cost and time to the construction.

Preliminarily, the preferred option is to close the runway for a limited time. This proposal needs further analysis and discussion, as well as the endorsement from the airport users and tenants. Before that can be reached, additional information, such the computer simulation results should be reviewed and analyzed.

12.0 PERMITTING AND OTHER REQUIREMENTS

12.1 Introduction

This section identifies the various permits that are required for the runway relocation project as well as providing an initial review of the Supplemental Environmental Impact Statement and Environmental Impact Report (SEIS/EIR) and preliminary requirements identified in the Master Plan currently under development. It should be noted that the SEIS/EIR and Master Plan documents are still under public review, have not yet been finalized, and are subject to change and revision.

12.2 Permitting

Various permits and approvals are likely to be required for this project. Many agencies and departments of federal, state, and local jurisdictions are in the process of being consulted as to the nature and extent of the approvals that are to be secured for this project. These agencies and departments include the Federal Aviation Administration, the Environmental Protection Administration, the California Air Resources Board, Caltrans, the California Coastal Commission, the Regional Water Quality Control Board, the Southern California Air Quality Management District, the Los Angeles County Metropolitan Transportation Authority, the City of Los Angeles and its various departments and bureaus, adjoining jurisdictions including the cities of Inglewood and El Segundo, and private utility companies.

12.3 Master Plan Commitments and SEIS/EIR Requirements

The Supplemental EIS/EIR and Master Plan materials have been reviewed with the intent of identifying those mitigation measures/requirements that may affect the construction of the south airfield work that is the subject of this report.

Specific measures identified in these documents take two forms:

- Master Plan Commitments
- Mitigation Measures

These two categories are not mutually exclusive and there is significant overlap. Master Plan commitments tend to be measures that LAWA has represented to the surrounding communities of El Segundo, Westchester, and Inglewood as being undertaken to minimize neighborhood disruption and discomfort in the spirit of being a "good neighbor". Mitigation measures are those measures that are legally binding and identified in the SEIS/EIR as such to mitigate specific project induced impacts. For the purposes of this preliminary refinement report, both types of measures have been treated as fully binding on LAWA and in need of implementation if they apply to this project.

The specific measures are listed in the following subsections by environmental category. In some cases, these measures will need to be included in plans and specifications developed as part of this ongoing south airfield project. In other cases, it will be LAWA's responsibility to set up and implement specific mitigation for such things as having registered biologists, paleontologists and environmental monitoring in place.

12.3.1 Air Quality

The most comprehensive mitigation measures of all categories are stipulated for Air Quality and comprise a four page table (Table S4.6-18) from the SEIS/EIR on pages 4-389 to 4-392. Key highlights include:

- Require emissions-reduction engine and fuel technology.
- Require watering or soil stabilization three times per day.
- Require paving of on-site construction routes.
- Require the covering of all truck beds.
- Require construction vehicle wheel washing facilities at entrances to public roads.
- Minimize the use of portable generators.
- Specify clean diesel technology with emission control devices where portable generators are necessary.
- Utilize an on-site rock crushing facility to reuse rock/concrete to minimize off-site haul truck trips.

12.3.2 Biotic Communities

- Implement avoidance measures when construction is near the Habitat Restoration Area. (West End of airfield)
- Provide environmental monitoring during construction for each of the various flora and fauna detailed in the biotic communities section.

12.3.3 Construction Impacts

- Implement some of the Master Plan Commitments that are applicable to the runway work found on pages 4-551 through 4-553 of the SEIS/EIR as well as the applicable mitigation measures on pages 4-566 and 4-567 of the SEIS/EIR. There is significant overlap here with other environmental categories. This two page list is relatively comprehensive.

12.3.4 Design, Art and Architectural Application/Aesthetics

- Install construction fencing where appropriate to shield view of construction activities.

12.3.5 Earth/Geology

- No mitigation required.

12.3.6 Endangered and Threatened Species

- Concerns revolve principally around the fairy shrimp and the El Segundo Blue Butterfly.
- Schedule construction in habitat areas outside of the El Segundo blue butterfly flight season defined as June 14th through September 30.
- Installation of navigational aids in the Habitat Restoration Area needs to be closely coordinated and mitigation developed. In fact, some mitigation measures must be implemented prior to the start of construction because the mitigation stipulates that it be planted three years prior to the occurrence of the impact.

12.3.7 Hazardous Materials

- Ensure continued implementation of existing remediation efforts.

- Develop a program to coordinate all efforts associated with handling of contaminated materials encountered during construction.

12.3.8 Historic/Architectural and Archaeological/Cultural Resources

- No mitigation required.

12.3.9 Human Health Risk Assessment

- No specific south airfield measures identified.

12.3.10 Hydrology and Water Quality

- Develop detailed drainage plans to ensure runoff goes to the right place.
- Include Best Management Practices (BMP's) in all drainage design to minimize adverse effects, refer to page 4-410 in the SEIS/EIR.

12.3.11 Noise Impacts during Construction

- Use equipment noise mufflers, enclosures and barriers whenever possible.
- Stage construction operations as far from noise sensitive uses as possible.
- Maintain all sound reducing devices and restrictions throughout the construction period.
- Avoid noisy construction activities during sensitive times of the day.

12.3.12 Paleontological Resources

- Develop Paleontological Qualification and Treatment Plan.
- Establish Paleontological Authorization.
- Establish Paleontological Monitoring Specifications.
- Maintain Paleontological monitoring throughout construction period.
- Collect, Prepare, Donate and Report on all fossils found.

12.3.13 Public Utilities, Water, Wastewater, Energy Supply and Natural Resources

- Coordinate the planned construction program with Utility providers.
- Develop a Utility Relocation program.

12.3.14 Safety

- No specific south airfield measures identified.

12.3.15 Solid Waste

- Require the use of recycled materials during construction, bid documents must specify percentage.
- Require a percentage of rock, cement, and usable demolition material by-products to be recycled on-site.

12.3.16 Surface Transportation

- Establish Ground Transportation/Construction Coordination Office

- Implement Construction traffic control measures as described on pages 4-248 to 4-250 of the SEIS/EIR.
- Define designated haul routes; generally stick to Aviation Blvd, Imperial Highway and Sepulveda Blvd. and all will be well.
- Avoid truck trips between 7 AM and 9 AM; 4:30 PM and 6:30 PM. Although some of the documentation refers to also avoiding trips after 11PM at night. The actual determination of truck routes and allowable delivery scheduling times will be a matter for LAWA to consider in concert with the contractor, LADOT, Caltrans and other agencies.

12.3.17 Wetlands

- Avoid vernal pools during construction staging if at all possible if any are designated within the construction zone.

13.0 CONSTRUCTION COST ESTIMATES

13.1 Introduction

A preliminary cost estimate was prepared for this project. **Table 13-1**, lists the probable construction costs based on the preliminary plans included in Volume II of this report. The quantities of material were estimated from the plans by performing detailed take-offs. A twenty-five percent (25%) contingency was included at this stage of the design. The cost estimate will increase in accuracy with each step of the design development, resulting in a lower construction contingency. The unit prices used in the development of this estimate reflect recent bids in the area for similar types of work. Actual unit prices will have to be adjusted and refined to reflect actual project construction phasing, any liquidated damage restrictions that will be placed on the contractor to help encourage production, and the allowable construction window.

13.2 Assumptions

13.2.1 Units Prices

Unit prices were based on the following sources:

1. Bid Summary, Southside Taxiway T, WG and WF, LAX (1999)
2. Bid Summary, Runway 12-30 Reconstruction, Long Beach Airport (2003)
3. Bid Summary, Taxiway L Reconstruction, John Wayne Airport (2001)
4. Bid Summary, Runway 12L/30R Extension, San Jose International Airport (2000)
5. Bid Summary, CAT II/III ILS Conversion, Mather Airforce Base (2003)

13.2.2 Pavement

The quantities for proposed runway, taxiway and shoulder pavement were estimated from scaled CAD plans. It is assumed that all existing pavement will be removed within the project limits. Alternative pavement sections are currently being exploring and are discussed in **Section 4.0 – Pavement Design** of this report. For estimating purposes we have assumed a runway and taxiway pavement section of the following characteristics:

A. <u>Runway Pavement Section - West</u>
20” P-501 PCC
12” P-306 Econocrete

B. <u>Runway Pavement Section - East</u>
20” P-501 PCC
12” P-306 Econocrete
10” P-306 Econocrete

C. <u>Taxiway Pavement Section</u>
18” P-501 PCC
12” P-209 Crushed Aggregate Base Course

D. AC shoulder
4" AC
8" P-209 Crushed Aggregate Base Course
48" " Scarify and Recompact Native

E. AC dust cover
3" AC
6" P-209 Crushed Aggregate Base Course

13.2.3 Drainage

Most of the existing drainage system between the runways will be demolished to make room for the addition of the center taxiway. A new drainage system is required along both sides of the new center taxiway and south of Runway 25R. The quantities of pipe length were calculated on a size and linear-foot basis.

13.2.4 Excavation & Earthwork

To estimate the quantities of pavement excavations, all areas of affected pavement were totaled and an average depth of 2-1/2 feet of excavation was assumed.

Rough cut and fill quantities were estimated by AutoCAD Land Development Desktop by creating a volume between the bottom of the proposed structural section surface and existing ground surface.

13.2.5 Airfield Lighting and Signage

The quantities for lighting and signage were estimated form CAD plans that depict each proposed facility. The amount of conduit and wire were based on the assumption that on average a 2" conduit with 2, L-824 cables would connect each light and sign.

13.2.6 NAVAIDS

The majority of the NAVAIDS can be relocated from their existing positions and reinstalled at new positions on the south airfield. These new positions typically will require minor site and equipment modifications. The glide slope facilities for Runway 7R and 7L will be replaced per the recommendations of section 8 Landing and Navigational Aids of this report. Assumptions were made that interim or temporary NAVAIDS facilities would not be required during the construction process.

13.3 Estimates

TABLE 13-1
Southside Runway and Taxiway Estimate of Probable Cost

Item No.	Item Description	Approx. Quantity	Unit	Unit Price	Total
	GENERAL				
1	Mobilization and Demobilization	1	LS		$ 7,100,000
2	Traffic Control / Flaggers / Escorts / Security	116,000	HRS	$50	$ 5,800,000
	PAVEMENT				
3	Removal of AC Pavement	250,000	SY	$10	$ 2,500,000
4	Removal of PCC Pavement	400,000	SY	$35	$ 14,000,000
5	Unclassified Excavation	200,000	CY	$30	$ 6,000,000
6	Portland Cement Concrete Pavement (P-501)	620,000	SY	$90	$ 55,800,000
7	P-306 Econocrete	250,000	SY	$60	$ 15,000,000
8	Crushed Aggregate Base Course (P-209)	180,000	CY	$50	$ 9,000,000
9	Plant Mix Bituminous Pavement	53,000	TON	$70	$ 3,710,000
10	Concrete Pavement Grooving	350,000	SY	$5	$ 1,750,000
11	Pavement Striping and Marking	1,500,000	SF	$1	$ 1,500,000
12	Erosion Control	1	LS	$500,000	$ 500,000
12	Temporary Pavement Construction	1	LS	$1,000,000	$ 1,000,000
	DRAINAGE				
13	Storm Water Monitoring SWPPP	1	LS	$500,000	$ 500,000
14	Abandon/Remove SD System	1	LS	$500,000	$ 500,000
15	Utility Relocation / Protection	1	LS	$1,000,000	$ 1,000,000
16	New 18" RCP Storm Drain	3,500	LF	$120	$ 420,000
17	New 21" RCP Storm Drain	2,600	LF	$125	$ 325,000
18	New 24" RCP Storm Drain	2,500	LF	$130	$ 325,000
19	New 27" RCP Storm Drain	4,300	LF	$140	$ 602,000
20	New 30" RCP Storm Drain	3,600	LF	$150	$ 540,000
21	New 33" RCP Storm Drain	4,200	LF	$160	$ 672,000
22	New 36" RCP Storm Drain	1,400	LF	$200	$ 280,000
23	New 42" RCP Storm Drain	5,200	LF	$225	$ 1,170,000
24	New 48" RCP Storm Drain	3,100	LF	$250	$ 775,000
25	New 54" RCP Storm Drain	800	LF	$300	$ 240,000
26	New 60" RCP Storm Drain	600	LF	$300	$ 180,000
27	New 72" RCP Storm Drain	300	LF	$300	$ 90,000

Item No.	Item Description	Approx. Quantity	Unit	Unit Price	Total
29	Construct Storm Drain Manhole	19	EA	$10,000	$ 190,000
	ELECTRICAL - LIGHTING & SIGNING				
30	L-824 Cable 1/C #8 AWG 5KV Type C	300,000	LF	$2	$ 600,000
31	2" PVC Conduit Concrete Encased	110,000	LF	$18	$ 1,980,000
32	Sign 1-Module	38	EA	$3,500	$ 133,000
33	Sign 2-Module	35	EA	$3,800	$ 133,000
34	Sign 3-Module	18	EA	$5,000	$ 90,000
35	Sign 4-Module	37	EA	$6,000	$ 222,000
36	Sign 6-Module	2	EA	$8,000	$ 16,000
37	Taxiway Semi Flushed Centerline Light	1,540	EA	$1,300	$ 2,002,000
38	Taxiway Elevated Edge light (Blue lens)	540	EA	$1,000	$ 540,000
39	Runway Semi Flush Centerline Light	200	EA	$2,500	$ 500,000
40	Runway Semi Flush Edge Light (Clear lens)	35	EA	$1,200	$ 42,000
41	Runway Elevated Edge light	90	EA	$600	$ 54,000
42	Runway Semi Flushed Touchdown Zone Light	180	EA	$1,500	$ 270,000
43	Runway Elevated Flushed Threshold Light	16	EA	$1,500	$ 24,000
44	In-pavement Rwy Guard Light	680	EA	$1,800	$ 1,224,000
45	Elevated Holding Position Light	60	EA	$6,000	$ 360,000
46	Removal of Electrical Items	1	LS	$1,000,000	$ 1,000,000
46	Miscellaneous Electrical Construction	1	LS	$600,000	$ 600,000
	NAVAIDS				
47	25L ALSF-2	1	EA	$618,000	$ 618,000
48	7R MALSR	1	EA	$458,000	$ 458,000
49	Localizer	2	EA	$82,500	$ 165,000
50	25L far field Monitor	2	EA	$26,000	$ 52,000
51	25L Inner Marker	1	EA	$28,000	$ 28,000
52	7R Glide slope, null reference	1	EA	$132,000	$ 132,000
53	7L Glide slope, end fire	1	EA	$465,000	$ 465,000
54	ASOS (Airport Surface Observation System)	1	EA	$88,000	$ 88,000
55	Low level Wind Shear Sensor	1	EA	$88,000	$ 88,000

Item No.	Item Description	Approx. Quantity	Unit	Unit Price	Total
56	RVR (Mid-Field & Rollout)	2	EA	$152,000	$ 304,000
57	ASDE Alignment Targets	4	EA	$3,750	$ 15,000
	STRUCTURAL				
58	Sepulveda Bridge	1	LS	$4,000,000	$ 4,000,000
59	**Contingency (25%)**	1	LS		$ 38,000,000
		TOTAL BID			**$ 186,192,000**

Appendix F Hydrology and Water Quality Analysis

An engineering analysis was conducted by HNTB to determine the drainage system improvements required to accommodate projected storm water flows associated with the South Airfield Improvement Project. The findings of this analysis were documented in a *Program Refinement/Preliminary Engineering Report* (September 26, 2003). As part of this analysis, HNTB modeled drainage flows using the Los Angeles County Department of Public Works *Hydrology Manual* (December, 1991) Modified Rational Method. The results of this analysis were used as the basis of the findings in Section 4.1, *Hydrology/Water Quality*, of this Draft Project-Level Tiered EIR. The modeling results are provided in the *Program Refinement/Preliminary Engineering Report*.

For the South Airfield Improvement Project-Level Tiered EIR, storm water modeling was conducted to evaluate potential impacts on water quality. Calculations associated with this analysis are provided on the following pages.

Table F-1

South Airfield Existing Conditions - Impervious Area

Watershed	Impervious (acres)	Pervious (acres)	Total (acres)	Percent Impervious
Dominguez	90.28	59.58	149.86	60.2
Argo Channel	62.84	41.9	104.74	60.0
Santa Monica Bay	52.08	48.75	100.83	51.7
Airport Operations	50.631	46.98	97.61	51.9
Airport Open Space	1.449	1.77	3.22	45

Table F-2

South Airfield Existing Conditions - Average Annual Stormwater Runoff

Region within Hydrology and Water Quality Study Area	(ft^3)
Santa Monica Bay Watershed (Watershed C)	
Airport Operations	2,039,587
Airport Open Space	60,295
Argo Channel Watershed (Watershed B)	
	2,457,374
Dominguez Channel Watershed (Watershed A)	
	3,527,642
Runoff Totals	8,084,898

Table F-3

South Airfield Existing Conditions - Average Annual Pollutant Load

Santa Monica Bay Watershed (Watershed C)				Argo Channel Watershed (Watershed B)		Dominguez Channel Watershed (Watershed A)		Total Lc
	lbs/yr	lbs/yr	lbs/yr		lbs/yr		lbs/yr	
Pollutant	Airport Oper.	Airport Open	Total	Pollutant	Airport Oper.	Pollutant	Airport Oper.	Pollutant
TSS	2,420	72	2,492	TSS	2,916	TSS	4,186	TSS
Total P	31	1	31	Total P	37	Total P	53	Total P
TKN	136	4	140	TKN	164	TKN	236	TKN
Total Cu	7	0	7	Total Cu	9	Total Cu	12	Total Cu
Total Pb	1	0	1	Total Pb	2	Total Pb	2	Total Pb
Total Zn	37	1	38	Total Zn	45	Total Zn	64	Total Zn
O&G	292	9	300	O&G	351	O&G	504	O&G
BOD_5	838	25	863	BOD_5	1,009	BOD_5	1,449	BOD_5
COD	5,819	172	5,991	COD	7,011	COD	10,064	COD
Ammonia	37	1	38	Ammonia	44	Ammonia	64	Ammonia
Total Coliform*	88,173,677	2,606,625	90,780,302	Total Coliform*	106,235,132	Total Coliform*	152,504,041	Total Coliform*
Fecal Coliform*	41,858,623	1,237,441	43,096,064	Fecal Coliform*	50,432,924	Fecal Coliform*	72,398,128	Fecal Coliform*
Fecal Enterococcus*	4,074,451	120,451	4,194,902	Fecal Enterococcus*	4,909,060	Fecal Enterococcus*	7,047,118	Fecal Enterococcus*

*Load expressed in organisms/yr

Table F-4

South Airfield Future Conditions - Impervious Area

Watershed C

	Total Acres	Impervious	Pervious	Impervious %
1.1	4.34	3.22	1.12	74
1.2	3.70	1.97	1.73	53
1.3	3.66	1.94	1.72	53
1.4	1.72	0.88	0.84	51
1.5	2.09	1.16	0.93	56
1.6	3.20	2.25	0.95	70
1.7	4.53	3.17	1.36	70
1.8	2.33	1.14	1.19	49
1.9	1.28	0.73	0.55	57
1.10	1.77	1.33	0.44	75
2.1	5.25	3.63	1.62	69
2.2	3.73	2.13	1.60	57
2.3	3.70	2.11	1.59	57
2.4	3.67	2.13	1.54	58
2.5	1.90	1.48	0.42	78
2.6	4.98	4.60	0.38	92
2.7	3.29	2.89	0.40	88
2.8	4.34	2.85	1.49	66
3.1	8.04	5.71	2.33	71
3.2	4.11	2.50	1.61	61
3.3	4.13	2.52	1.61	61
3.4	2.74	2.20	0.54	80
3.5	6.95	4.78	2.17	69
3.6	1.36	0.82	0.54	61
3.7	7.57	5.16	2.41	68
BP	3.22	3.22	0.00	100
AA5	3.23	2.43	0.80	75
total	100.83	68.97	31.86	68

Watershed B

	Total Acres	Impervious	Pervious	Impervious %
1.1	2.50	2.05	0.45	82
1.2	3.00	1.69	1.31	56
1.3	3.24	1.73	1.51	53
1.4	5.32	3.44	1.88	65
1.5	2.44	1.99	0.45	81
1.6	3.39	1.92	1.47	57
1.7	3.64	1.92	1.72	53
1.8	3.73	2.00	1.73	54
1.9	3.31	1.78	1.53	54
1.10	3.09	1.61	1.48	52
2.1	6.53	5.82	0.71	89
2.2	8.46	7.77	0.69	92
2.3	10.05	8.16	1.89	81
2.4	7.95	7.42	0.53	93
3.1	3.19	2.46	0.73	77
3.2	3.09	1.61	1.48	52
3.3	9.90	7.03	2.87	71
3.4	4.81	3.92	0.89	81
3.5	4.08	2.33	1.75	57
3.6	4.12	2.13	1.99	52
3.7	3.53	1.83	1.70	52
AB2	5.37	5.37	0.00	100
total	104.74	75.98	28.76	73

Watershed A

	Total Acres	Impervious	Pervious	Impervious %
1.1	6.16	5.40	0.76	88
1.2	0.94	0.59	0.35	63
1.3	3.17	1.71	1.46	54
1.4	6.22	4.21	2.01	68
1.5	1.87	1.57	0.30	84
1.6	2.77	1.28	1.49	46
1.7	3.47	1.78	1.69	51
1.8	6.41	4.13	2.28	64
2.1	3.08	1.73	1.35	56
2.2	4.55	3.28	1.27	72
2.3	0.84	0.48	0.36	57
2.4	5.47	3.74	1.73	68
2.5	2.23	2.00	0.23	90
2.6	4.77	4.51	0.26	94
2.7	6.05	4.00	2.05	66
2.8	3.65	2.07	1.58	57
2.9	3.68	2.09	1.59	57
2.10	3.74	2.15	1.59	57
2.11	2.43	1.38	1.05	57
2.12	3.65	2.62	1.03	72
3.1	3.19	1.67	1.52	52
3.2	6.28	4.00	2.28	64
3.3	2.33	1.68	0.65	72
3.4	6.06	4.10	1.96	68
3.5	4.08	3.79	0.29	93
3.6	4.12	3.35	0.77	81
3.7	3.53	1.56	1.97	44
3.8	3.19	1.22	1.97	38
3.9	4.02	2.05	1.97	51
3.10	4.06	2.07	1.99	51
3.11	5.57	3.86	1.71	69
BP	3.03	3.03	0.00	100
AA1	5.60	5.60	0.00	100
AA2	1.93	1.61	0.32	84
AA3	3.11	2.36	0.75	76
AA4	7.75	6.72	1.03	87
E1	6.86	3.12	3.74	45
total	149.86	102.49	47.37	68

Table F-5

South Airfield Future Conditions - Average Annual Stormwater Runoff

Watershed C	Runoff ft^3	Watershed B	Runoff ft^3	Watershed A	Runoff ft^3
1.1	121,286	1.1	75,994	1.1	198,266
1.2	78,849	1.2	67,031	1.2	22,997
1.3	77,937	1.3	69,203	1.3	68,233
1.4	35,648	1.4	132,666	1.4	161,061
1.5	46,126	1.5	73,784	1.5	57,927
1.6	85,655	1.6	76,040	1.6	52,817
1.7	120,553	1.7	77,206	1.7	71,751
1.8	46,557	1.8	79,911	1.8	159,320
1.9	28,848	1.9	71,003	2.1	68,519
1.10	50,021	1.10	64,679	2.2	124,084
2.1	138,330	2.1	213,321	2.3	19,035
2.2	84,263	2.2	283,518	2.4	142,894
2.3	83,388	2.3	303,082	2.5	73,265
2.4	83,785	2.4	270,160	2.6	163,847
2.5	55,436	3.1	92,241	2.7	153,669
2.6	167,880	3.2	64,870	2.8	81,904
2.7	106,192	3.3	266,861	2.9	82,649
2.8	109,553	3.4	145,469	2.10	84,635
3.1	216,537	3.5	92,002	2.11	54,438
3.2	97,434	3.6	85,849	2.12	99,179
3.3	98,100	3.7	73,573	3.1	67,140
3.4	81,914	AB2	193,839	3.2	154,572
3.5	182,304			3.3	63,668
3.6	32,176			3.4	156,741
3.7	197,264			3.5	138,224
BP	116,231			3.6	124,349
AA5	91,197			3.7	65,173
				3.8	52,834
				3.9	82,970
				3.10	83,778
				3.11	147,014
				BP	109,373
				AA1	202,142
				AA2	59,691
				AA3	88,684
				AA4	247,079
				E1	129,471
TOTAL	2,633,467	TOTAL	2,872,303	TOTAL	3,913,392

Table F-6

South Airfield Future Conditions - No BMPs - Average Annual Pollutant Load

Watershed	Parameter	Land Use Classifications Airport Operations (lbs/yr)
Santa Monica Bay Watershed (Watershed C)-Combination of all Subbasins		
	TSS	3,125
	Total P	39
	TKN	176
	Total Cu	9
	Total Pb	2
	Total Zn	48
	O&G	376
	BOD_5	1,082
	COD	7,513
	Ammonia	48
	Total Coliform *	113,847,826
	Fecal Coliform *	54,046,892
	Fecal Enterococcus *	5,260,838
Argo Channel Watershed (Watershed B)-Combination of all Subbasins		
	TSS	3,409
	Total P	43
	TKN	192
	Total Cu	10
	Total Pb	2
	Total Zn	52
	O&G	411
	BOD_5	1,180
	COD	8,195
	Ammonia	52
	Total Coliform *	124,172,984
	Fecal Coliform *	58,948,547
	Fecal Enterococcus *	5,737,957
Dominguez Channel Watershed (Watershed A)-Combination of all Subbasins		
	TSS	4,644
	Total P	59
	TKN	261
	Total Cu	14
	Total Pb	2
	Total Zn	71
	O&G	559
	BOD_5	1,608
	COD	11,165
	Ammonia	71
	Total Coliform *	169,180,465
	Fecal Coliform *	80,314,914
	Fecal Enterococcus *	7,817,725
Total Pollutant Loading		
	TSS	11,178
	Total P	141
	TKN	629
	Total Cu	33
	Total Pb	6
	Total Zn	171
	O&G	1,347
	BOD_5	3,869
	COD	26,872
	Ammonia	171
	Total Coliform *	407,201,275
	Fecal Coliform *	193,310,353
	Fecal Enterococcus *	18,816,521

*Load expressed in organisms/yr

Table F-7

South Airfield Future Conditions - BMPs - Removal Efficiency

Pollutant	Catch Basin Insert	BioSwale	BioSwale with Retention[2]	SWTS	Infiltration
		PERCENT REMOVAL			
TSS	15	----	----	50	80
Total P	0	----	----	15	80
Total N	0	30	30	----	80
Total Cu	5	60	60	----	80
Total Pb	10	60	60	----	80
Total Zn	5	60	60	----	80
O&G	10	----	----	80	80
BOD5	15	----	----	50	80
COD	15	----	----	50	80
Ammonia	0	30	30	----	80
Total Coliform[1]	0	----	20	0	80
Fecal Coliform[1]	0	----	20	0	80
Fecal Enterococcus[1]	0	----	20	0	80

[1] * Load expressed in organisms/yr

[1] * Pervious layer to facilitate infiltration in Dominguez watershed bioswales

Table F-8

South Airfield Future Conditions - With BMPs - Average Annual Pollutant Load

Watersheds	Parameter	Land Use Classifications Airport Operations (lbs/yr)
Santa Monica Bay Watershed (Watershed C)-Combination of all Subbasins		
	TSS	2,061
	Total P	26
	TKN	104
	Total Cu	5
	Total Pb	1
	Total Zn	24
	O&G	250
	BOD_5	713
	COD	4,955
	Ammonia	28
	Total Coliform *	76,428,929
	Fecal Coliform *	36,283,047
	Fecal Enterococcus *	3,531,734
Argo Channel Watershed (Watershed B)-Combination of all Subbasins		
	TSS	1,680
	Total P	27
	TKN	130
	Total Cu	7
	Total Pb	1
	Total Zn	35
	O&G	160
	BOD_5	581
	COD	4,038
	Ammonia	35
	Total Coliform *	83,816,380
	Fecal Coliform *	39,790,087
	Fecal Enterococcus *	3,873,103
Dominguez Channel Watershed (Watershed A)-Combination of all Subbasins		
	TSS	2,918
	Total P	52
	TKN	207
	Total Cu	8
	Total Pb	1
	Total Zn	41
	O&G	233
	BOD_5	1,010
	COD	7,015
	Ammonia	56
	Total Coliform *	147,207,360
	Fecal Coliform *	69,883,639
	Fecal Enterococcus *	6,802,362
Total Pollutant Loading		
	TSS	6,659
	Total P	106
	TKN	440
	Total Cu	19
	Total Pb	3
	Total Zn	100
	O&G	643
	BOD_5	2,305
	COD	16,007
	Ammonia	119
	Total Coliform *	307,452,669
	Fecal Coliform *	145,956,772
	Fecal Enterococcus *	14,207,199

*Load expressed in organisms/yr

Project: Los Angeles International Airport Southside Airfield Improvement Program
Area: A
Rainfall Zone: K
Soil Type No.: 9

Relevant Equations:
Tc=(10^-0.507)*((Cd*Ix)^-0.519)*(Length^0.483)*(Slope)^-0.135
$C_d = (0.9*Imp)+((1.0-Imp)*C_u)$
Qpm = Cd*Ix*Atotal*(1.008333 ft^3 - hour/ acre-inches-seconds)
Vm=(2,722.5 ft^3/ acre) * [(Ai)(0.9)+(Ap+Au)(Cu)]
If $C_d<C_u$, $C_d = C_u$

Subarea No.	Assume Time (Min)	Delta Length (ft)	Overland Elevations Top	Overland Elevations Bottom	Slope	Soil No.	I_x (in/hr)	Delta Time	Cum. Flow Time	Area (ac)	Cum. Area (ac)	Prop. Imp.	C_u	C_d	Q_{pm} (cfs)
A1.1	21	300	102.80	96.69	2.04%	9	0.228	20.84	20.84	6.16	6.16	0.80	0.100	0.740	1.05
A1.2	30	202			0.20%	9	0.193	25.67	46.51	0.94	7.10	0.80	0.100	0.740	1.02
A1.3	30	350			0.20%	9	0.193	33.48	79.99	3.17	10.27	0.80	0.100	0.740	1.48
A1.4	30	350			0.20%	9	0.193	33.48	113.48	6.22	16.49	0.80	0.100	0.740	2.37
A1.5	30	505			0.20%	9	0.193	39.97	153.44	1.87	18.36	0.80	0.100	0.740	2.64
A1.6	30	350			0.20%	9	0.193	33.48	186.93	2.77	21.13	0.80	0.100	0.740	3.04
A1.7	30	350			0.20%	9	0.193	33.48	220.41	3.47	24.60	0.80	0.100	0.740	3.54
A1.8	30	360			0.20%	9	0.193	33.94	254.35	6.41	31.01	0.80	0.100	0.740	4.47
AA1	30	540	104.70	99.27	1.01%	9	0.193	33.20	33.20	5.60	5.60	0.80	0.100	0.740	0.81
A2.1	30	490	106.80	101.93	0.99%	9	0.193	31.72	31.72	3.08	3.08	0.80	0.100	0.740	0.44
A2.2	30	400			0.20%	9	0.193	35.71	68.91	4.55	13.23	0.80	0.100	0.740	1.91
A2.3	24	290	104.00	101.40	0.90%	9	0.214	23.67	23.67	0.84	0.84	0.80	0.100	0.740	0.13
A2.4	30	370	96.00	95.20	0.22%	9	0.193	34.03	102.94	5.47	19.54	0.80	0.100	0.740	2.81
A2.5	30	450			0.20%	9	0.193	37.80	140.74	2.23	21.77	0.80	0.100	0.740	3.14
A2.6	30	150			0.20%	9	0.193	22.24	162.98	4.77	26.54	0.80	0.100	0.740	3.82
A2.7	30	620			0.20%	9	0.193	44.13	207.11	6.05	32.59	0.80	0.100	0.740	4.69
A2.8	30	400			0.20%	9	0.193	35.71	242.83	3.65	36.24	0.80	0.100	0.740	5.22
A2.9	30	400			0.20%	9	0.193	35.71	278.54	3.68	39.92	0.80	0.100	0.740	5.75
A2.10	30	400			0.20%	9	0.193	35.71	314.25	3.74	43.66	0.80	0.100	0.740	6.29
A2.11	30	400			0.20%	9	0.193	35.71	349.96	2.43	46.09	0.80	0.100	0.740	6.64
A2.12	30	400			0.20%	9	0.193	35.71	385.68	3.65	49.74	0.80	0.100	0.740	7.16
A3.1	20	490	106.70	100.44	1.28%	9	0.233	20.00	20.00	3.19	3.19	0.80	0.100	0.740	0.55
A3.2	30	400			0.20%	9	0.193	35.71	55.71	6.28	9.47	0.80	0.100	0.740	1.36
A3.3	30	450			0.20%	9	0.193	37.80	93.52	2.33	11.80	0.80	0.100	0.740	1.70
A3.4	30	300			0.20%	9	0.193	31.08	124.60	6.06	17.86	0.80	0.100	0.740	2.57
A3.5	30	460			0.20%	9	0.193	38.21	162.80	2.14	20.00	0.80	0.100	0.740	2.88
A3.6	30	210			0.20%	9	0.193	26.16	188.96	1.67	21.67	0.80	0.100	0.740	3.12
A3.7	30	400			0.20%	9	0.193	35.71	198.51	4.10	25.77	0.80	0.100	0.740	3.71
A3.8	30	400			0.20%	9	0.193	35.71	234.23	4.06	29.83	0.80	0.100	0.740	4.30
A3.9	30	400			0.20%	9	0.193	35.71	269.94	4.02	33.85	0.80	0.100	0.740	4.87
A3.10	30	400			0.20%	9	0.193	35.71	305.65	4.08	37.93	0.80	0.100	0.740	5.46
A3.11	30	300			0.20%	9	0.193	31.08	336.73	5.57	43.50	0.80	0.100	0.740	6.26
A-BP	30	450	95.20	92.50	0.60%	9	0.193	32.59	32.59	3.03	3.03	0.80	0.100	0.740	0.44

Project: Los Angeles International Airport Southside Airfield Improvement Program
Area: A
Rainfall Zone: K
Soil Type No.: 9

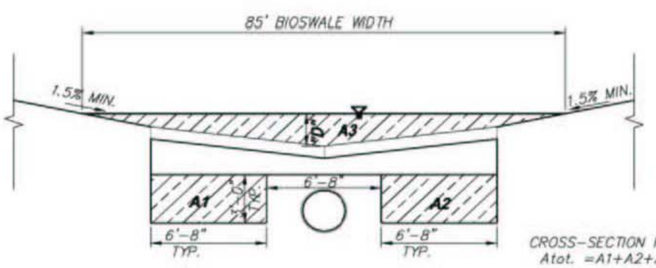
Relevant Equations:
Tc=(10^-0.507)*((Cd*Ix)^-0.519)*(Length^0.483)*(Slope)^-0.135
Vm=(2,722.5 ft^3/ acre) * [(Ai)(0.9)+(Ap+Au)(Cu)]

Soil Infiltration Rate: 10^-6 - 10^-8 cm/sec

Subarea No.	Bioswale #	Vm CF	Length of Bioswale (ft)	Cross- Section Required (sf)	Water Height (ft) ("D")	Width of Bioswale (ft)	Plan Area (sf)	Infiltration Time (Hr): 48 Hrs Max	Soil Pervious Analysis	Proposed BMP	Filtered Flow Proposed (cfs)
A1.1	1	12410.24	410	30.3	0.73	96.92	79471.50	5205.32	Not Sufficient	SWTS	
A1.2	2	1893.77	90	21.0	0.61	80.81	14545.02	4340.02	Not Sufficient	SWTS	
A1.3	3	6386.44	350	18.2	0.56	75.25	52673.57	4041.52	Not Sufficient	SWTS	
A1.4	4	12531.12	410	30.6	0.73	97.39	79857.60	5230.61	Not Sufficient	SWTS	
A1.5	5	3767.40	75	50.2	0.94	124.86	18727.53	6706.63	Not Sufficient	SWTS	
A1.6	6	5580.58	350	15.9	0.53	70.34	49238.30	3777.94	Not Sufficient	SWTS	
A1.7	7	6990.84	350	20.0	0.59	78.73	55109.68	4228.44	Not Sufficient	SWTS	
A1.8	8	12913.91	330	39.1	0.83	110.20	72730.25	5918.63	Not Sufficient	SWTS	
A2.1	9	6205.12	220	28.2	0.70	93.55	41163.83	5024.74	Not Sufficient	SWTS	
A2.2	10	9166.66	420	21.8	0.62	82.30	69128.87	4420.08	Not Sufficient	SWTS	
A2.3	11	1692.31	120	14.1	0.50	66.15	15876.67	3553.02	Not Sufficient	SWTS	
A2.4	12	11020.14	460	24.0	0.65	86.22	79323.47	4630.88	Not Sufficient	SWTS	
A2.5	13	4492.67	130	34.6	0.78	103.56	26924.85	5561.99	Not Sufficient	SWTS	
A2.6	14	9609.88	250	38.4	0.82	109.22	54608.26	5865.95	Not Sufficient	SWTS	
A2.7	15	12188.63	480	25.4	0.67	88.77	85217.23	4767.67	Not Sufficient	SWTS	
A2.8	16	7353.47	400	18.4	0.57	75.53	60423.45	4056.63	Not Sufficient	SWTS	
A2.9	17	7413.91	400	18.5	0.57	75.84	60671.26	4073.27	Not Sufficient	SWTS	
A2.10	18	7534.79	400	18.8	0.57	76.45	61163.87	4106.34	Not Sufficient	SWTS	
A2.11	19	4895.60	270	18.1	0.56	75.01	40505.51	4028.75	Not Sufficient	SWTS	
A2.12	20	7353.47	260	28.3	0.70	93.68	48714.96	5031.63	Not Sufficient	SWTS	
A3.1	21	6426.73	300	21.4	0.61	81.53	48919.85	4379.09	Not Sufficient	SWTS	
A3.2	22	12652.00	470	26.9	0.69	91.40	85912.80	4908.85	Not Sufficient	SWTS	
A3.3	23	4694.13	130	36.1	0.79	105.86	27521.92	5685.33	Not Sufficient	SWTS	
A3.4	24	12208.78	450	27.1	0.69	91.75	82579.39	4928.10	Not Sufficient	SWTS	
A3.5	25	4311.35	60	71.9	1.12	149.32	17918.91	8020.11	Not Sufficient	SWTS	
A3.6	26	3364.47	120	28.0	0.70	93.28	22386.08	5009.76	Not Sufficient	SWTS	
A3.7	27	8260.07	400	20.7	0.60	80.05	64039.96	4299.43	Not Sufficient	SWTS	
A3.8	28	8179.48	400	20.4	0.60	79.66	63726.80	4278.41	Not Sufficient	SWTS	
A3.9	29	8098.89	400	20.2	0.59	79.27	63412.10	4257.28	Not Sufficient	SWTS	
A3.10	30	8219.77	400	20.5	0.60	79.85	63883.57	4288.93	Not Sufficient	SWTS	
A3.11	28	11221.60	380	29.5	0.72	95.73	72752.60	5141.44	Not Sufficient	SWTS	
										Combined	30 CFS

Assumptions: Assumed a 6'-8"x3' Infiltration Ditch, each side of the Maintenance Road
Calculated Average Infiltration Sectional Area 6'-8" Each Side @ 3' Deep = 40 sf.
Infiltration Unit will be used with a Porosity of 75%
Average Bioswale Slope Used: 1.44% = 10' @ 1% + 75' @1.5%

Soil Infiltration Rate Recommended by Geotechnical Engineer: Ninyo And Moore: 12^-2 - 10^-4 cm/sec
Soil Rate Used: 10^-3cm/sec
Hydrodynamic Structures will be sized based on flow requirements
Storm Water Treatment System = SWTS
Bioswale Proposed: 85' Maintained Section



BIOSWALE CROSS SECTION

CROSS-SECTION REQ.
Atot. =A1+A2+A3
Plan Area = A3
Infiltration Ditch
Holding Volume = A1+A2
"D"= Water Height

Project: Los Angeles International Airport Southside Airfield Improvement Program
Area: B
Rainfall Zone: K
Soil Type No.: 14

Relevant Equations:
Tc=(10^-0.507)*((Cd*Ix)^-0.519)*(Length^0.483)*(Slope)^-0.135
C_d = (0.9*Imp)+((1.0-Imp)*C_u)
Qpm = Cd*Ix*Atotal*(1.008333 ft^3 - hour/ acre-inches-seconds)
Vm=(2,722.5 ft^3/ acre) * [(Ai)(0.9)+(Ap+Au)(Cu)]
If C_d<C_u, C_d = C_u

Subarea No.	Assumed Time (Min)	Delta Length (ft)	Elev Top	Elev Bottom	Slope	Soil No.	I_x (in/hr)	Delta Time	Cum. Flow Time	Area (ac)	Cum. Area (ac)	Prop. Imp.	C_u	C_d	Q_{pm} (cfs)
B1.1	28	410	124.90	120.26	1.13%	14	0.199	28.15	28.15	2.50	2.50	0.80	0.100	0.740	0.37
B1.2	30	300			0.20%	14	0.193	31.08	59.23	3.00	5.50	0.80	0.100	0.740	0.79
B1.3	30	350			0.20%	14	0.193	33.48	92.71	3.24	8.74	0.80	0.100	0.740	1.26
B1.4	30	350			0.20%	14	0.193	33.48	126.19	5.32	14.06	0.80	0.100	0.740	2.02
B1.5	30	540			0.20%	14	0.193	41.28	167.48	2.44	16.50	0.80	0.100	0.740	2.38
B1.6	30	350			0.20%	14	0.193	33.48	200.96	3.39	19.89	0.80	0.100	0.740	2.86
B1.7	30	400			0.20%	14	0.193	35.71	236.67	3.64	23.53	0.80	0.100	0.740	3.39
B1.8	30	400			0.20%	14	0.193	35.71	272.38	3.73	27.26	0.80	0.100	0.740	3.93
B1.9	30	350			0.20%	14	0.193	33.48	305.87	3.31	30.57	0.80	0.100	0.740	4.40
B1.10	30	350			0.20%	14	0.193	33.48	339.35	3.09	33.66	0.80	0.100	0.740	4.85
B2.1	23	350	122.00	115.20	1.94%	14	0.218	23.12	23.12	6.53	6.53	0.80	0.100	0.740	1.06
B2.2	30	350			0.20%	14	0.193	33.48	56.61	8.46	14.99	0.80	0.100	0.740	2.16
B2.3	30	350			0.20%	14	0.193	33.48	90.09	10.05	25.04	0.80	0.100	0.740	3.61
B2.4	30	350			0.20%	14	0.193	33.48	123.57	7.95	32.99	0.80	0.100	0.740	4.75
B3.1	30	420			0.20%	14	0.193	36.56	36.56	3.19	3.19	0.80	0.100	0.740	0.46
B3.2	30	300			0.20%	14	0.193	31.08	67.64	3.09	6.28	0.80	0.100	0.740	0.90
B3.3	30	480			0.20%	14	0.193	39.00	106.64	9.90	16.18	0.80	0.100	0.740	2.33
B3.4	30	990			0.20%	14	0.193	55.32	161.97	4.81	20.99	0.80	0.100	0.740	3.02
B3.5	30	400			0.20%	14	0.193	35.71	197.68	4.08	25.07	0.80	0.100	0.740	3.61
B3.6	30	400			0.20%	14	0.193	35.71	233.39	4.12	29.19	0.80	0.100	0.740	4.20
B3.7	30	390			0.20%	14	0.193	35.28	268.67	3.53	32.72	0.80	0.100	0.740	4.71
												0.80	0.100	0.740	0.00

Project: Los Angeles International Airport Southside Airfield Improvement Program
Area: B
Rainfall Zone: K
Soil Type No.: 14

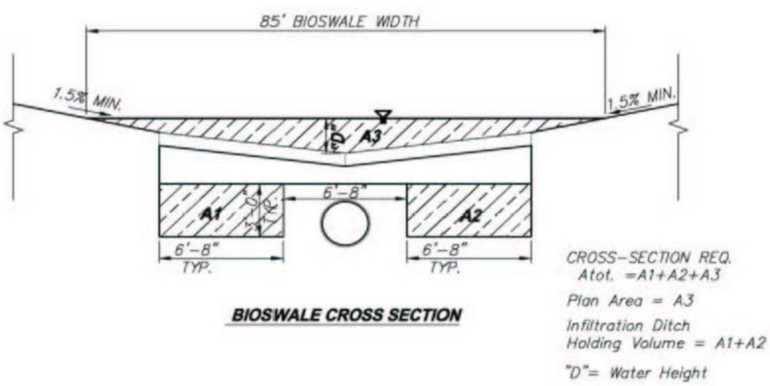
Relevant Equations:
Tc=(10^-0.507)*((Cd*Ix)^-0.519)*(Length^0.483)*(Slope)^-0.135
Vm=(2,722.5 ft^3/ acre) * [(Ai)(0.9)+(Ap+Au)(Cu)]

Soil Infiltration Rate: 10^-2 - 10^-4 cm/sec

Subarea No.	Bioswale #	Vm (cf)	Length of BMP (ft)	Infiltration Ditch Holding Volume (cf)	Bioswale X-Section Required (sf)	Water Height (ft) ("D")	Total Width Bioswale (ft)	Plan Area (sf)	Infiltration Time (hr) (48 Hrs Max)	Soil Pervious Analysis (10^-3 Assummed Infiltration Rate)	Proposed BMP	Filtered Flow Proposed (cfs)
B1.1	32	5036.63	80	2400	33.0	0.76	105.34	8427	5.06	Sufficient	Catch Basin Insert	2.4
B1.2	33	6043.95	300	9000	0.0	0.00	**0.00**	0	12.70	Sufficient	Bioswale/Infiltration	
B1.3	34	6527.47	350	10500	0.0	0.00	**0.00**	0	12.70	Sufficient	Bioswale/Infiltration	
B1.4	35	10717.94	450	13500	0.0	0.00	**0.00**	0	12.70	Sufficient	Bioswale/Infiltration	
B1.5	36	4915.75	100	3000	19.2	0.58	80.32	8032	5.18	Sufficient	Catch Basin Insert	2.4
B1.6	37	6829.66	330	9900	0.0	0.00	**0.00**	0	12.70	Sufficient	Bioswale/Infiltration	
B1.7	38	7333.33	400	12000	0.0	0.00	**0.00**	0	12.70	Sufficient	Bioswale/Infiltration	
B1.8	39	7514.64	400	12000	0.0	0.00	**0.00**	0	12.70	Sufficient	Bioswale/Infiltration	
B1.9	40	6868.49	350	10500	0.0	0.00	**0.00**	0	12.70	Sufficient	Bioswale/Infiltration	
B1.10	41	6225.27	450	13500	0.0	0.00	**0.00**	0	12.70	Sufficient	Bioswale/Infiltration	
B2.1	42	13155.66	140	4200	64.0	1.06	146.76	20547	5.42	Sufficient	SWTS	8.5
B2.2	43	17043.94	270	8100	33.1	0.76	105.61	28515	5.06	Sufficient	SWTS	
B2.3	44	20247.23	600	18000	3.7	0.26	35.51	21307	8.05	Sufficient	SWTS	
B2.4	45	16016.47	180	5400	59.0	1.01	140.92	25366	5.36	Sufficient	SWTS	
B3.1	46	6426.73	200	6000	2.1	0.19	**26.80**	5361	10.15	Sufficient	Bioswale/Infiltration	
B3.2	47	6225.27	300	9000	0.0	0.00	**0.00**	0	12.70	Sufficient	Bioswale/Infiltration	
B3.3	48	19945.04	580	17400	4.4	0.28	**38.44**	22294	7.57	Sufficient	Bioswale/Infiltration	
B3.4	49	9690.47	300	9000	2.3	0.20	**27.84**	8351	9.82	Sufficient	Bioswale/Infiltration	
B3.5	50	8219.77	400	12000	0.0	0.00	**0.00**	0	12.70	Sufficient	Bioswale/Infiltration	
B3.6	51	8300.36	400	12000	0.0	0.00	**0.00**	0	12.70	Sufficient	Bioswale/Infiltration	
B3.7	52	7111.71	350	10500	0.0	0.00	**0.00**	0	12.70	Sufficient	Bioswale/Infiltration	

Assumptions: Assumed a 6'-8"x3' Infiltration Ditch, each side of the Maintenance Road
Calculated Average Infiltration Sectional Area 6'-8" Each Side * 3' Deep = 40 sf.
Infiltration Unit will be used with a Porosity of 75%
Average Bioswale Slope Used: 1.44% = 10' @ 1% + 75' @1.5%

Soil Infiltration Rate Recommended by Geotechnical Engineer: Ninyo And Moore: 12^-2 - 10^-4 cm/sec
Soil Rate Used: 10^-3cm/sec
Bioswale Proposed: 85' Maintained Section
Storm Water Treatment System = SWTS



BIOSWALE CROSS SECTION

Project: Los Angeles International Airport Southside Airfield Improvement Program
Area: C
Rainfall Zone: K
Soil Type No.: 10

Relevant Equations:
Tc=(10^-0.507)*((Cd*Ix)^-0.519)*(Length^0.483)*(Slope)^-0.135
$C_d = (0.9*Imp)+((1.0-Imp)*C_u)$
Qpm = Cd*Ix*Atotal*(1.008333 ft^3 - hour/ acre-inches-seconds)
Vm=(2,722.5 ft^3/ acre) * [(Ai)(0.9)+(Ap+Au)(Cu)]
If $C_d<C_u$, $C_d = C_u$

Subarea No.	Assum Time (Min)	Delta Length (ft)	Overland Elevation Top	Overland Elevation Bottom	Slope	Soil No.	I_x (in/hr)	Delta Time	Cum. Flow Time	Area (ac)	Cum. Area (ac)	Prop. Imp.	C_u	C_d	Q_{pm} (cfs)
C1.1	25	340	118.00	114.63	0.99%	10	0.210	25.46	25.46	4.34	4.34	0.80	0.100	0.740	0.68
C1.2	30	400			0.20%	10	0.193	35.71	184.50	3.70	14.37	0.80	0.100	0.740	2.07
C1.3	30	400			0.20%	10	0.193	35.71	148.79	3.66	10.67	0.80	0.100	0.740	1.54
C1.4	30	400			0.20%	10	0.193	35.71	113.08	1.72	7.01	0.80	0.100	0.740	1.01
C1.5	30	400			0.20%	10	0.193	35.71	77.36	2.09	5.29	0.80	0.100	0.740	0.76
C1.6	30	550			0.20%	10	0.193	41.65	41.65	3.20	3.20	0.80	0.100	0.740	0.46
C1.7	30	200			0.20%	10	0.193	25.55	104.07	4.53	9.90	0.80	0.100	0.740	1.43
C1.8	30	300			0.20%	10	0.193	31.08	78.52	2.33	5.37	0.80	0.100	0.740	0.77
C1.9	30	200			0.20%	10	0.193	25.55	47.44	1.56	3.04	0.80	0.100	0.740	0.44
C1.10	22	290	124.10	120.14	1.37%	10	0.223	21.89	21.89	1.48	1.48	0.80	0.100	0.740	0.25
C2.1	22	300	119.20	114.90	1.43%	10	0.223	22.10	22.10	5.25	5.25	0.80	0.100	0.740	0.87
C2.2	20	100			0.20%	10	0.233	16.58	42.13	3.73	35.51	0.80	0.100	0.740	6.17
C2.3	30	400			0.20%	10	0.193	35.71	52.29	3.70	31.78	0.80	0.100	0.740	4.58
C2.4	30	400			0.20%	10	0.193	35.71	71.43	3.67	28.08	0.80	0.100	0.740	4.04
C2.5	20	400			0.20%	10	0.233	32.39	68.10	1.90	24.41	0.80	0.100	0.740	4.24
C2.6	23	390			0.20%	10	0.218	33.12	65.50	4.98	22.51	0.80	0.100	0.740	3.66
C2.7	26	380			0.20%	10	0.206	33.68	66.80	3.29	7.63	0.80	0.100	0.740	1.17
C2.8	29	370			0.20%	10	0.196	34.12	34.12	4.34	4.34	0.80	0.100	0.740	0.63
C3.1	30	400			0.20%	10	0.193	35.71	255.66	8.04	34.90	0.80	0.100	0.740	5.03
C3.2	30	400			0.20%	10	0.193	35.71	219.95	4.11	26.86	0.80	0.100	0.740	3.87
C3.3	30	400			0.20%	10	0.193	35.71	184.23	4.13	22.75	0.80	0.100	0.740	3.28
C3.4	30	660			0.20%	10	0.193	45.48	148.52	2.74	18.62	0.80	0.100	0.740	2.68
C3.5	30	400			0.20%	10	0.193	35.71	103.04	6.95	15.88	0.80	0.100	0.740	2.29
C3.6	30	400			0.20%	10	0.193	35.71	67.32	1.36	8.93	0.80	0.100	0.740	1.29
C3.7	30	490	122.00	117.00	1.02%	10	0.193	31.61	31.61	7.57	7.57	0.80	0.100	0.740	1.09
C-BP	22	450	119.20	117.60	0.36%	11	0.223	22.18	22.18	3.22	3.22	1.80	0.100	1.540	1.12

Project: Los Angeles International Airport Southside Airfield Improvement Program
Area: C
Rainfall Zone: K
Soil Type No.: 10

Relevant Equations:
Tc=(10^-0.507)*((Cd*Ix)^-0.519)*(Length^0.483)*(Slope)^-0.135
Vm=(2,722.5 ft^3/ acre) * [(Ai)(0.9)+(Ap+Au)(Cu)]

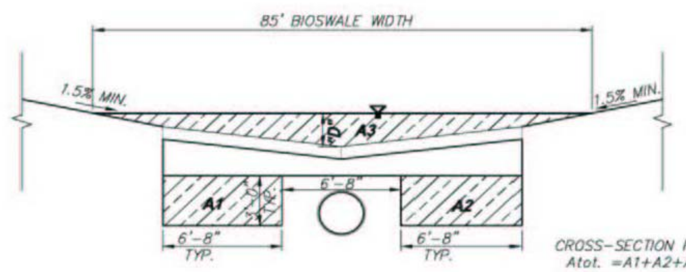
Soil Infiltration Rate:10^-2 - 10^-4 cm/sec

Subarea No.	Bioswale #	Vm (cf)	Length of BMP (ft)	Infiltration Ditch Holding Volume (cf)	Bioswale X-Section Required (sf)	Water Height (ft) ("D")	Total Width Bioswale (ft)	Plan Area (sf)	Infiltration Time (hr) (48 Hrs Max)	Soil Pervious Analysis (10^-3 Assummed Infiltration Rate)	Proposed BMP	Filtered Flow Proposed (cfs)
C1.1	53	8743.58	330	9900	0.0	0.00	0.00	0	19.05	Sufficient	Bioswale/Infiltration	
C1.2	54	7454.21	400	12000	0.0	0.00	0.00	0	19.05	Sufficient	Bioswale/Infiltration	
C1.3	55	7373.62	400	12000	0.0	0.00	0.00	0	19.05	Sufficient	Bioswale/Infiltration	
C1.4	56	3465.20	200	6000	0.0	0.00	0.00	0	19.05	Sufficient	Bioswale/Infiltration	
C1.5	57	4210.62	200	6000	0.0	0.00	0.00	0	19.05	Sufficient	Bioswale/Infiltration	
C1.6	58	6446.88	240	7200	0.0	0.00	0.00	0	19.05	Sufficient	Bioswale/Infiltration	
C1.7	59	9126.36	260	7800	5.1	0.30	41.45	10776	7.17	Sufficient	Bioswale/Infiltration	
C1.8	60	4694.13	300	9000	0.0	0.00	0.00	0	19.05	Sufficient	Bioswale/Infiltration	
C1.9	61	3142.85	90	2700	4.9	0.29	40.70	3663	7.26	Sufficient	Bioswale/Infiltration	
C1.10	62	2981.68	110	3300	0.0	0.00	0.00	0	19.05	Sufficient	Bioswale/Infiltration	
C2.1	63	10576.91	440	13200	0.0	0.00	0.00	0	19.05	Sufficient	Bioswale/Infiltration	
C2.2	64	7514.64	400	12000	0.0	0.00	0.00	0	19.05	Sufficient	Bioswale/Infiltration	
C2.3	65	7454.21	400	12000	0.0	0.00	0.00	0	19.05	Sufficient	Bioswale/Infiltration	
C2.4	66	7393.77	400	12000	0.0	0.00	0.00	0	19.05	Sufficient	Bioswale/Infiltration	
C2.5	67	3827.84	110	3300	4.8	0.29	40.20	4422	7.33	Sufficient	Bioswale/Infiltration	
C2.6	68	10032.96	90	2700	81.5	1.19	165.63	14907	5.70	Sufficient	Catch Basin Insert	2.4
C2.7	69	6628.20	190	5700	4.9	0.29	40.56	7706	7.28	Sufficient	Bioswale/Infiltration	
C2.8	70	8743.58	470	14100	0.0	0.00	0.00	0	19.05	Sufficient	Bioswale/Infiltration	
C3.1	71	16197.79	500	15000	2.4	0.20	28.40	14200	9.66	Sufficient	Bioswale / SWTS	8.5
C3.2	72	8260.21	400	12000	0.0	0.00	0.00	0	19.05	Sufficient	Bioswale / SWTS	
C3.3	73	8320.50	400	12000	0.0	0.00	0.00	0	19.05	Sufficient	Bioswale / SWTS	
C3.4	74	5520.14	120	3600	16.0	0.53	73.40	8808	5.31	Sufficient	Bioswale / SWTS	
C3.5	75	14001.82	500	15000	0.0	0.00	0.00	0	19.05	Sufficient	Bioswale / SWTS	
C3.6	76	2739.92	140	4200	0.0	0.00	0.00	0	19.05	Sufficient	Bioswale / SWTS	
C3.7	77	15250.90	570	17100	0.0	0.00	0.00	0	19.05	Sufficient	Bioswale / SWTS	

Assumptions: Assumed a 6'-8"x3' Infiltration Ditch, each side of the Maintenance Road
Calculated Average Infiltration Sectional Area 6'-8" Each Side * 3' Deep = 40 sf.
Infiltration Unit will be used with a Porosity of 75%
Average Bioswale Slope Used: 1.44% = 10' @ 1% + 75' @1.5%

Soil Infiltration Rate Recommended by Geotechnical Engineer: Ninyo And Moore: 12^-2 - 10^-4 cm/sec
Soil Rate Used: 10^-3cm/sec

Bioswale Proposed: 85' Maintained Section
Storm Water Treatment System = SWTS



BIOSWALE CROSS SECTION

CROSS-SECTION REQ.
Atot. =A1+A2+A3

Plan Area = A3

Infiltration Ditch
Holding Volume = A1+A2

"D"= Water Height

Appendix G Intersection Geometry

Appendix G provides the intersection geometry for each of the 19 intersections included in the Traffic Study. The existing intersection geometry is not proposed to change for any of the conditions analyzed. Consequently, only the Existing (2004) condition intersection geometry is included.

- TRAFFIX Existing (2004) Geometry

TRAFFIX Existing (2004) Geometry

LAX SOUTH AIRFIELD EIR

Lane Geometry Report

Number of approach lanes: (L) (LT) (T) (RT) (R) (LTR)

Node Intersection	NB						SB						EB						WB					
	L	LT	T	RT	R	LTR	L	LT	T	RT	R	LTR	L	LT	T	RT	R	LTR	L	LT	T	RT	R	LTR
1 IMPERIAL HWY @ PERSHING DR.	0	1	0	1	0	0	1	0	0	0	1	1	2	0	1	1	0	0	1	0	2	0	1	0
2 IMPERIAL HWY @MAIN STREET	1	1	0	0	1	0	0	0	0	1	0	0	0	0	2	1	0	0	1	0	2	0	1	0
3 IMPERIAL HWY @ SEPULVEDA BL.	1	0	3	0	1	0	2	0	3	1	0	0	2	0	3	0	1	0	2	0	3	0	1	0
4 IMPERIAL HWY @ NASH ST.	0	0	0	0	0	0	1	1	0	1	1	0	0	0	2	1	0	0	2	0	3	0	0	0
5 IMPERIAL HWY. @ DOUGLAS ST.	2	0	2	0	2	0	1	0	0	0	1	1	1	0	3	0	0	0	0	0	2	1	0	0
6 IMPERIAL HWY. @ AVIATION BL.	2	0	2	0	1	0	2	0	1	1	1	0	2	0	2	1	0	0	2	0	3	0	1	0
7 IMPERIAL HWY. @ 105 RAMP	2	0	0	0	2	0	0	0	0	0	0	0	0	0	2	1	1	0	1	0	3	0	0	0
8 IMPERIAL HWY. @ La CIENEGA BLVD.	2	0	1	1	1	0	2	0	1	1	1	0	2	0	3	0	2	0	2	0	3	0	2	0
9 IMPERIAL HWY. @ 405 NORTH RAMP	1	0	0	0	0	1	0	0	0	0	0	0	0	0	2	1	1	0	0	0	2	1	1	0
10 AVIATION BLVD. @ CENTURY BLVD.	2	0	1	1	0	0	2	0	2	0	1	0	1	0	3	1	0	0	1	0	3	1	0	0
11 AVIATION BLVD. @ 111TH	1	0	1	1	0	0	1	0	1	1	0	0	1	0	0	1	0	0	1	0	1	1	0	0
12 La CIENEGA BLVD. @ 405 S/B RAPM	0	0	1	1	1	0	1	0	2	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1
13 La CIENEGA BLVD. @ CENTURY BLVD	1	0	2	0	2	0	1	0	2	0	2	0	1	0	3	0	2	0	1	0	3	1	0	0
14 La CIENEGA BLVD. @ 405 S/B RAMP	0	0	1	1	0	0	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0
15 La CIENEGA BLVD. @ 104 TH STREET	1	0	1	1	0	0	1	0	2	1	0	0	1	0	1	0	1	0	0	0	0	0	0	1
16 La CIENEGA BLVD. @ LENNOX BLVD	0	0	1	1	0	0	1	0	2	1	0	0	0	0	0	0	0	0	1	1	0	0	1	0
17 La CIENEGA BLVD. @ 111TH STREET	1	0	2	0	0	0	0	0	2	1	0	0	2	0	0	0	1	0	0	0	0	0	0	0
18 La CIENEGA BLVD. @ 405 S/B RAMP	1	0	2	0	1	0	1	0	2	1	0	0	0	0	0	0	0	0	2	0	0	0	1	0
19 CENTURY BLVD. @ 405 N/B RAMP	2	0	0	0	1	0	0	0	0	0	1	0	1	0	3	0	2	0	0	0	2	1	0	0

Appendix H Intersection Volumes

Appendix H includes the intersection volumes used in the traffic analysis both in summary tables and as provided in the TRAFFIX software output.

- **Table H-1**: Existing (2004) Volumes
- **Table H-2**: Baseline (2003) Volumes
- **Table H-3**: Adjusted Baseline (2005) Volumes
- **Table H-4**: Project (2005) Volumes

Table H-1
LAX South Airfield EIR -- Existing (2004) Intersection Volumes

	Intersection	Peak Hour [1/]	North Approach				East Approach				South Approach				West Approach				Intersection
			Right	Thru	Left	Total	Right	Thru	Left	Total	Right	Thru	Left	Total	Right	Thru	Left	Total	Total
	Imperial Hwy.	Employee AM	50	4	333	387	751	326	14	1,091	0	0	0	0	0	258	60	318	1,796
1.	&	Delivery	120	0	619	739	578	353	1	932	8	3	0	11	1	443	113	557	2,239
	Pershing Dr.	Employee PM	134	1	662	797	594	376	1	971	9	3	2	14	1	464	112	577	2,359
	Imperial Hwy.	Employee AM	2	1	0	3	5	929	285	1,219	382	1	168	551	38	553	0	591	2,364
2.	&	Delivery	3	0	1	4	1	785	388	1,174	350	1	153	504	177	885	0	1,062	2,744
	Main St.	Employee PM	1	0	0	1	0	845	423	1,268	350	1	158	509	214	902	0	1,116	2,894
3.	Imperial Hwy. &	Employee AM	18	1,093	194	1,305	313	171	111	595	544	1,112	59	1,715	76	176	138	390	4,005
	Sepulveda Blvd.	Employee PM	33	1,861	292	2,186	358	303	163	824	930	1,587	163	2,680	146	310	164	620	6,310
4.	Imperial Hwy. &	Employee AM	725	921	236	1,882	0	368	97	465	0	0	0	0	147	236	0	383	2,730
	Nash St.	Employee PM	279	151	79	509	0	782	85	867	0	0	0	0	90	771	0	861	2,237
5.	Imperial Hwy. &	Employee AM	11	0	31	42	65	480	0	545	59	5	26	90	0	266	24	290	967
	Douglas St.	Employee PM	42	0	91	133	80	641	0	721	333	23	118	474	0	748	51	799	2,127
6.	Imperial Hwy. &	Employee AM	76	178	210	464	555	399	238	1,192	105	302	107	514	75	163	63	301	2,471
	Aviation Blvd.	Employee PM	136	468	412	1,016	408	440	171	1,019	383	442	161	986	238	835	186	1,259	4,280
7.	Imperial Hwy. &	Employee AM	0	0	0	0	2	470	62	534	298	0	778	1,076	270	189	0	459	2,069
	I-105 Ramps East of Aviation Blvd.	Employee PM	0	0	0	0	12	553	270	835	218	0	388	606	681	987	0	1,668	3,109
8.	Imperial Hwy. &	Employee AM	162	70	38	270	270	415	34	719	97	97	23	217	75	154	134	363	1,569
	La Cienega Blvd.	Employee PM	291	329	266	886	250	409	34	693	339	208	103	650	179	712	206	1,097	3,326
9.	Imperial Hwy. &	Employee AM	0	0	0	0	354	494	0	848	39	0	209	248	91	199	0	290	1,386
	I-405 NB Ramps	Employee PM	0	0	0	0	162	457	0	619	191	0	201	392	184	1,143	0	1,327	2,338
10.	Century Blvd. &	Employee AM	135	183	32	350	130	1,615	76	1,821	45	335	472	852	217	1,006	78	1,301	4,324
	Aviation Blvd.	Employee PM	175	458	100	733	136	1,462	89	1,687	91	660	534	1,285	338	2,087	149	2,574	6,279
11.	Aviation Blvd. &	Employee AM	26	418	61	505	87	28	29	144	74	828	19	921	14	24	21	59	1,629
	111th St.	Employee PM	69	937	127	1,133	47	47	75	169	92	911	17	1,020	22	73	92	187	2,509
12.	La Cienega Blvd. &	Employee AM	0	182	111	293	20	0	692	712	75	388	0	463	0	0	0	0	1,468
	I-405 SB Ramps	Employee PM	0	625	201	826	116	0	632	748	108	653	0	761	0	0	0	0	2,335
13.	La Cienega Blvd. &	Employee AM	613	193	79	885	263	1,187	193	1,643	164	168	87	419	334	568	76	978	3,925
	Century Blvd.	Employee PM	551	483	262	1,296	186	962	136	1,284	510	365	125	1,000	763	1,294	156	2,213	5,793
14.	La Cienega Blvd. &	Employee AM	0	275	333	608	75	0	0	75	21	298	0	319	0	0	0	0	1,002
	I-405 SB Ramps	Employee PM	0	725	619	1,344	296	0	0	296	47	691	0	738	0	0	0	0	2,378
15.	La Cienega Blvd. &	Employee AM	64	203	9	276	3	4	3	10	7	286	156	449	44	4	15	63	798
	104th St.	Employee PM	56	636	22	714	12	7	10	29	18	560	141	719	179	6	88	273	1,735
16.	La Cienega Blvd. &	Employee AM	1	187	24	212	108	0	110	218	38	357	0	395	0	0	0	0	825
	Lennox Blvd.	Employee PM	0	680	130	810	66	0	73	139	158	613	0	771	0	0	0	0	1,720
17.	La Cienega Blvd. &	Employee AM	86	186	0	272	0	0	0	0	0	325	158	483	42	0	67	109	864
	111th St.	Employee PM	127	712	0	839	0	0	0	0	0	519	137	656	183	0	208	391	1,886
18.	La Cienega Blvd. &	Employee AM	2	186	55	243	55	1	72	128	75	475	6	556	5	0	0	5	932
	I-405 SB Ramps	Employee PM	1	776	114	891	52	0	76	128	69	626	2	697	8	1	0	9	1,725
19.	Century Blvd. &	Employee AM	0	0	0	0	0	1,474	0	1,474	80	0	793	873	376	425	11	812	3,159
	I-405 NB Ramps	Employee PM	0	0	0	0	0	1,035	0	1,035	328	0	526	854	710	1,333	23	2,066	3,955

1/ The hours of data collection included the Construction Employee a.m. peak (6:00 - 7:00 a.m.), the Construction Delivery peak (3:00 - 4:00 p.m.) and the Construction Employee p.m. peak (3:30 - 4:30 p.m.)

Source: Data collected by Wiltec on August 3 and 4, 2004.
Prepared by: Ricondo & Associates.

Table H-2

LAX South Airfield EIR -- Baseline (2003) Intersection Volumes

	Intersection	Peak Hour [1/]	North Approach				East Approach				South Approach				West Approach				Intersection Total
			Right	Thru	Left	Total	Right	Thru	Left	Total	Right	Thru	Left	Total	Right	Thru	Left	Total	
	Imperial Hwy.	Employee AM	50	0	330	380	740	320	10	1,070	0	0	0	0	0	250	60	310	1,760
1.	&	Delivery	120	0	610	730	570	350	0	920	10	0	0	10	0	430	110	540	2,200
	Pershing Dr.	Employee PM	131	0	650	781	580	370	0	950	10	0	0	10	0	450	110	560	2,301
	Imperial Hwy.	Employee AM	0	0	0	0	0	910	280	1,190	370	0	160	530	40	540	0	580	2,300
2.	&	Delivery	0	0	0	0	0	770	380	1,150	340	0	150	490	170	870	0	1,040	2,680
	Main St.	Employee PM	0	0	0	0	0	830	410	1,240	340	0	150	490	210	880	0	1,090	2,820
3.	Imperial Hwy. &	Employee AM	20	1,060	190	1,270	310	170	110	590	530	1,080	60	1,670	70	170	140	380	3,910
	Sepulveda Blvd.	Employee PM	30	1,810	280	2,120	350	300	160	810	910	1,550	160	2,620	140	300	160	600	6,150
4.	Imperial Hwy. &	Employee AM	710	900	230	1,840	0	360	100	460	0	0	0	0	140	230	0	370	2,670
	Nash St.	Employee PM	270	150	80	500	0	770	80	850	0	0	0	0	90	750	0	840	2,190
5.	Imperial Hwy. &	Employee AM	10	0	30	40	60	470	0	530	60	0	30	90	0	260	20	280	940
	Douglas St.	Employee PM	40	0	90	130	80	630	0	710	330	20	120	470	0	730	50	780	2,090
6.	Imperial Hwy. &	Employee AM	70	170	200	440	540	390	230	1,160	100	290	100	490	70	160	60	290	2,380
	Aviation Blvd.	Employee PM	130	450	400	980	400	430	170	1,000	370	430	160	960	230	810	180	1,220	4,160
7.	Imperial Hwy. &	Employee AM	0	0	0	0	0	460	60	520	290	0	760	1,050	260	180	0	440	2,010
	I-105 Ramps East of Aviation Blvd.	Employee PM	0	0	0	0	10	540	260	810	210	0	380	590	660	960	0	1,620	3,020
8.	Imperial Hwy. &	Employee AM	160	70	40	270	260	410	30	700	90	90	20	200	70	150	130	350	1,520
	La Cienega Blvd.	Employee PM	280	320	260	860	240	400	30	670	330	200	100	630	170	700	200	1,070	3,230
9.	Imperial Hwy. &	Employee AM	0	0	0	0	350	480	0	830	40	0	200	240	90	190	0	280	1,350
	I-405 NB Ramps	Employee PM	0	0	0	0	160	440	0	600	190	0	200	390	180	1,120	0	1,300	2,290
10.	Century Blvd. &	Employee AM	130	180	30	340	130	1,570	70	1,770	40	330	460	830	210	980	80	1,270	4,210
	Aviation Blvd.	Employee PM	170	440	100	710	130	1,420	90	1,640	90	640	520	1,250	330	2,030	150	2,510	6,110
11.	Aviation Blvd. &	Employee AM	30	410	60	500	80	30	30	140	70	810	20	900	10	20	20	50	1,590
	111th St.	Employee PM	70	910	120	1,100	50	50	70	170	90	890	20	1,000	20	70	90	180	2,450
12.	La Cienega Blvd. &	Employee AM	0	180	110	290	20	0	670	690	70	380	0	450	0	0	0	0	1,430
	I-405 SB Ramps	Employee PM	0	610	200	810	110	0	620	730	100	630	0	730	0	0	0	0	2,270
13.	La Cienega Blvd. &	Employee AM	600	190	80	870	260	1,160	190	1,610	160	160	80	400	330	560	70	960	3,840
	Century Blvd.	Employee PM	540	470	260	1,270	180	930	130	1,240	500	350	120	970	740	1,260	150	2,150	5,630
14.	La Cienega Blvd. &	Employee AM	0	270	320	590	70	0	0	70	20	290	0	310	0	0	0	0	970
	I-405 SB Ramps	Employee PM	0	700	600	1,300	290	0	0	290	50	670	0	720	0	0	0	0	2,310
15.	La Cienega Blvd. &	Employee AM	60	200	10	270	0	0	0	0	10	280	150	440	40	0	10	50	760
	104th St.	Employee PM	50	610	20	680	10	10	10	30	20	550	140	710	170	10	90	270	1,690
16.	La Cienega Blvd. &	Employee AM	0	180	20	200	110	0	110	220	40	350	0	390	0	0	0	0	810
	Lennox Blvd.	Employee PM	0	660	130	790	60	0	70	130	150	600	0	750	0	0	0	0	1,670
17.	La Cienega Blvd. &	Employee AM	80	180	0	260	0	0	0	0	0	320	150	470	40	0	70	110	840
	111th St.	Employee PM	120	690	0	810	0	0	0	0	0	500	130	630	180	0	200	380	1,820
18.	La Cienega Blvd. &	Employee AM	0	180	50	230	50	0	70	120	70	460	10	540	0	0	0	0	890
	I-405 SB Ramps	Employee PM	0	760	110	870	50	0	70	120	70	610	0	680	10	0	0	10	1,680
19.	Century Blvd. &	Employee AM	0	0	0	0	0	1,440	0	1,440	80	0	770	850	370	420	10	800	3,090
	I-405 NB Ramps	Employee PM	0	0	0	0	0	1,000	0	1,000	320	0	510	830	690	1,300	20	2,010	3,840

1/ The hours of data collection included the Construction Employee a.m. peak (6:00 - 7:00 a.m.), the Construction Delivery peak (3:00 - 4:00 p.m.) and the Construction Employee p.m. peak (3:30 - 4:30 p.m.)

Source: Data collected by Wiltec on August 3 and 4, 2004.
Prepared by: Ricondo & Associates.

Table H-3
LAX South Airfield EIR -- Adjusted Baseline (2005) Intersection Volumes

	Intersection	Peak Hour [1/]	North Approach Right	North Approach Thru	North Approach Left	North Approach Total	East Approach Right	East Approach Thru	East Approach Left	East Approach Total	South Approach Right	South Approach Thru	South Approach Left	South Approach Total	West Approach Right	West Approach Thru	West Approach Left	West Approach Total	Intersection Total
	Imperial Hwy.	Employee AM	50	0	360	410	810	340	10	1,160	0	0	0	0	0	270	60	330	1,900
1.	&	Delivery	130	0	670	800	620	370	0	990	10	0	0	10	0	470	120	590	2,390
	Pershing Dr.	Employee PM	140	0	730	870	650	390	0	1,040	10	0	0	10	0	490	120	610	2,530
	Imperial Hwy.	Employee AM	0	0	0	0	10	990	300	1,300	400	0	180	580	40	590	0	630	2,510
2.	&	Delivery	0	0	0	0	0	840	400	1,240	370	0	160	530	190	950	0	1,140	2,910
	Main St.	Employee PM	0	0	0	0	0	910	440	1,350	370	0	170	540	230	980	0	1,210	3,100
3.	Imperial Hwy. &	Employee AM	20	1,180	210	1,410	330	190	120	640	600	1,190	60	1,850	80	200	150	430	4,330
	Sepulveda Blvd.	Employee PM	40	2,020	320	2,380	390	350	190	930	980	1,660	170	2,810	160	360	180	700	6,820
4.	Imperial Hwy. &	Employee AM	770	980	250	2,000	0	400	100	500	0	0	0	0	160	280	0	440	2,940
	Nash St.	Employee PM	300	160	90	550	0	890	90	980	0	0	0	0	100	910	0	1,010	2,540
5.	Imperial Hwy. &	Employee AM	10	0	30	40	70	520	0	590	60	10	30	100	0	310	30	340	1,070
	Douglas St.	Employee PM	50	0	100	150	90	720	0	810	360	20	130	510	0	880	60	940	2,410
6.	Imperial Hwy. &	Employee AM	90	210	250	550	740	450	260	1,450	120	340	120	580	90	190	110	390	2,970
	Aviation Blvd.	Employee PM	150	520	470	1,140	520	520	190	1,230	420	490	180	1,090	260	920	240	1,420	4,880
7.	Imperial Hwy. &	Employee AM	0	0	0	0	0	540	70	610	330	0	960	1,290	320	220	0	540	2,440
	I-105 Ramps East of Aviation Blvd.	Employee PM	0	0	0	0	10	660	410	1,080	240	0	480	720	760	1,080	0	1,840	3,640
8.	Imperial Hwy. &	Employee AM	190	80	40	310	290	460	40	790	110	110	30	250	80	170	140	390	1,740
	La Cienega Blvd.	Employee PM	480	360	380	1,220	280	470	40	790	380	230	110	720	190	770	230	1,190	3,920
9.	Imperial Hwy. &	Employee AM	0	0	0	0	370	540	0	910	40	0	220	260	100	220	0	320	1,490
	I-405 NB Ramps	Employee PM	0	0	0	0	180	520	0	700	220	0	230	450	270	1,240	0	1,510	2,660
10.	Century Blvd. &	Employee AM	150	200	40	390	140	1,750	80	1,970	50	350	550	950	240	1,090	80	1,410	4,720
	Aviation Blvd.	Employee PM	190	510	110	810	150	1,620	100	1,870	110	700	690	1,500	390	2,260	160	2,810	6,990
11.	Aviation Blvd. &	Employee AM	30	460	80	570	130	30	30	190	90	1,080	20	1,190	20	30	20	70	2,020
	111th St.	Employee PM	80	1,040	180	1,300	170	50	90	310	120	1,110	20	1,250	30	80	110	220	3,080
12.	La Cienega Blvd. &	Employee AM	0	200	110	310	20	0	830	850	80	420	0	500	0	0	0	0	1,660
	I-405 SB Ramps	Employee PM	0	660	200	860	120	0	700	820	120	710	0	830	0	0	0	0	2,510
13.	La Cienega Blvd. &	Employee AM	670	290	90	1,050	280	1,290	300	1,870	180	180	90	450	390	590	80	1,060	4,430
	Century Blvd.	Employee PM	580	550	280	1,410	210	1,070	200	1,480	560	400	140	1,100	860	1,380	170	2,410	6,400
14.	La Cienega Blvd. &	Employee AM	0	510	370	880	80	0	0	80	20	330	0	350	0	0	0	0	1,310
	I-405 SB Ramps	Employee PM	0	970	680	1,650	340	0	0	340	50	760	0	810	0	0	0	0	2,800
15.	La Cienega Blvd. &	Employee AM	70	440	10	520	0	0	0	0	10	320	170	500	200	0	20	220	1,240
	104th St.	Employee PM	60	870	30	960	10	10	10	30	20	620	150	790	280	10	100	390	2,170
16.	La Cienega Blvd. &	Employee AM	0	240	30	270	120	0	120	240	40	400	0	440	0	0	0	0	950
	Lennox Blvd.	Employee PM	0	1,190	150	1,340	80	0	80	160	170	680	0	850	0	0	0	0	2,350
17.	La Cienega Blvd. &	Employee AM	120	210	0	330	0	0	0	0	0	350	170	520	50	0	80	130	980
	111th St.	Employee PM	230	1,140	0	1,370	0	0	0	0	0	580	150	730	220	0	240	460	2,560
18.	La Cienega Blvd. &	Employee AM	0	210	60	270	60	0	80	140	80	520	10	610	10	0	0	10	1,030
	I-405 SB Ramps	Employee PM	0	1,100	210	1,310	60	0	80	140	80	700	0	780	10	0	0	10	2,240
19.	Century Blvd. &	Employee AM	0	0	0	0	0	1,610	0	1,610	90	0	940	1,030	390	440	10	840	3,480
	I-405 NB Ramps	Employee PM	0	0	0	0	0	1,150	0	1,150	360	0	620	980	750	1,420	20	2,190	4,320

1/ The hours of data collection included the Construction Employee a.m. peak (6:00 - 7:00 a.m.), the Construction Delivery peak (3:00 - 4:00 p.m.) and the Construction Employee p.m. peak (3:30 - 4:30 p.m.)

Source: Data collected by Wiltec on August 3 and 4, 2004.
Prepared by: Ricondo & Associates.

Table H-4
LAX South Airfield EIR -- Intersection Volumes With Project (2005)

	Intersection	Peak Hour [1/]	North Approach Right	North Approach Thru	North Approach Left	North Approach Total	East Approach Right	East Approach Thru	East Approach Left	East Approach Total	South Approach Right	South Approach Thru	South Approach Left	South Approach Total	West Approach Right	West Approach Thru	West Approach Left	West Approach Total	Intersection Total
1.	Imperial Hwy.	Employee AM	50	0	430	480	880	340	10	1,230	0	0	0	0	0	270	60	330	2,040
	&	Delivery	130	0	900	1,030	850	370	0	1,220	10	0	0	10	0	470	120	590	2,850
	Pershing Dr.	Employee PM	140	0	860	1,000	780	390	0	1,170	10	0	0	10	0	490	120	610	2,790
2.	Imperial Hwy.	Employee AM	0	0	0	0	10	1,060	300	1,370	400	0	180	580	40	660	0	700	2,650
	&	Delivery	0	0	0	0	0	1,070	400	1,470	370	0	160	530	190	1,180	0	1,370	3,370
	Main St.	Employee PM	0	0	0	0	0	1,040	440	1,480	370	0	170	540	230	1,110	0	1,340	3,360
3.	Imperial Hwy. &	Employee AM	20	1,180	210	1,410	330	200	120	650	610	1,190	60	1,860	80	210	150	440	4,360
	Sepulveda Blvd.	Employee PM	40	2,020	320	2,380	390	370	200	960	980	1,660	170	2,810	160	380	180	720	6,870
4.	Imperial Hwy. &	Employee AM	770	980	250	2,000	0	410	100	510	0	0	0	0	160	300	0	460	2,970
	Nash St.	Employee PM	300	160	90	550	0	920	90	1,010	0	0	0	0	100	940	0	1,040	2,600
5.	Imperial Hwy. &	Employee AM	10	0	30	40	70	530	0	600	60	10	30	100	0	330	30	360	1,100
	Douglas St.	Employee PM	50	0	100	150	90	740	0	830	360	20	130	510	0	900	60	960	2,450
6.	Imperial Hwy. &	Employee AM	90	210	250	550	790	460	260	1,510	120	340	120	580	90	190	130	410	3,050
	Aviation Blvd.	Employee PM	150	520	470	1,140	550	550	190	1,290	420	490	180	1,090	260	920	270	1,450	4,970
7.	Imperial Hwy. &	Employee AM	0	0	0	0	0	560	70	630	330	0	1,010	1,340	320	220	0	540	2,510
	I-105 Ramps East of Aviation Blvd.	Employee PM	0	0	0	0	10	700	460	1,170	240	0	500	740	760	1,080	0	1,840	3,750
8.	Imperial Hwy. &	Employee AM	200	80	40	320	290	470	40	800	110	110	30	250	80	170	140	390	1,760
	La Cienega Blvd.	Employee PM	560	360	420	1,340	280	470	40	790	380	230	110	720	190	770	230	1,190	4,040
9.	Imperial Hwy. &	Employee AM	0	0	0	0	370	550	0	920	40	0	220	260	100	220	0	320	1,500
	I-405 NB Ramps	Employee PM	0	0	0	0	180	520	0	700	220	0	230	450	300	1,250	0	1,550	2,700
10.	Century Blvd. &	Employee AM	150	200	40	390	140	1,750	80	1,970	50	350	550	950	240	1,100	80	1,420	4,730
	Aviation Blvd.	Employee PM	190	510	110	810	150	1,620	100	1,870	120	700	700	1,520	390	2,260	160	2,810	7,010
11.	Aviation Blvd. &	Employee AM	30	460	80	570	130	30	30	190	90	1,160	20	1,270	20	30	20	70	2,100
	111th St.	Employee PM	80	1,040	180	1,300	180	50	90	320	120	1,160	20	1,300	30	80	110	220	3,140
12.	La Cienega Blvd. &	Employee AM	0	200	110	310	20	0	860	880	80	420	0	500	0	0	0	0	1,690
	I-405 SB Ramps	Employee PM	0	660	200	860	120	0	710	830	120	710	0	830	0	0	0	0	2,520
13.	La Cienega Blvd. &	Employee AM	670	320	90	1,080	280	1,290	340	1,910	180	180	90	450	400	590	80	1,070	4,510
	Century Blvd.	Employee PM	580	570	280	1,430	210	1,070	220	1,500	560	400	140	1,100	860	1,380	170	2,410	6,440
14.	La Cienega Blvd. &	Employee AM	0	590	370	960	80	0	0	80	20	330	0	350	0	0	0	0	1,390
	I-405 SB Ramps	Employee PM	0	1,010	680	1,690	340	0	0	340	50	760	0	810	0	0	0	0	2,840
15.	La Cienega Blvd. &	Employee AM	70	520	10	600	0	0	0	0	10	320	170	500	280	0	20	300	1,400
	104th St.	Employee PM	60	910	30	1,000	10	10	10	30	20	620	150	790	340	10	100	450	2,270
16.	La Cienega Blvd. &	Employee AM	0	250	30	280	120	0	120	240	40	400	0	440	0	0	0	0	960
	Lennox Blvd.	Employee PM	0	1,360	150	1,510	80	0	80	160	170	680	0	850	0	0	0	0	2,520
17.	La Cienega Blvd. &	Employee AM	120	220	0	340	0	0	0	0	0	350	170	520	50	0	80	130	990
	111th St.	Employee PM	250	1,300	0	1,550	0	0	0	0	0	580	150	730	220	0	240	460	2,740
18.	La Cienega Blvd. &	Employee AM	0	220	60	280	60	0	80	140	80	520	10	610	10	0	0	10	1,040
	I-405 SB Ramps	Employee PM	0	1,220	240	1,460	60	0	80	140	80	700	0	780	10	0	0	10	2,390
19.	Century Blvd. &	Employee AM	0	0	0	0	0	1,610	0	1,610	90	0	970	1,060	390	440	10	840	3,510
	I-405 NB Ramps	Employee PM	0	0	0	0	0	1,150	0	1,150	360	0	640	1,000	750	1,420	20	2,190	4,340

1/ The hours of data collection included the Construction Employee a.m. peak (6:00 - 7:00 a.m.), the Construction Delivery peak (3:00 - 4:00 p.m.) and the Construction Employee p.m. peak (3:30 - 4:30 p.m.)

Source: Data collected by Wiltec on August 3 and 4, 2004.
Prepared by: Ricondo & Associates.

Appendix I Capacity Analysis Results

Appendix I provides the capacity analysis results for each condition and scenario evaluated in the Traffic Study. A table is included summarizing the V/C ratios and level of service results for the three analysis hours, Employee a.m. peak hour, Delivery peak hour and Employee p.m. peak hour, for the Baseline (2003), Adjusted Baseline (2005) and With Project (2005) conditions. In addition, the TRAFFIX analysis report output and individual intersection summary reports are included for each analysis condition and evaluation hour scenario.

- **Table I-1**: Analysis Results

  TRAFFIX Baseline (2003) Analysis Results Report—Employee AM Peak Hour

  TRAFFIX Baseline (2003) Employee AM Peak Hour Intersection Summary Reports

  TRAFFIX Baseline (2003) Analysis Results Report—Delivery Peak Hour

  TRAFFIX Baseline (2003) Delivery Peak Hour Intersection Summary Reports

  TRAFFIX Baseline (2003) Analysis Results Report—Employee PM Peak Hour

  TRAFFIX Baseline (2003) Employee PM Peak Hour Intersection Summary Reports

  TRAFFIX Adjusted Baseline (2005) Analysis Results Report—Employee AM Peak Hour

  TRAFFIX Adjusted Baseline (2005) Employee AM Peak Hour Intersection Summary Reports

  TRAFFIX Adjusted Baseline (2005) Analysis Results Report—Delivery Peak Hour

  TRAFFIX Adjusted Baseline (2005) Delivery Peak Hour Intersection Summary Reports

  TRAFFIX Adjusted Baseline (2005) Analysis Results Report—Employee PM Peak Hour

  TRAFFIX Adjusted Baseline (2005) Employee PM Peak Hour Intersection Summary Reports

  TRAFFIX Project (2005) Analysis Results Report—Employee AM Peak Hour

  TRAFFIX Project (2005) Employee AM Peak Hour Intersection Summary Reports

  TRAFFIX Project (2005) Analysis Results Report—Delivery Peak Hour

  TRAFFIX Project (2005) Delivery Peak Hour Intersection Summary Reports

  TRAFFIX Project (2005) Analysis Results Report—Employee PM Peak Hour

  TRAFFIX Project (2005) Employee PM Peak Hour Intersection Summary Reports

Table I-1
LAX South Airfield EIR -- Analysis Results

	Intersection	Peak Hour[1/]	Baseline (2003) V/C	Baseline (2003) ATSAC[2/]	Baseline (2003) Adjusted V/C	Baseline (2003) LOS[3/]	Adjusted Baseline (2005) V/C	Adjusted Baseline (2005) ATSAC[2/]	Adjusted Baseline (2005) Adjusted V/C	Adjusted Baseline (2005) LOS[3/]	With Project (2005) V/C[4/]	With Project (2005) ATSAC[2/]	With Project (2005) Adjusted V/C	With Project (2005) LOS[3/]	Change in V/C	Significant Impact?[5/]
1.	Imperial Highway	Employee A.M.	0.562	0.07	0.492	A	0.613	0.07	0.543	A	0.664	0.07	0.594	A	0.051	
	&	Delivery	0.466	0.07	0.396	A	0.506	0.07	0.436	A	0.673	0.07	0.603	B	0.167	
	Pershing Drive	Employee P.M.	0.473	0.07	0.403	A	0.528	0.07	0.458	A	0.623	0.07	0.553	A	0.095	
2.	Imperial Highway	Employee A.M.	0.394	0.07	0.324	A	0.427	0.07	0.357	A	0.444	0.07	0.374	A	0.017	
	&	Delivery	0.568	0.07	0.498	A	0.609	0.07	0.539	A	0.663	0.07	0.593	A	0.054	
	Main Street	Employee P.M.	0.601	0.07	0.531	A	0.657	0.07	0.587	A	0.688	0.07	0.618	B	0.031	
3.	Imperial Highway &	Employee A.M.	0.743	0.00	0.743	C	0.820	0.00	0.820	D	0.828	0.00	0.828	D	0.008	
	Sepulveda Boulevard	Employee P.M.	1.092	0.00	1.092	F	1.196	0.00	1.196	F	1.196	0.00	1.196	F	0.000	
4.	Imperial Highway &	Employee A.M.	0.591	0.07	0.521	A	0.645	0.07	0.575	A	0.645	0.07	0.575	A	0.000	
	Nash Street	Employee P.M.	0.333	0.07	0.263	A	0.387	0.07	0.317	A	0.394	0.07	0.324	A	0.007	
5.	Imperial Highway &	Employee A.M.	0.173	0.07	0.103	A	0.194	0.07	0.124	A	0.196	0.07	0.126	A	0.002	
	Douglas Street	Employee P.M.	0.363	0.07	0.293	A	0.409	0.07	0.339	A	0.414	0.07	0.344	A	0.005	
6.	Imperial Highway &	Employee A.M.	0.522	0.07	0.452	A	0.706	0.07	0.636	B	0.750	0.07	0.680	B	0.044	
	Aviation Boulevard	Employee P.M.	0.681	0.07	0.611	B	0.780	0.07	0.710	C	0.780	0.07	0.710	C	0.000	
7.	Imperial Highway &	Employee A.M.	0.293	0.07	0.223	A	0.515	0.07	0.445	A	0.540	0.07	0.470	A	0.025	
	I-105 Ramps East of Aviation Blvd.	Employee P.M.	0.648	0.07	0.578	A	0.839	0.07	0.769	C	0.883	0.07	0.813	D	0.044	Yes
8.	Imperial Highway &	Employee A.M.	0.213	0.07	0.143	A	0.256	0.07	0.186	A	0.262	0.07	0.192	A	0.006	
	La Cienega Boulevard	Employee P.M.	0.422	0.07	0.352	A	0.512	0.07	0.442	A	0.528	0.07	0.458	A	0.016	
9.	Imperial Highway &	Employee A.M.	0.204	0.00	0.204	A	0.225	0.00	0.225	A	0.228	0.00	0.228	A	0.003	
	I-405 Northbound Ramps	Employee P.M.	0.406	0.00	0.406	A	0.456	0.00	0.456	A	0.458	0.00	0.458	A	0.002	
10.	Century Boulevard &	Employee A.M.	0.646	0.07	0.576	A	0.731	0.07	0.661	B	0.731	0.07	0.661	B	0.000	
	Aviation Boulevard	Employee P.M.	0.863	0.07	0.793	C	1.016	0.07	0.946	E	1.020	0.07	0.950	E	0.004	
11.	Aviation Boulevard &	Employee A.M.	0.400	0.07	0.330	A	0.543	0.07	0.473	A	0.570	0.07	0.500	A	0.027	
	111th Street	Employee P.M.	0.513	0.07	0.443	A	0.717	0.07	0.647	B	0.740	0.07	0.670	B	0.023	
12.	La Cienega Boulevard &	Employee A.M.	0.476	0.07	0.406	A	0.552	0.07	0.482	A	0.564	0.07	0.494	A	0.012	
	I-405 Southbound Ramps	Employee P.M.	0.639	0.07	0.569	A	0.702	0.07	0.632	B	0.706	0.07	0.636	B	0.004	
13.	La Cienega Boulevard &	Employee A.M.	0.607	0.07	0.537	A	0.695	0.07	0.625	B	0.724	0.07	0.654	B	0.029	
	Century Boulevard	Employee P.M.	0.789	0.07	0.719	C	0.908	0.07	0.838	D	0.922	0.07	0.852	D	0.014	
14.	La Cienega Boulevard &	Employee A.M.	0.241	0.07	0.171	A	0.275	0.07	0.205	A	0.275	0.07	0.205	A	0.000	
	I-405 Southbound Ramps	Employee P.M.	0.502	0.07	0.432	A	0.567	0.07	0.497	A	0.567	0.07	0.497	A	0.000	
15.	La Cienega Boulevard &	Employee A.M.	0.194	0.07	0.124	A	0.379	0.07	0.309	A	0.454	0.07	0.384	A	0.075	
	104th Street	Employee P.M.	0.379	0.07	0.309	A	0.526	0.07	0.456	A	0.564	0.07	0.494	A	0.038	
16.	La Cienega Boulevard &	Employee A.M.	0.228	0.07	0.158	A	0.260	0.07	0.190	A	0.260	0.07	0.190	A	0.000	
	Lennox Boulevard	Employee P.M.	0.396	0.07	0.326	A	0.460	0.07	0.390	A	0.460	0.07	0.390	A	0.000	
17.	La Cienega Boulevard &	Employee A.M.	0.194	0.07	0.124	A	0.239	0.07	0.169	A	0.239	0.07	0.169	A	0.000	
	111th Street	Employee P.M.	0.407	0.07	0.337	A	0.580	0.07	0.510	A	0.622	0.07	0.552	A	0.042	
18.	La Cienega Boulevard &	Employee A.M.	0.232	0.07	0.162	A	0.267	0.07	0.197	A	0.267	0.07	0.197	A	0.000	
	I-405 Southbound Ramps	Employee P.M.	0.326	0.07	0.256	A	0.435	0.07	0.365	A	0.456	0.07	0.386	A	0.021	
19.	Century Boulevard &	Employee A.M.	0.641	0.00	0.641	B	0.746	0.00	0.746	C	0.758	0.00	0.758	C	0.012	
	I-405 Northbound Ramps	Employee P.M.	0.529	0.00	0.529	A	0.585	0.00	0.585	A	0.585	0.00	0.585	A	0.000	

1/ The hours of analysis include the Construction Employee a.m. peak (6:00 - 7:00 a.m.), the Construction Delivery peak (3:00 - 4:00 p.m.) and the Construction Employee p.m. peak (3:30 - 4:30 p.m.).
2/ An LADOT ATSAC benefit was applied at each intersection with the exception of intersections #3, #9, and #19, which are not a part of the LADOT system.
3/ The resulting LOS from the capacity analysis is calculated based on the following V/C ratios: LOS A (< 0.600), LOS B (0.601 - 0.700), LOS C (0.701 - 0.800), LOS D (0.801 - 0.900), LOS E (0.901 - 1.00), LOS F (> 1.000).
4/ Due to an error in the Traffix software, the V/C ratio for the employee a.m. peak hour at Intersections 4 and 17, and for the employee p.m. peak hour at intersection 19 were calculated by hand.
5/ Based on the LADOT policies, the intersection capactiy analysis is considered to have a significant impact if the change in the V/C ratio from the Adjusted Baseline to the With Project condition meets or exceeds the following rates: LOS C (0.04), LOS D (0.02), LOS E or F (0.01).

Source: Ricondo & Associates using Traffix, September 2004.
Prepared by: Ricondo & Associates.

TRAFFIX Baseline (2003) Analysis Results Report—Employee AM Peak Hour

Traffix 7.6.0115 (c) 2003 Dowling Assoc. Licensed to R & A, CHICAGO, IL
2003-AM Peak (6:00-7:00 AM) Sun Jan 17, 2005 15:38:04 Page 1-1

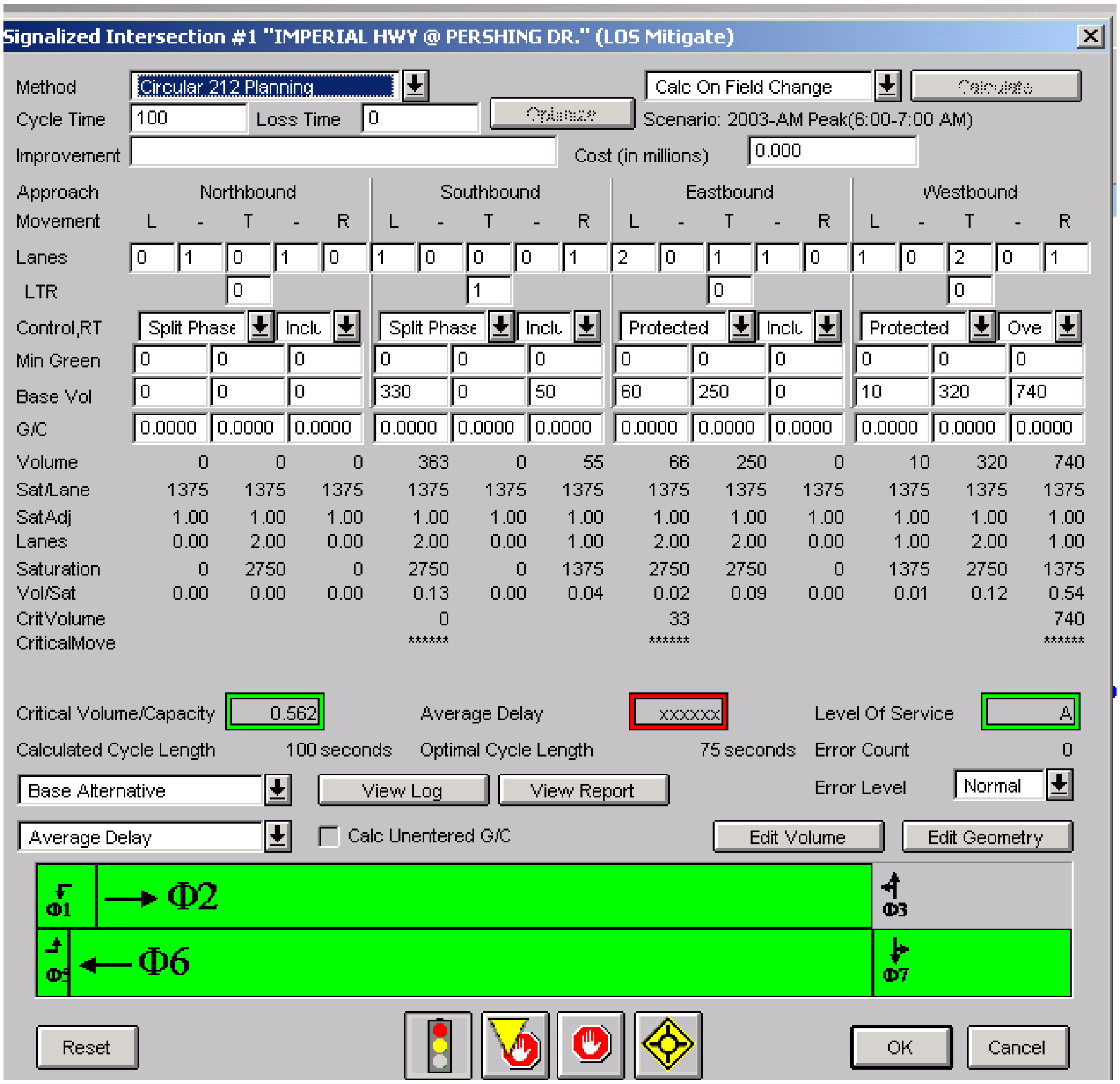
LAX SOUTH AIRFIELD EIR

Impact Analysis Report
Level Of Service

Intersection	LOS	V/C
# 1 IMPERIAL HWY @ PERSHING DR.	A	0.562
# 2 IMPERIAL HWY @MAIN STREET	A	0.394
# 3 IMPERIAL HWY @ SEPULVEDA BL.	C	0.743
# 4 IMPERIAL HWY @ NASH ST.	A	0.591
# 5 IMPERIAL HWY. @ DOUGLAS ST.	A	0.173
# 6 IMPERIAL HWY. @ AVIATION BL.	A	0.522
# 7 IMPERIAL HWY. @ 105 RAMP	A	0.293
# 8 IMPERIAL HWY. @ La CIENEGA BLV	A	0.213
# 9 IMPERIAL HWY. @ 405 NORTH RAMP	A	0.204
# 10 AVIATION BLVD. @ CENTURY BLVD.	B	0.646
# 11 AVIATION BLVD. @ 111TH	A	0.400
# 12 La CIENEGA BLVD. @ 405 S/B RAP	A	0.476
# 13 La CIENEGA BLVD. @ CENTURY BLV	B	0.607
# 14 La CIENEGA BLVD. @ 405 S/B RAM	A	0.241
# 15 La CIENEGA BLVD. @ 104 TH STRE	A	0.194
# 16 La CIENEGA BLVD. @ LENNOX BLVD	A	0.228
# 17 La CIENEGA BLVD. @ 111TH STREE	A	0.194
# 18 La CIENEGA BLVD. @ 405 S/B RAM	A	0.232
# 19 CENTURY BLVD. @ 405 N/B RAMP	B	0.641

Traffix 7.6.0115 (c) 2003 Dowling Assoc. Licensed to R & A, CHICAGO, IL

TRAFFIX Baseline (2003) Employee AM Peak Hour Intersection Summary Reports



Signalized Intersection #1 "IMPERIAL HWY @ PERSHING DR." (LOS Mitigate)

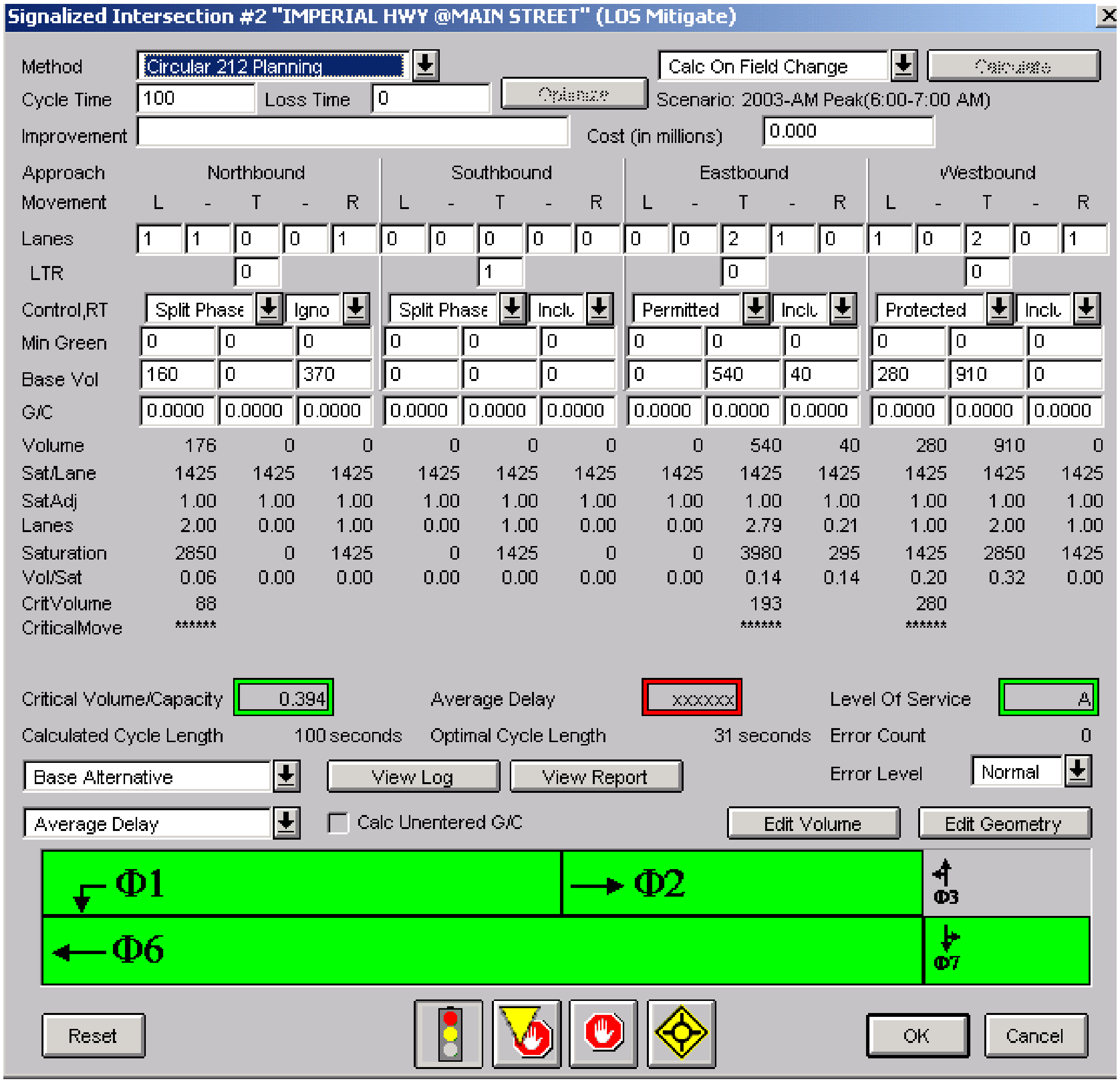
Method: Circular 212 Planning | Calc On Field Change | Calculate
Cycle Time: 100 | Loss Time: 0 | Optimize | Scenario: 2003-AM Peak(6:00-7:00 AM)
Improvement: | Cost (in millions): 0.000

Approach	Northbound			Southbound			Eastbound			Westbound		
Movement	L	T	R	L	T	R	L	T	R	L	T	R
Lanes	0 1	0 1	0	1 0	0 0	1	2 0	1 1	0	1 0	2 0	1
LTR		0			1			0			0	
Control,RT	Split Phase		Inclu	Split Phase		Inclu	Protected		Inclu	Protected		Ove
Min Green	0	0	0	0	0	0	0	0	0	0	0	0
Base Vol	0	0	0	330	0	50	60	250	0	10	320	740
G/C	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Volume	0	0	0	363	0	55	66	250	0	10	320	740
Sat/Lane	1375	1375	1375	1375	1375	1375	1375	1375	1375	1375	1375	1375
SatAdj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes	0.00	2.00	0.00	2.00	0.00	1.00	2.00	2.00	0.00	1.00	2.00	1.00
Saturation	0	2750	0	2750	0	1375	2750	2750	0	1375	2750	1375
Vol/Sat	0.00	0.00	0.00	0.13	0.00	0.04	0.02	0.09	0.00	0.01	0.12	0.54
CritVolume				0			33					740
CriticalMove				******			******					******

Critical Volume/Capacity: 0.562 | Average Delay: xxxxxx | Level Of Service: A
Calculated Cycle Length: 100 seconds | Optimal Cycle Length: 75 seconds | Error Count: 0
Base Alternative | View Log | View Report | Error Level: Normal
Average Delay | Calc Unentered G/C | Edit Volume | Edit Geometry

Φ1 Φ2 Φ3
Φ5 Φ6 Φ7

Reset | OK | Cancel



Signalized Intersection #2 "IMPERIAL HWY @MAIN STREET" (LOS Mitigate)

Method: Circular 212 Planning | Calc On Field Change | Calculate

Cycle Time: 100 | Loss Time: 0 | Optimize | Scenario: 2003-AM Peak(6:00-7:00 AM)

Improvement: | Cost (in millions): 0.000

Approach	Northbound			Southbound			Eastbound			Westbound		
Movement	L	T	R	L	T	R	L	T	R	L	T	R
Lanes	1 1	0 0	1	0 0	0	0 0	0 0	2 1	0	1 0	2 0	1
LTR		0			1			0			0	
Control,RT	Split Phase		Igno	Split Phase		Inclu	Permitted		Inclu	Protected		Inclu
Min Green	0	0	0	0	0	0	0	0	0	0	0	0
Base Vol	160	0	370	0	0	0	0	540	40	280	910	0
G/C	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Volume	176	0	0	0	0	0	0	540	40	280	910	0
Sat/Lane	1425	1425	1425	1425	1425	1425	1425	1425	1425	1425	1425	1425
SatAdj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes	2.00	0.00	1.00	0.00	1.00	0.00	0.00	2.79	0.21	1.00	2.00	1.00
Saturation	2850	0	1425	0	1425	0	0	3980	295	1425	2850	1425
Vol/Sat	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.14	0.14	0.20	0.32	0.00
CritVolume	88							193		280		
CriticalMove	******							******		******		

Critical Volume/Capacity: 0.394 | Average Delay: xxxxxx | Level Of Service: A

Calculated Cycle Length: 100 seconds | Optimal Cycle Length: 31 seconds | Error Count: 0

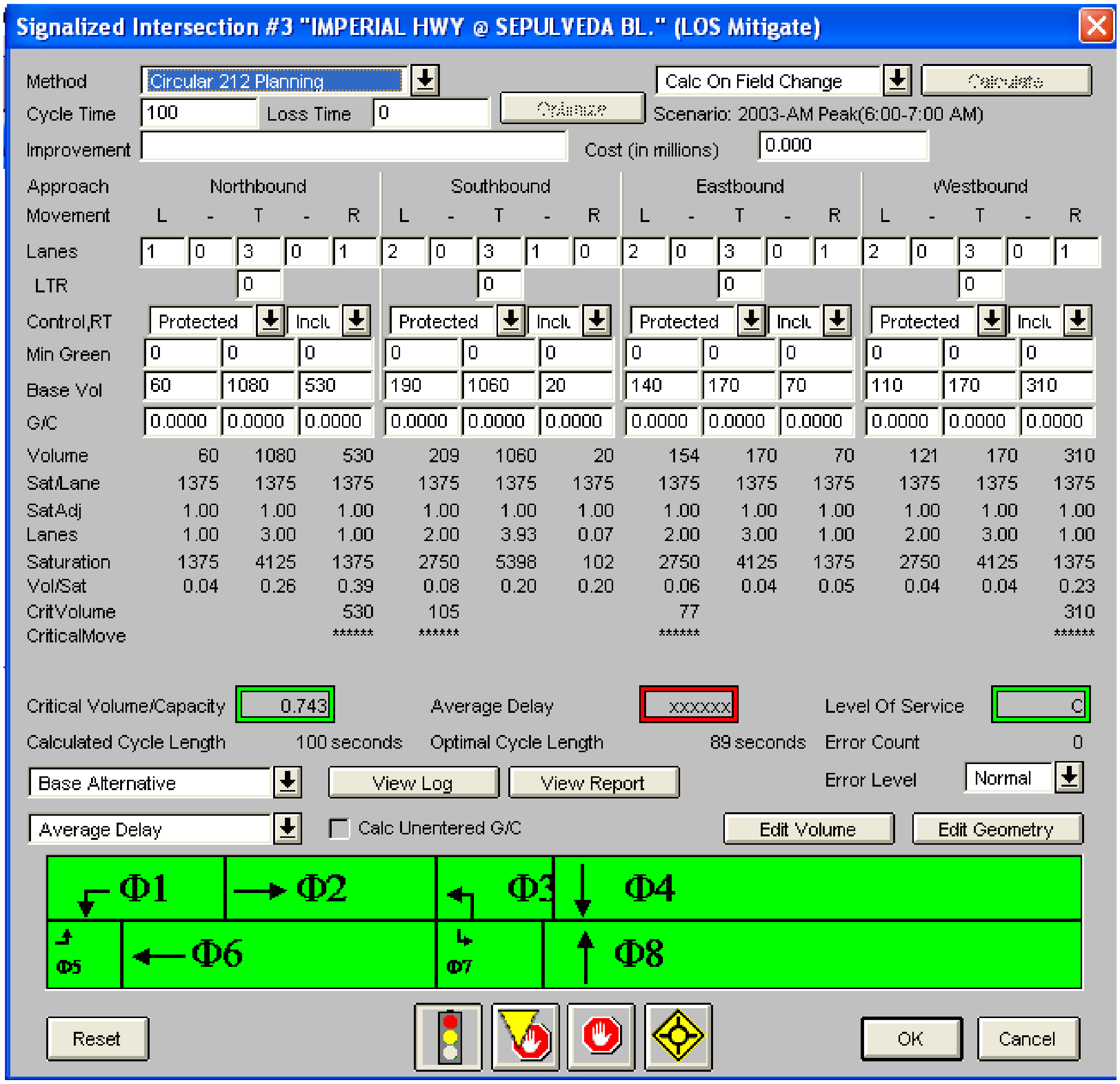
Base Alternative | View Log | View Report | Error Level: Normal

Average Delay | Calc Unentered G/C | Edit Volume | Edit Geometry

Φ1 | Φ2 | Φ3

Φ6 | Φ7

Reset | OK | Cancel



Signalized Intersection #3 "IMPERIAL HWY @ SEPULVEDA BL." (LOS Mitigate)

Method: Circular 212 Planning — Calc On Field Change — Calculate
Cycle Time: 100 — Loss Time: 0 — Optimize — Scenario: 2003-AM Peak(6:00-7:00 AM)
Improvement: — Cost (in millions): 0.000

Approach	Northbound			Southbound			Eastbound			Westbound		
Movement	L	T	R	L	T	R	L	T	R	L	T	R
Lanes	1 0	3 0	1	2 0	3 1	0	2 0	3 0	1	2 0	3 0	1
LTR		0			0			0			0	
Control,RT	Protected		Inclu	Protected		Inclu	Protected		Inclu	Protected		Inclu
Min Green	0	0	0	0	0	0	0	0	0	0	0	0
Base Vol	60	1080	530	190	1060	20	140	170	70	110	170	310
G/C	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Volume	60	1080	530	209	1060	20	154	170	70	121	170	310
Sat/Lane	1375	1375	1375	1375	1375	1375	1375	1375	1375	1375	1375	1375
SatAdj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes	1.00	3.00	1.00	2.00	3.93	0.07	2.00	3.00	1.00	2.00	3.00	1.00
Saturation	1375	4125	1375	2750	5398	102	2750	4125	1375	2750	4125	1375
Vol/Sat	0.04	0.26	0.39	0.08	0.20	0.20	0.06	0.04	0.05	0.04	0.04	0.23
CritVolume			530	105			77					310
CriticalMove			******	******			******					******

Critical Volume/Capacity: 0.743 — Average Delay: xxxxxx — Level Of Service: C
Calculated Cycle Length: 100 seconds — Optimal Cycle Length: 89 seconds — Error Count: 0
Base Alternative — View Log — View Report — Error Level: Normal
Average Delay — Calc Unentered G/C — Edit Volume — Edit Geometry

Signalized Intersection #4 "IMPERIAL HWY @ NASH ST." (LOS Mitigate)

Method: Circular 212 Planning | Calc On Field Change | Calculate

Cycle Time: 100 | Loss Time: 0 | Optimize | Scenario: 2003-AM Peak(6:00-7:00 AM)

Improvement: | Cost (in millions): 0.000

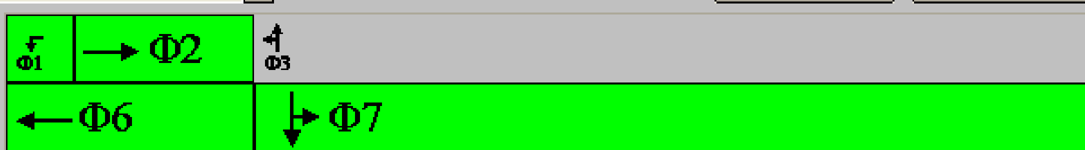
Approach	Northbound					Southbound					Eastbound					Westbound				
Movement	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Lanes	0	0	0	0	0	1	1	0	1	1	0	0	2	1	0	2	0	3	0	0
LTR			0					0					0					0		
Control,RT	Split Phase			Incl		Split Phase			Incl		Permitted			Incl		Protected			Incl	
Min Green	0		0		0	0		0		0	0		0		0	0		0		0
Base Vol	0		0		0	230		900		710	0		230		140	100		360		0
G/C	0.0000		0.0000		0.0000	0.0000		0.0000		0.0000	0.0000		0.0000		0.0000	0.0000		0.0000		0.0000
Volume	0		0		0	253		900		781	0		230		140	110		360		0
Sat/Lane	1425		1425		1425	1425		1425		1425	1425		1425		1425	1425		1425		1425
SatAdj	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00
Lanes	0.00		0.00		0.00	1.00		1.39		1.61	0.00		2.00		1.00	2.00		3.00		0.00
Saturation	0		0		0	1425		1980		2295	0		2850		1425	2850		4275		0
Vol/Sat	0.00		0.00		0.00	0.18		0.45		0.34	0.00		0.08		0.10	0.04		0.08		0.00
CritVolume								648							140	55				
CriticalMove								******							******	******				

Critical Volume/Capacity: 0.591 | Average Delay: xxxxxx | Level Of Service: A

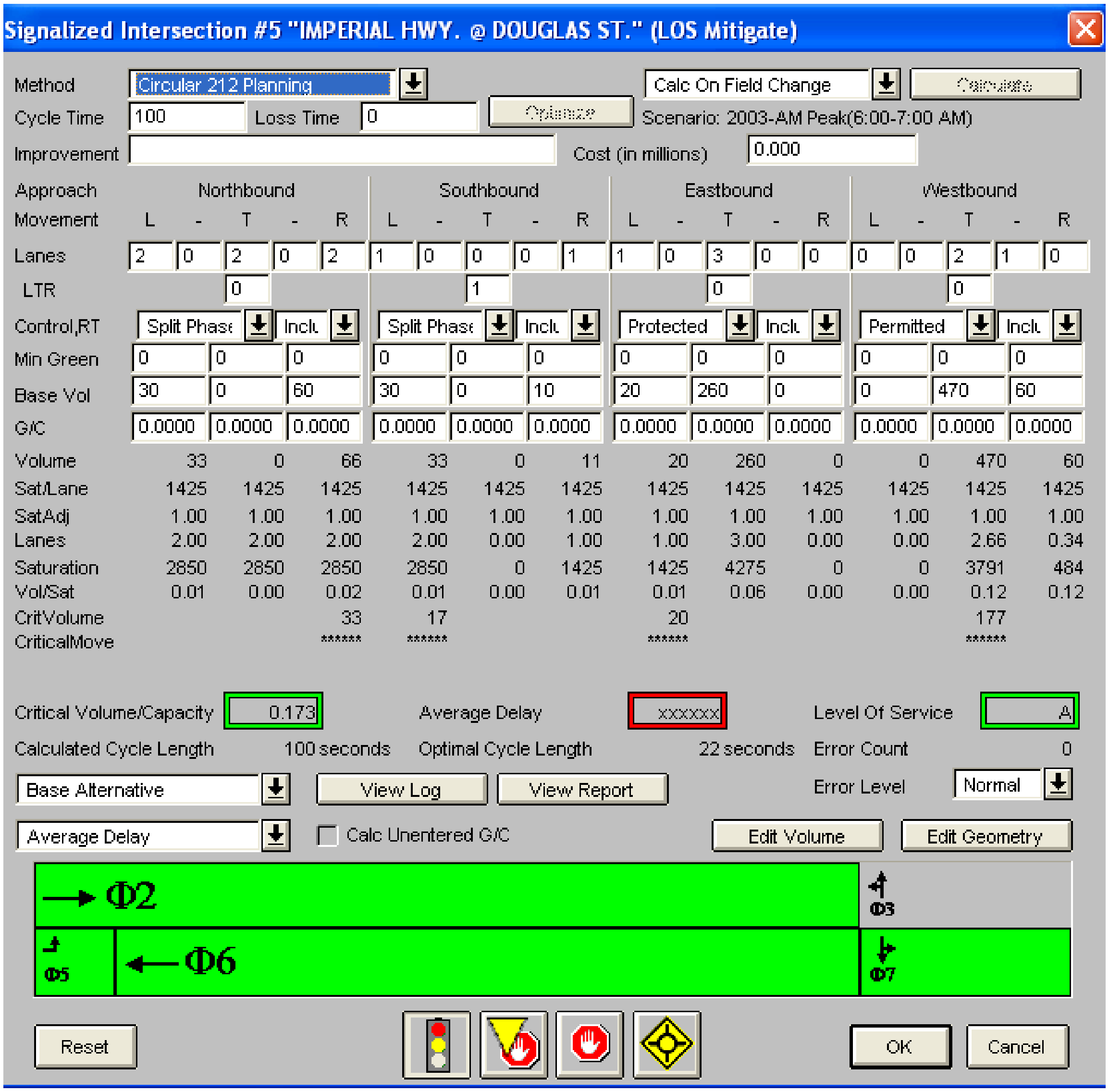
Calculated Cycle Length: 100 seconds | Optimal Cycle Length: 46 seconds | Error Count: 0

Base Alternative | View Log | View Report | Error Level: Normal

Average Delay | Calc Unentered G/C | Edit Volume | Edit Geometry



Reset | OK | Cancel



Signalized Intersection #5 "IMPERIAL HWY. @ DOUGLAS ST." (LOS Mitigate)

Method: Circular 212 Planning | Calc On Field Change | Calculate

Cycle Time: 100 | Loss Time: 0 | Optimize | Scenario: 2003-AM Peak(6:00-7:00 AM)

Improvement: | Cost (in millions): 0.000

Approach	Northbound			Southbound			Eastbound			Westbound		
Movement	L	T	R	L	T	R	L	T	R	L	T	R
Lanes	2 0	2 0	2	1 0	0 0	1	1 0	3 0	0	0 0	2 1	0
LTR		0			1			0			0	
Control,RT	Split Phase		Inclu	Split Phase		Inclu	Protected		Inclu	Permitted		Inclu
Min Green	0	0	0	0	0	0	0	0	0	0	0	0
Base Vol	30	0	60	30	0	10	20	260	0	0	470	60
G/C	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Volume	33	0	66	33	0	11	20	260	0	0	470	60
Sat/Lane	1425	1425	1425	1425	1425	1425	1425	1425	1425	1425	1425	1425
SatAdj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes	2.00	2.00	2.00	2.00	0.00	1.00	1.00	3.00	0.00	0.00	2.66	0.34
Saturation	2850	2850	2850	2850	0	1425	1425	4275	0	0	3791	484
Vol/Sat	0.01	0.00	0.02	0.01	0.00	0.01	0.01	0.06	0.00	0.00	0.12	0.12
CritVolume			33	17			20				177	
CriticalMove			******	******			******				******	

Critical Volume/Capacity: 0.173 | Average Delay: xxxxxx | Level Of Service: A

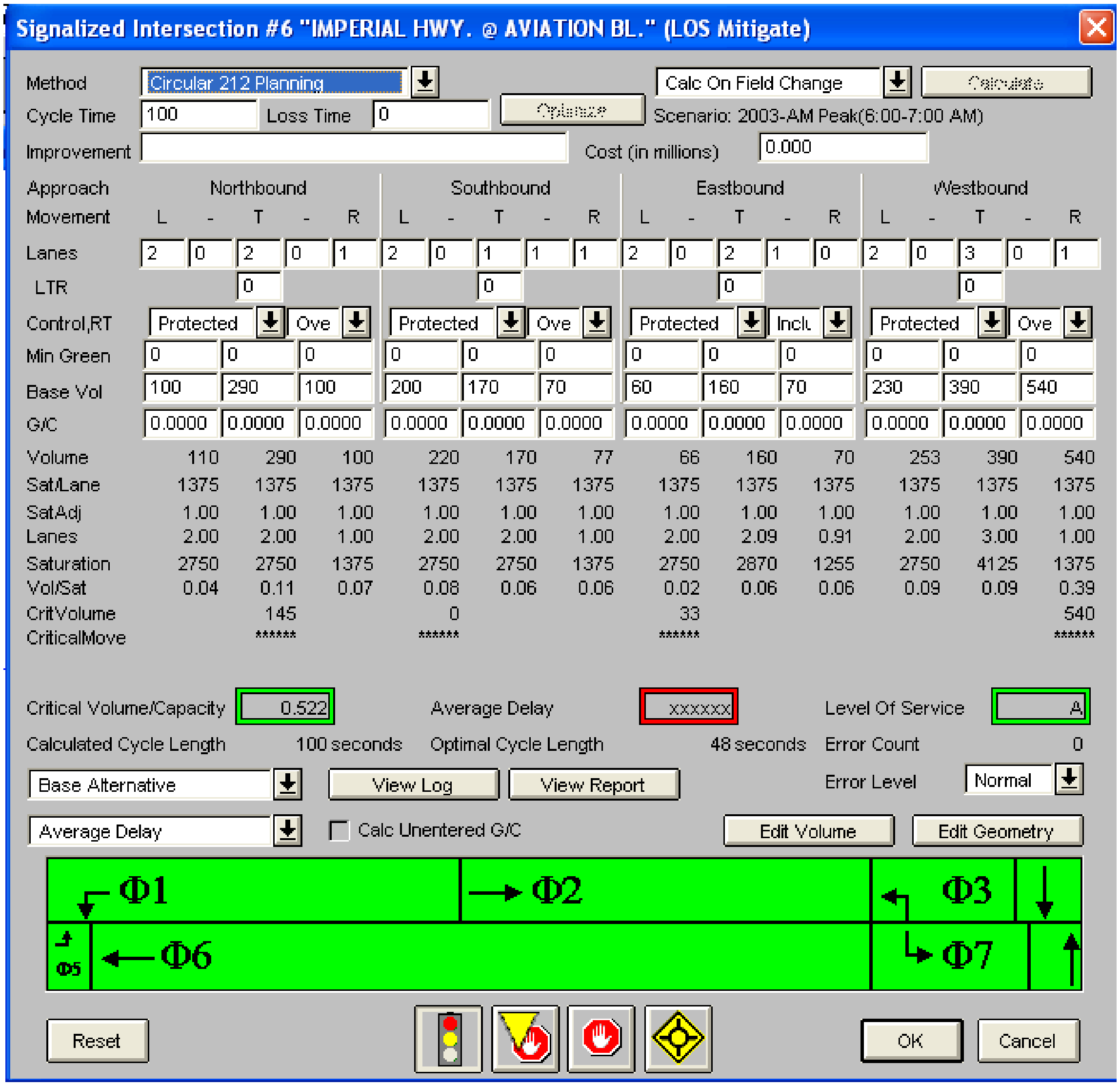
Calculated Cycle Length: 100 seconds | Optimal Cycle Length: 22 seconds | Error Count: 0

Base Alternative | View Log | View Report | Error Level: Normal

Average Delay | Calc Unentered G/C | Edit Volume | Edit Geometry

Φ2 Φ3 Φ5 Φ6 Φ7

Reset | OK | Cancel



Signalized Intersection #6 "IMPERIAL HWY. @ AVIATION BL." (LOS Mitigate)

Method: Circular 212 Planning | Calc On Field Change | Calculate

Cycle Time: 100 | Loss Time: 0 | Optimize | Scenario: 2003-AM Peak(6:00-7:00 AM)

Improvement: | Cost (in millions): 0.000

Approach	Northbound			Southbound			Eastbound			Westbound		
Movement	L	T	R	L	T	R	L	T	R	L	T	R
Lanes	2 - 0	2 - 0	1	2 - 0	1 - 1	1	2 - 0	2 - 1	0	2 - 0	3 - 0	1
LTR		0			0			0			0	
Control,RT	Protected		Ove	Protected		Ove	Protected		Inclu	Protected		Ove
Min Green	0	0	0	0	0	0	0	0	0	0	0	0
Base Vol	100	290	100	200	170	70	60	160	70	230	390	540
G/C	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Volume	110	290	100	220	170	77	66	160	70	253	390	540
Sat/Lane	1375	1375	1375	1375	1375	1375	1375	1375	1375	1375	1375	1375
SatAdj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes	2.00	2.00	1.00	2.00	2.00	1.00	2.00	2.09	0.91	2.00	3.00	1.00
Saturation	2750	2750	1375	2750	2750	1375	2750	2870	1255	2750	4125	1375
Vol/Sat	0.04	0.11	0.07	0.08	0.06	0.06	0.02	0.06	0.06	0.09	0.09	0.39
CritVolume		145		0			33					540
CriticalMove		******		******			******					******

Critical Volume/Capacity: 0.522 | Average Delay: xxxxxx | Level Of Service: A

Calculated Cycle Length: 100 seconds | Optimal Cycle Length: 48 seconds | Error Count: 0

Base Alternative | View Log | View Report | Error Level: Normal

Average Delay | Calc Unentered G/C | Edit Volume | Edit Geometry

Φ1 | Φ2 | Φ3

Φ5 | Φ6 | Φ7

Reset | OK | Cancel

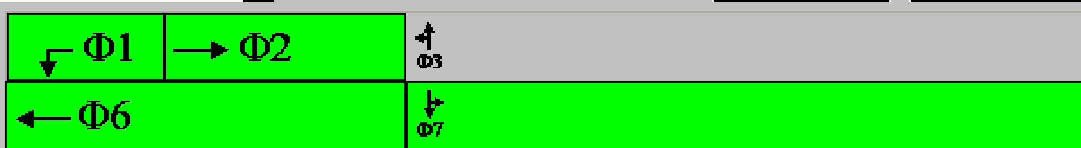
Signalized Intersection #7 "IMPERIAL HWY. @ 105 RAMP" (LOS Mitigate)

Method: Circular 212 Planning | Calc On Field Change | Calculate
Cycle Time: 100 | Loss Time: 0 | Optimize | Scenario: 2003-AM Peak(6:00-7:00 AM)
Improvement: | Cost (in millions): 0.000

Approach	Northbound					Southbound					Eastbound					Westbound				
Movement	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Lanes	2	0	0	0	2	0	0	0	0	0	0	0	2	1	1	1	0	3	0	0
LTR			0					0					0					0		

	Northbound			Southbound			Eastbound			Westbound		
Control,RT	Split Phase		Ove	Split Phase		Inclu	Protected		Ove	Protected		Inclu
Min Green	0	0	0	0	0	0	0	0	0	0	0	0
Base Vol	460	0	290	0	0	0	0	180	260	60	460	0
G/C	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Volume	506	0	319	0	0	0	0	180	286	60	460	0
Sat/Lane	1375	1375	1375	1375	1375	1375	1375	1375	1375	1375	1375	1375
SatAdj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes	2.00	0.00	2.00	0.00	0.00	0.00	0.00	2.00	2.00	1.00	3.00	0.00
Saturation	2750	0	2750	0	0	0	0	2750	2750	1375	4125	0
Vol/Sat	0.18	0.00	0.12	0.00	0.00	0.00	0.00	0.07	0.10	0.04	0.11	0.00
CritVolume	253							90		60		
CriticalMove	******							******		******		

Critical Volume/Capacity: 0.293 | Average Delay: xxxxxx | Level Of Service: A
Calculated Cycle Length: 100 seconds | Optimal Cycle Length: 32 seconds | Error Count: 0
Base Alternative | View Log | View Report | Error Level: Normal
Average Delay | Calc Unentered G/C | Edit Volume | Edit Geometry



Reset | OK | Cancel

Signalized Intersection #8 "IMPERIAL HWY. @ La CIENEGA BLVD." (LOS Mitigate)

Method: Circular 212 Planning — Calc On Field Change — Calculate

Cycle Time: 100 — Loss Time: 0 — Optimize — Scenario: 2003-AM Peak(6:00-7:00 AM)

Improvement: — Cost (in millions): 0.000

Approach	Northbound					Southbound					Eastbound					Westbound				
Movement	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Lanes	2	0	1	1	1	2	0	1	1	1	2	0	3	0	2	2	0	3	0	2
LTR			0					0					0					0		
Control,RT	Protected			Inclu		Protected			Inclu		Protected			Ove		Protected			Ove	
Min Green	0		0		0	0		0		0	0		0		0	0		0		0
Base Vol	20		90		90	40		70		160	130		150		70	30		410		260
G/C	0.0000		0.0000		0.0000	0.0000		0.0000		0.0000	0.0000		0.0000		0.0000	0.0000		0.0000		0.0000
Volume	22		90		99	44		70		176	143		150		77	33		410		286
Sat/Lane	1375		1375		1375	1375		1375		1375	1375		1375		1375	1375		1375		1375
SatAdj	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00
Lanes	2.00		1.43		1.57	2.00		1.00		2.00	2.00		3.00		2.00	2.00		3.00		2.00
Saturation	2750		1964		2161	2750		1375		2750	2750		4125		2750	2750		4125		2750
Vol/Sat	0.01		0.05		0.05	0.02		0.05		0.06	0.05		0.04		0.03	0.01		0.10		0.10
CritVolume			63			22					72							137		
CriticalMove			******			******					******							******		

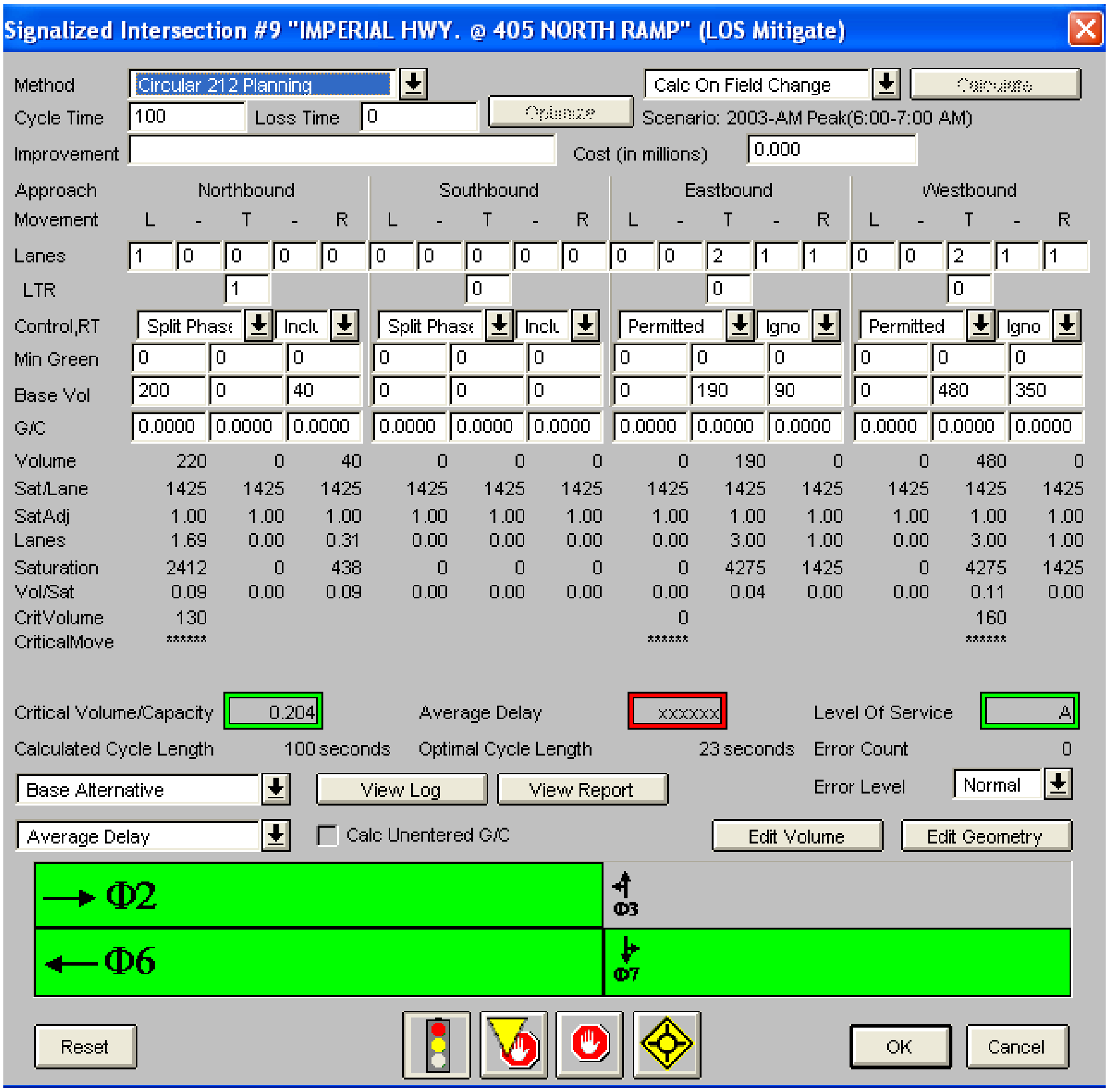
Critical Volume/Capacity: 0.213 — Average Delay: xxxxxx — Level Of Service: A

Calculated Cycle Length: 100 seconds — Optimal Cycle Length: 29 seconds — Error Count: 0

Base Alternative — View Log — View Report — Error Level: Normal

Average Delay — Calc Unentered G/C — Edit Volume — Edit Geometry

Reset — OK — Cancel



Signalized Intersection #9 "IMPERIAL HWY. @ 405 NORTH RAMP" (LOS Mitigate)

Method: Circular 212 Planning — Calc On Field Change — Calculate

Cycle Time: 100 — Loss Time: 0 — Optimize — Scenario: 2003-AM Peak(6:00-7:00 AM)

Improvement: — Cost (in millions): 0.000

Approach	Northbound					Southbound					Eastbound					Westbound				
Movement	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Lanes	1	0	0	0	0	0	0	0	0	0	0	0	2	1	1	0	0	2	1	1
LTR			1					0					0					0		

	NB L	NB T	NB R	SB L	SB T	SB R	EB L	EB T	EB R	WB L	WB T	WB R
Control,RT	Split Phase		Inclu	Split Phase		Inclu	Permitted		Igno	Permitted		Igno
Min Green	0	0	0	0	0	0	0	0	0	0	0	0
Base Vol	200	0	40	0	0	0	0	190	90	0	480	350
G/C	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Volume	220	0	40	0	0	0	0	190	0	0	480	0
Sat/Lane	1425	1425	1425	1425	1425	1425	1425	1425	1425	1425	1425	1425
SatAdj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes	1.69	0.00	0.31	0.00	0.00	0.00	0.00	3.00	1.00	0.00	3.00	1.00
Saturation	2412	0	438	0	0	0	0	4275	1425	0	4275	1425
Vol/Sat	0.09	0.00	0.09	0.00	0.00	0.00	0.00	0.04	0.00	0.00	0.11	0.00
CritVolume	130						0				160	
CriticalMove	******						******				******	

Critical Volume/Capacity: 0.204 — Average Delay: xxxxxx — Level Of Service: A

Calculated Cycle Length: 100 seconds — Optimal Cycle Length: 23 seconds — Error Count: 0

Base Alternative — View Log — View Report — Error Level: Normal

Average Delay — Calc Unentered G/C — Edit Volume — Edit Geometry

Reset — OK — Cancel

Signalized Intersection #10 "AVIATION BLVD. @ CENTURY BLVD." (LOS Mitigate)

Method: Circular 212 Planning | Calc On Field Change | Calculate

Cycle Time: 100 | Loss Time: 0 | Optimize | Scenario: 2003-AM Peak(6:00-7:00 AM)

Improvement: | Cost (in millions): 0.000

Approach	Northbound					Southbound					Eastbound					Westbound				
Movement	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Lanes	2	0	1	1	0	2	0	2	0	1	1	0	3	1	0	1	0	3	1	0
LTR			0					0					0					0		
Control,RT	Protected			Inclu		Protected			Inclu		Protected			Inclu		Protected			Inclu	

Approach	NB L	NB T	NB R	SB L	SB T	SB R	EB L	EB T	EB R	WB L	WB T	WB R
Min Green	0	0	0	0	0	0	0	0	0	0	0	0
Base Vol	460	330	40	30	180	130	80	980	210	70	1570	130
G/C	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Volume	506	330	40	33	180	130	80	980	210	70	1570	130
Sat/Lane	1375	1375	1375	1375	1375	1375	1375	1375	1375	1375	1375	1375
SatAdj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes	2.00	1.78	0.22	2.00	2.00	1.00	1.00	3.29	0.71	1.00	3.69	0.31
Saturation	2750	2453	297	2750	2750	1375	1375	4529	971	1375	5079	421
Vol/Sat	0.18	0.13	0.13	0.01	0.07	0.09	0.06	0.22	0.22	0.05	0.31	0.31
CritVolume	253					130	80				425	
CriticalMove	******					******	******				******	

Critical Volume/Capacity: 0.646 | Average Delay: xxxxxx | Level Of Service: B

Calculated Cycle Length: 100 seconds | Optimal Cycle Length: 64 seconds | Error Count: 0

Base Alternative | View Log | View Report | Error Level: Normal

Average Delay | Calc Unentered G/C | Edit Volume | Edit Geometry

Φ | Φ2 | Φ3 | Φ4

Φ5 | Φ6 | Φ7 | Φ8

Reset | OK | Cancel

Signalized Intersection #11 "AVIATION BLVD. @ 111TH" (LOS Mitigate)

Method: Circular 212 Planning | Calc On Field Change | Calculate

Cycle Time: 100 | Loss Time: 0 | Optimize | Scenario: 2003-AM Peak(6:00-7:00 AM)

Improvement: | Cost (in millions): 0.000

Approach	Northbound					Southbound					Eastbound					Westbound				
Movement	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Lanes	1	0	1	1	0	1	0	1	1	0	1	0	0	1	0	1	0	1	1	0
LTR			0					0					0					0		
Control,RT	Permitted			Inclu		Permitted			Inclu		Permitted			Inclu		Permitted			Inclu	
Min Green	0		0		0	0		0		0	0		0		0	0		0		0
Base Vol	20		810		70	60		410		30	20		20		10	30		30		80
G/C	0.0000		0.0000		0.0000	0.0000		0.0000		0.0000	0.0000		0.0000		0.0000	0.0000		0.0000		0.0000
Volume	20		810		70	60		410		30	20		20		10	30		30		80
Sat/Lane	1500		1500		1500	1500		1500		1500	1500		1500		1500	1500		1500		1500
SatAdj	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00
Lanes	1.00		1.84		0.16	1.00		1.86		0.14	1.00		0.67		0.33	1.00		1.00		1.00
Saturation	1500		2761		239	1500		2795		205	1500		1000		500	1500		1500		1500
Vol/Sat	0.01		0.29		0.29	0.04		0.15		0.15	0.01		0.02		0.02	0.02		0.02		0.05
CritVolume			440			60					20									80
CriticalMove			******			******					******									******

Critical Volume/Capacity: 0.400 | Average Delay: xxxxxx | Level Of Service: A

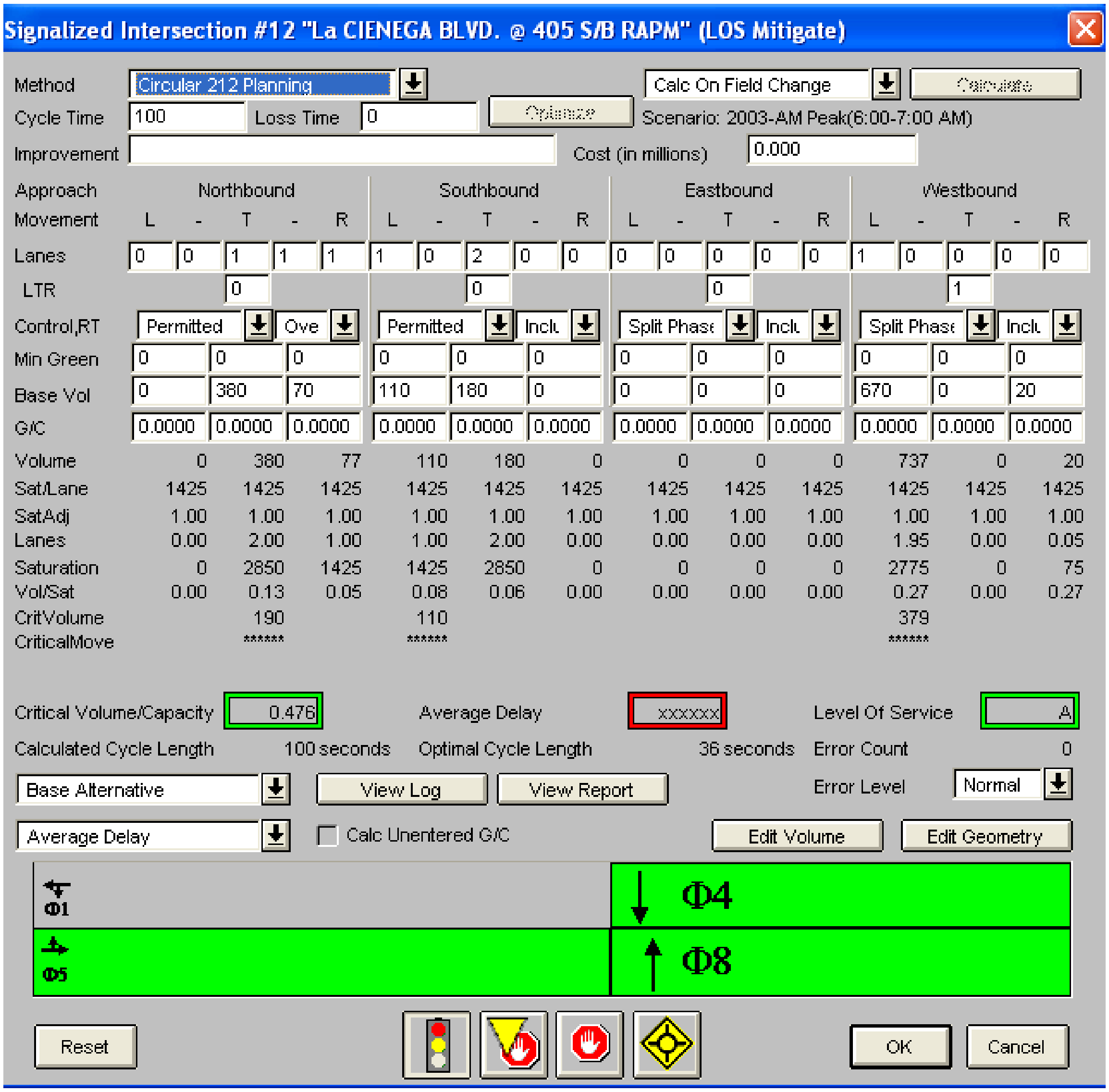
Calculated Cycle Length: 100 seconds | Optimal Cycle Length: 24 seconds | Error Count: 0

Base Alternative | View Log | View Report | Error Level: Normal

Average Delay | Calc Unentered G/C | Edit Volume | Edit Geometry

→ Φ2	↓ Φ4
← Φ6	↑ Φ8

Reset | OK | Cancel



Signalized Intersection #12 "La CIENEGA BLVD. @ 405 S/B RAPM" (LOS Mitigate)

Method: Circular 212 Planning | Calc On Field Change | Calculate

Cycle Time: 100 | Loss Time: 0 | Optimize | Scenario: 2003-AM Peak(6:00-7:00 AM)

Improvement: | Cost (in millions): 0.000

Approach	Northbound					Southbound					Eastbound					Westbound				
Movement	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Lanes	0	0	1	1	1	1	0	2	0	0	0	0	0	0	0	1	0	0	0	0
LTR			0					0					0					1		
Control,RT	Permitted				Ove	Permitted				Inclu	Split Phase				Inclu	Split Phase				Inclu
Min Green	0		0		0	0		0		0	0		0		0	0		0		0
Base Vol	0		380		70	110		180		0	0		0		0	670		0		20
G/C	0.0000		0.0000		0.0000	0.0000		0.0000		0.0000	0.0000		0.0000		0.0000	0.0000		0.0000		0.0000
Volume	0		380		77	110		180		0	0		0		0	737		0		20
Sat/Lane	1425		1425		1425	1425		1425		1425	1425		1425		1425	1425		1425		1425
SatAdj	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00
Lanes	0.00		2.00		1.00	1.00		2.00		0.00	0.00		0.00		0.00	1.95		0.00		0.05
Saturation	0		2850		1425	1425		2850		0	0		0		0	2775		0		75
Vol/Sat	0.00		0.13		0.05	0.08		0.06		0.00	0.00		0.00		0.00	0.27		0.00		0.27
CritVolume			190			110										379				
CriticalMove			******			******										******				

Critical Volume/Capacity: 0.476 | Average Delay: xxxxxx | Level Of Service: A

Calculated Cycle Length: 100 seconds | Optimal Cycle Length: 36 seconds | Error Count: 0

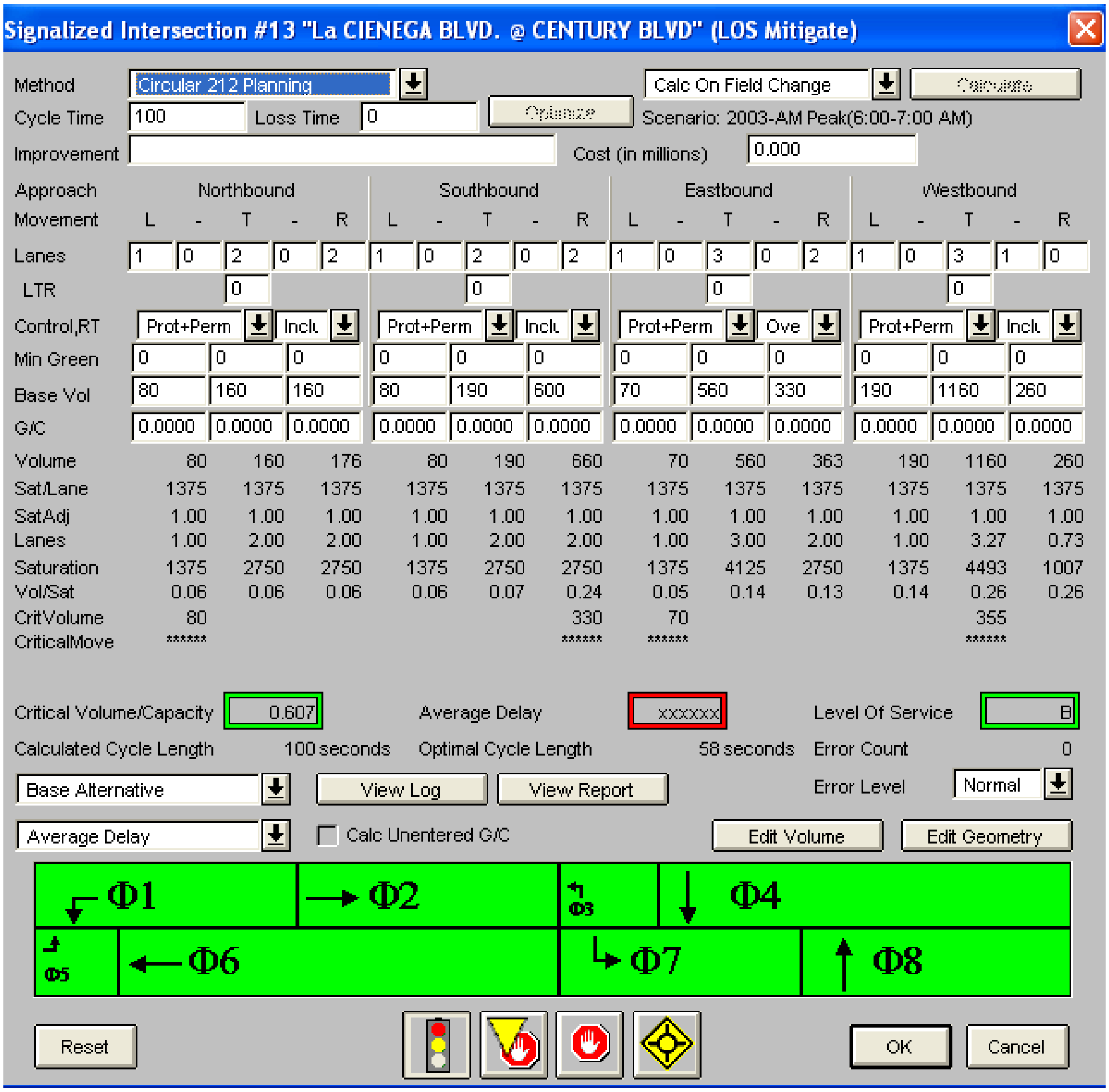
Base Alternative | View Log | View Report | Error Level: Normal

Average Delay | Calc Unentered G/C | Edit Volume | Edit Geometry

Φ1 Φ4

Φ5 Φ8

Reset | OK | Cancel



Signalized Intersection #13 "La CIENEGA BLVD. @ CENTURY BLVD" (LOS Mitigate)

Method: Circular 212 Planning — Calc On Field Change — Calculate

Cycle Time: 100 — Loss Time: 0 — Optimize — Scenario: 2003-AM Peak(6:00-7:00 AM)

Improvement: — Cost (in millions): 0.000

Approach	Northbound			Southbound			Eastbound			Westbound		
Movement	L	T	R	L	T	R	L	T	R	L	T	R
Lanes	1 - 0	2 - 0	2	1 - 0	2 - 0	2	1 - 0	3 - 0	2	1 - 0	3 - 1	0
LTR		0			0			0			0	
Control,RT	Prot+Perm		Inclu	Prot+Perm		Inclu	Prot+Perm		Ove	Prot+Perm		Inclu
Min Green	0	0	0	0	0	0	0	0	0	0	0	0
Base Vol	80	160	160	80	190	600	70	560	330	190	1160	260
G/C	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Volume	80	160	176	80	190	660	70	560	363	190	1160	260
Sat/Lane	1375	1375	1375	1375	1375	1375	1375	1375	1375	1375	1375	1375
SatAdj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes	1.00	2.00	2.00	1.00	2.00	2.00	1.00	3.00	2.00	1.00	3.27	0.73
Saturation	1375	2750	2750	1375	2750	2750	1375	4125	2750	1375	4493	1007
Vol/Sat	0.06	0.06	0.06	0.06	0.07	0.24	0.05	0.14	0.13	0.14	0.26	0.26
CritVolume	80					330	70				355	
CriticalMove	******					******	******				******	

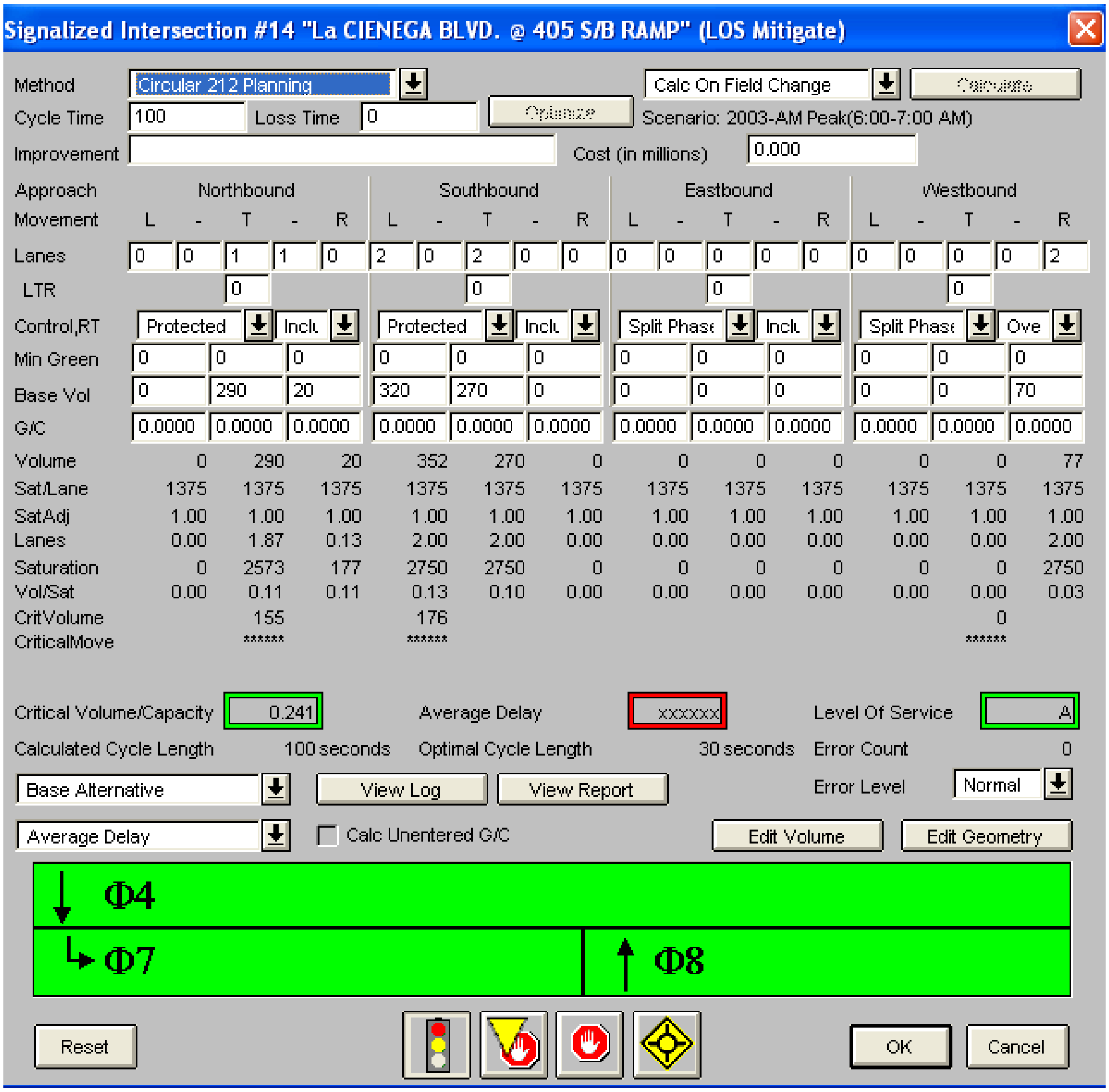
Critical Volume/Capacity: 0.607 — Average Delay: xxxxxx — Level Of Service: B

Calculated Cycle Length: 100 seconds — Optimal Cycle Length: 58 seconds — Error Count: 0

Base Alternative — View Log — View Report — Error Level: Normal

Average Delay — Calc Unentered G/C — Edit Volume — Edit Geometry

Reset — OK — Cancel



Signalized Intersection #14 "La CIENEGA BLVD. @ 405 S/B RAMP" (LOS Mitigate)

Method: Circular 212 Planning | Calc On Field Change | Calculate
Cycle Time: 100 | Loss Time: 0 | Optimize | Scenario: 2003-AM Peak(6:00-7:00 AM)
Improvement: | Cost (in millions): 0.000

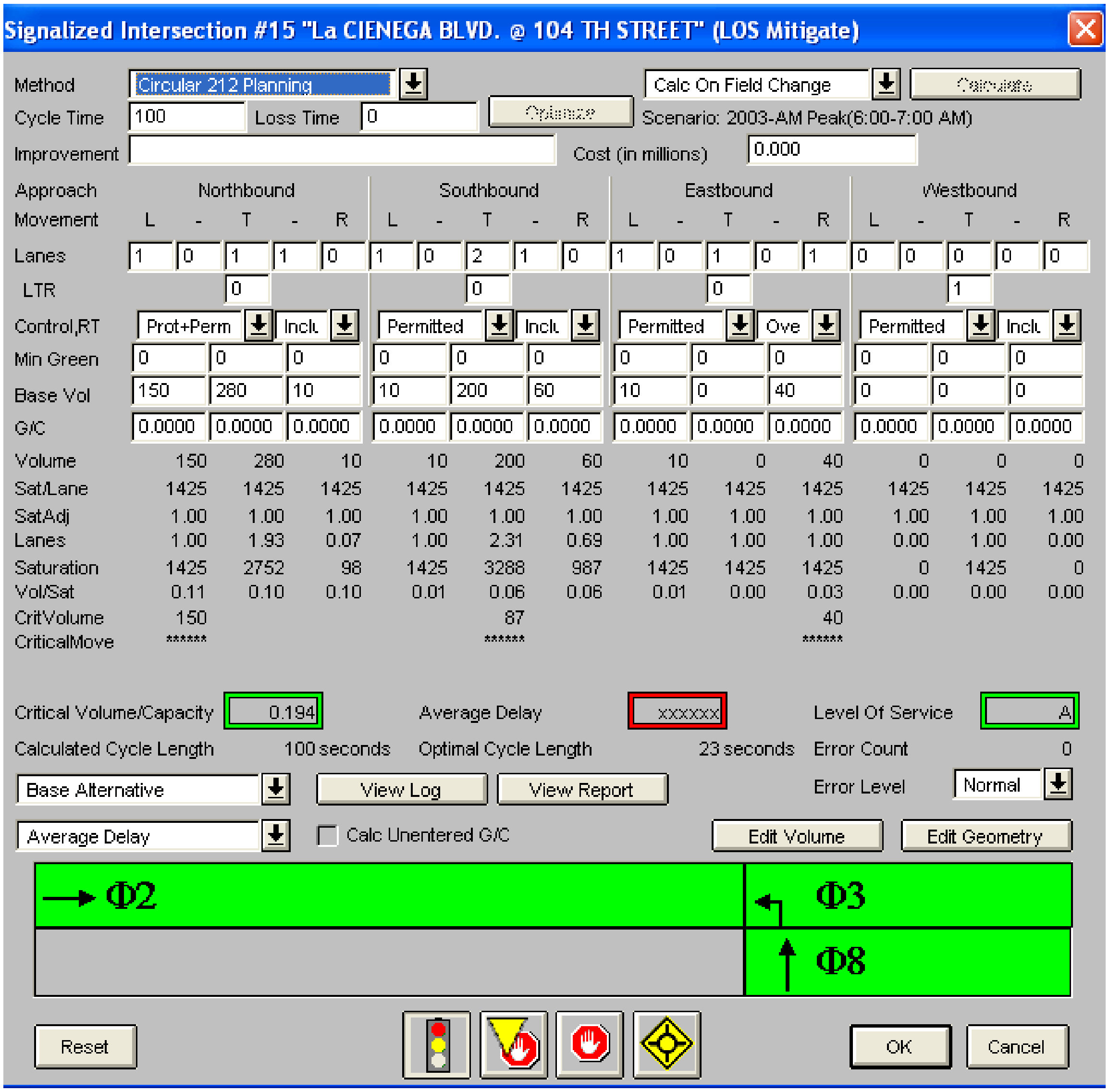
Approach	Northbound					Southbound					Eastbound					Westbound				
Movement	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Lanes	0	0	1	1	0	2	0	2	0	0	0	0	0	0	0	0	0	0	0	2
LTR			0					0					0					0		

Approach	Northbound			Southbound			Eastbound			Westbound		
Control,RT	Protected		Inclu	Protected		Inclu	Split Phase		Inclu	Split Phase		Ove
Min Green	0	0	0	0	0	0	0	0	0	0	0	0
Base Vol	0	290	20	320	270	0	0	0	0	0	0	70
G/C	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Volume	0	290	20	352	270	0	0	0	0	0	0	77
Sat/Lane	1375	1375	1375	1375	1375	1375	1375	1375	1375	1375	1375	1375
SatAdj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes	0.00	1.87	0.13	2.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	2.00
Saturation	0	2573	177	2750	2750	0	0	0	0	0	0	2750
Vol/Sat	0.00	0.11	0.11	0.13	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.03
CritVolume		155		176							0	
CriticalMove		******		******							******	

Critical Volume/Capacity: 0.241 | Average Delay: xxxxxx | Level Of Service: A
Calculated Cycle Length: 100 seconds | Optimal Cycle Length: 30 seconds | Error Count: 0
Base Alternative | View Log | View Report | Error Level: Normal
Average Delay | Calc Unentered G/C | Edit Volume | Edit Geometry

Φ4
Φ7 | Φ8

Reset | OK | Cancel



Signalized Intersection #15 "La CIENEGA BLVD. @ 104 TH STREET" (LOS Mitigate)

Method: Circular 212 Planning | Calc On Field Change | Calculate

Cycle Time: 100 | Loss Time: 0 | Optimize | Scenario: 2003-AM Peak(6:00-7:00 AM)

Improvement: | Cost (in millions): 0.000

Approach	Northbound					Southbound					Eastbound					Westbound				
Movement	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Lanes	1	0	1	1	0	1	0	2	1	0	1	0	1	0	1	0	0	0	0	0
LTR			0					0					0					1		

Approach	Northbound			Southbound			Eastbound			Westbound		
Control,RT	Prot+Perm		Inclu	Permitted		Inclu	Permitted		Ove	Permitted		Inclu
Min Green	0	0	0	0	0	0	0	0	0	0	0	0
Base Vol	150	280	10	10	200	60	10	0	40	0	0	0
G/C	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Volume	150	280	10	10	200	60	10	0	40	0	0	0
Sat/Lane	1425	1425	1425	1425	1425	1425	1425	1425	1425	1425	1425	1425
SatAdj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes	1.00	1.93	0.07	1.00	2.31	0.69	1.00	1.00	1.00	0.00	1.00	0.00
Saturation	1425	2752	98	1425	3288	987	1425	1425	1425	0	1425	0
Vol/Sat	0.11	0.10	0.10	0.01	0.06	0.06	0.01	0.00	0.03	0.00	0.00	0.00
CritVolume	150				87				40			
CriticalMove	******				******				******			

Critical Volume/Capacity: 0.194 | Average Delay: xxxxxx | Level Of Service: A

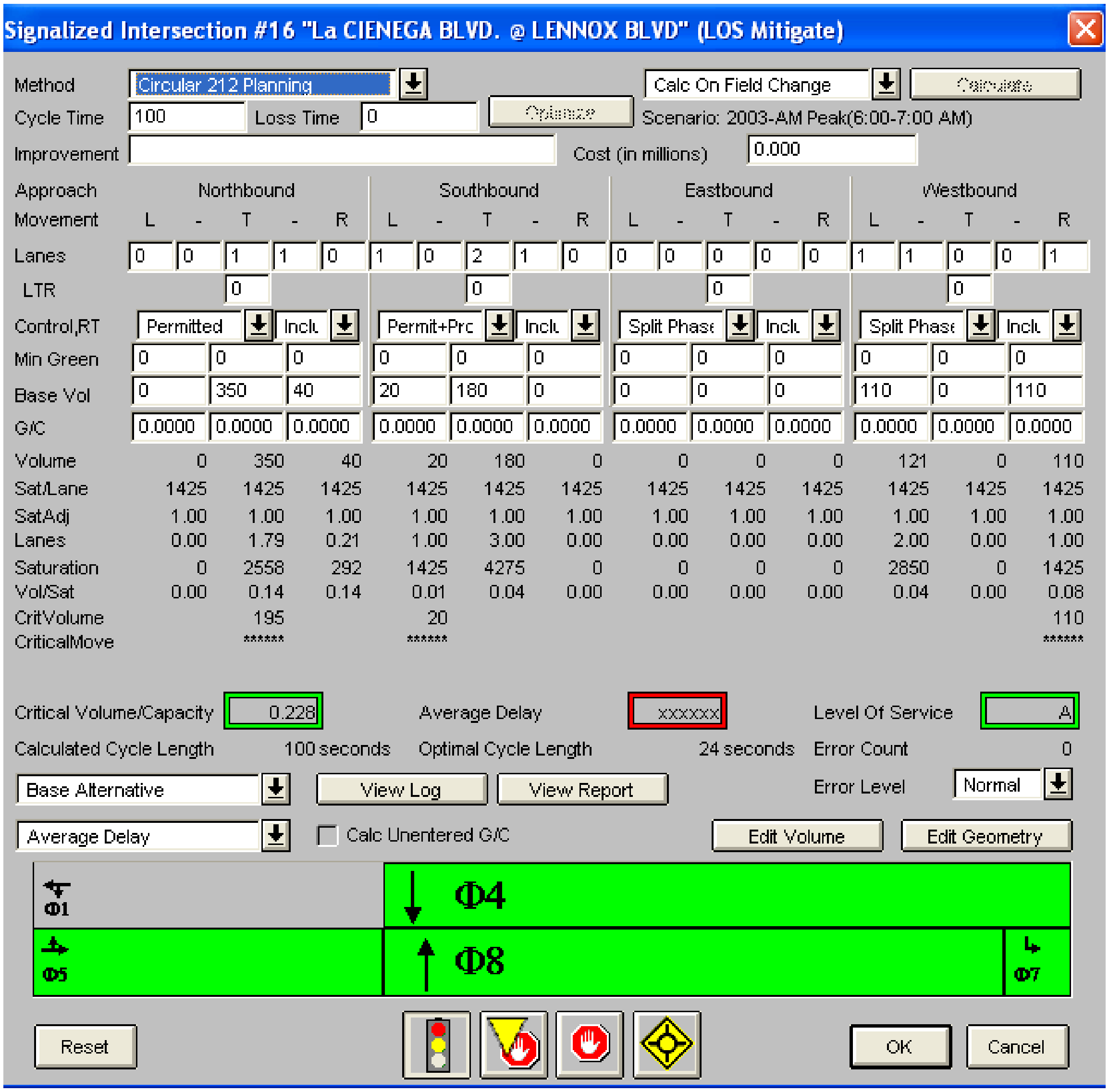
Calculated Cycle Length: 100 seconds | Optimal Cycle Length: 23 seconds | Error Count: 0

Base Alternative | View Log | View Report | Error Level: Normal

Average Delay | Calc Unentered G/C | Edit Volume | Edit Geometry

Φ2 | Φ3 | Φ8

Reset | OK | Cancel



Signalized Intersection #16 "La CIENEGA BLVD. @ LENNOX BLVD" (LOS Mitigate)

Method: Circular 212 Planning | Calc On Field Change | Calculate

Cycle Time: 100 | Loss Time: 0 | Optimize | Scenario: 2003-AM Peak(6:00-7:00 AM)

Improvement: | Cost (in millions): 0.000

Approach	Northbound					Southbound					Eastbound					Westbound				
Movement	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Lanes	0	0	1	1	0	1	0	2	1	0	0	0	0	0	0	1	1	0	0	1
LTR			0					0					0					0		

Approach	Northbound			Southbound			Eastbound			Westbound		
Movement	L	T	R	L	T	R	L	T	R	L	T	R
Control,RT	Permitted		Inclu	Permit+Prc		Inclu	Split Phase		Inclu	Split Phase		Inclu
Min Green	0	0	0	0	0	0	0	0	0	0	0	0
Base Vol	0	350	40	20	180	0	0	0	0	110	0	110
G/C	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Volume	0	350	40	20	180	0	0	0	0	121	0	110
Sat/Lane	1425	1425	1425	1425	1425	1425	1425	1425	1425	1425	1425	1425
SatAdj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes	0.00	1.79	0.21	1.00	3.00	0.00	0.00	0.00	0.00	2.00	0.00	1.00
Saturation	0	2558	292	1425	4275	0	0	0	0	2850	0	1425
Vol/Sat	0.00	0.14	0.14	0.01	0.04	0.00	0.00	0.00	0.00	0.04	0.00	0.08
CritVolume		195		20								110
CriticalMove		******		******								******

Critical Volume/Capacity: 0.228 | Average Delay: xxxxxx | Level Of Service: A

Calculated Cycle Length: 100 seconds | Optimal Cycle Length: 24 seconds | Error Count: 0

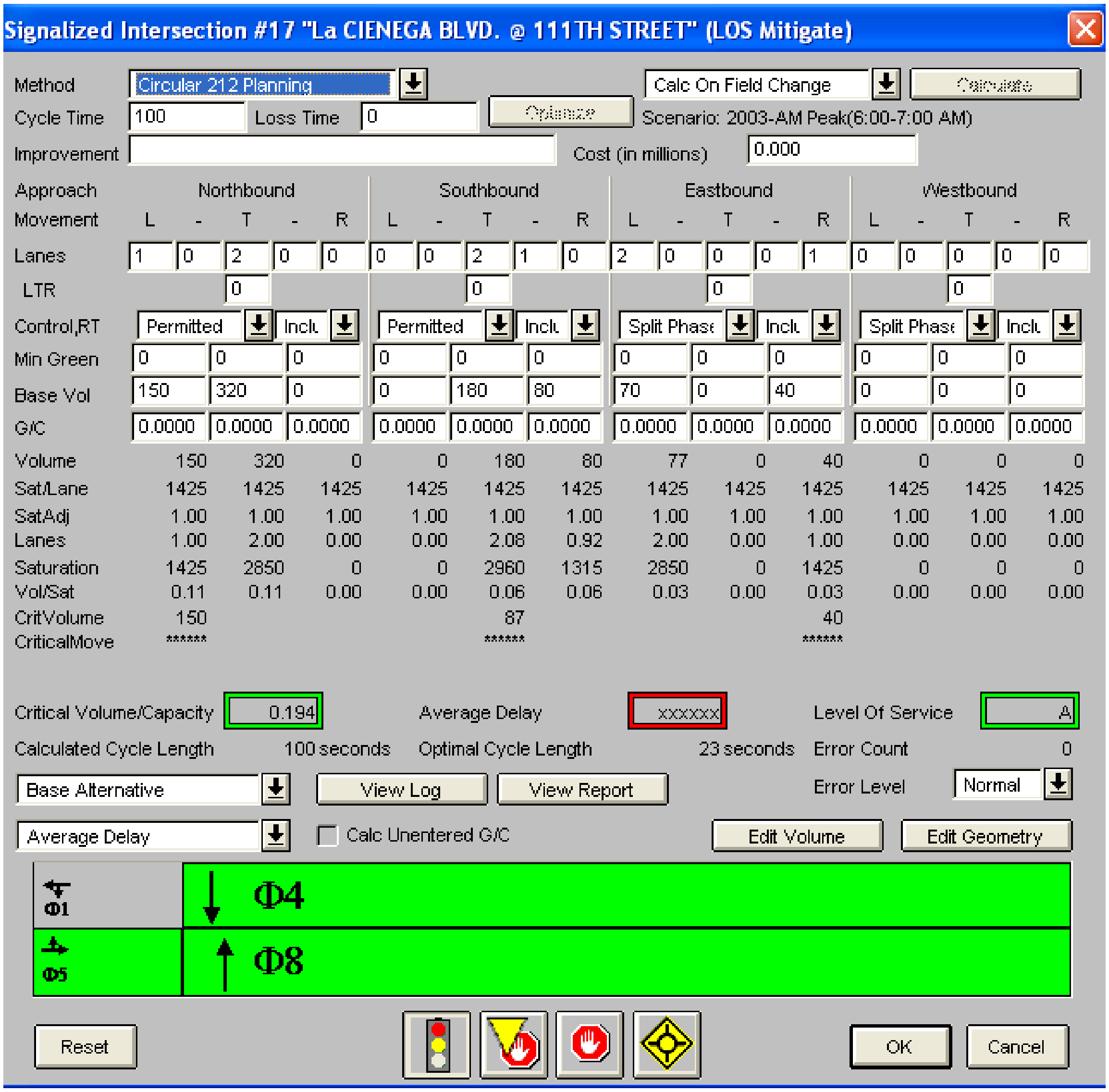
Base Alternative | View Log | View Report | Error Level: Normal

Average Delay | Calc Unentered G/C | Edit Volume | Edit Geometry

Φ1 Φ4

Φ5 Φ8 Φ7

Reset | OK | Cancel



Signalized Intersection #17 "La CIENEGA BLVD. @ 111TH STREET" (LOS Mitigate)

Method: Circular 212 Planning — Calc On Field Change — Calculate

Cycle Time: 100 — Loss Time: 0 — Optimize — Scenario: 2003-AM Peak(6:00-7:00 AM)

Improvement: — Cost (in millions): 0.000

Approach	Northbound					Southbound					Eastbound					Westbound				
Movement	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Lanes	1	0	2	0	0	0	0	2	1	0	2	0	0	0	1	0	0	0	0	0
LTR			0					0					0					0		
Control,RT	Permitted			Inclu		Permitted			Inclu		Split Phase			Inclu		Split Phase			Inclu	
Min Green	0		0		0	0		0		0	0		0		0	0		0		0
Base Vol	150		320		0	0		180		80	70		0		40	0		0		0
G/C	0.0000		0.0000		0.0000	0.0000		0.0000		0.0000	0.0000		0.0000		0.0000	0.0000		0.0000		0.0000
Volume	150		320		0	0		180		80	77		0		40	0		0		0
Sat/Lane	1425		1425		1425	1425		1425		1425	1425		1425		1425	1425		1425		1425
SatAdj	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00
Lanes	1.00		2.00		0.00	0.00		2.08		0.92	2.00		0.00		1.00	0.00		0.00		0.00
Saturation	1425		2850		0	0		2960		1315	2850		0		1425	0		0		0
Vol/Sat	0.11		0.11		0.00	0.00		0.06		0.06	0.03		0.00		0.03	0.00		0.00		0.00
CritVolume	150							87							40					
CriticalMove	******							******							******					

Critical Volume/Capacity: 0.194 — Average Delay: xxxxxx — Level Of Service: A

Calculated Cycle Length: 100 seconds — Optimal Cycle Length: 23 seconds — Error Count: 0

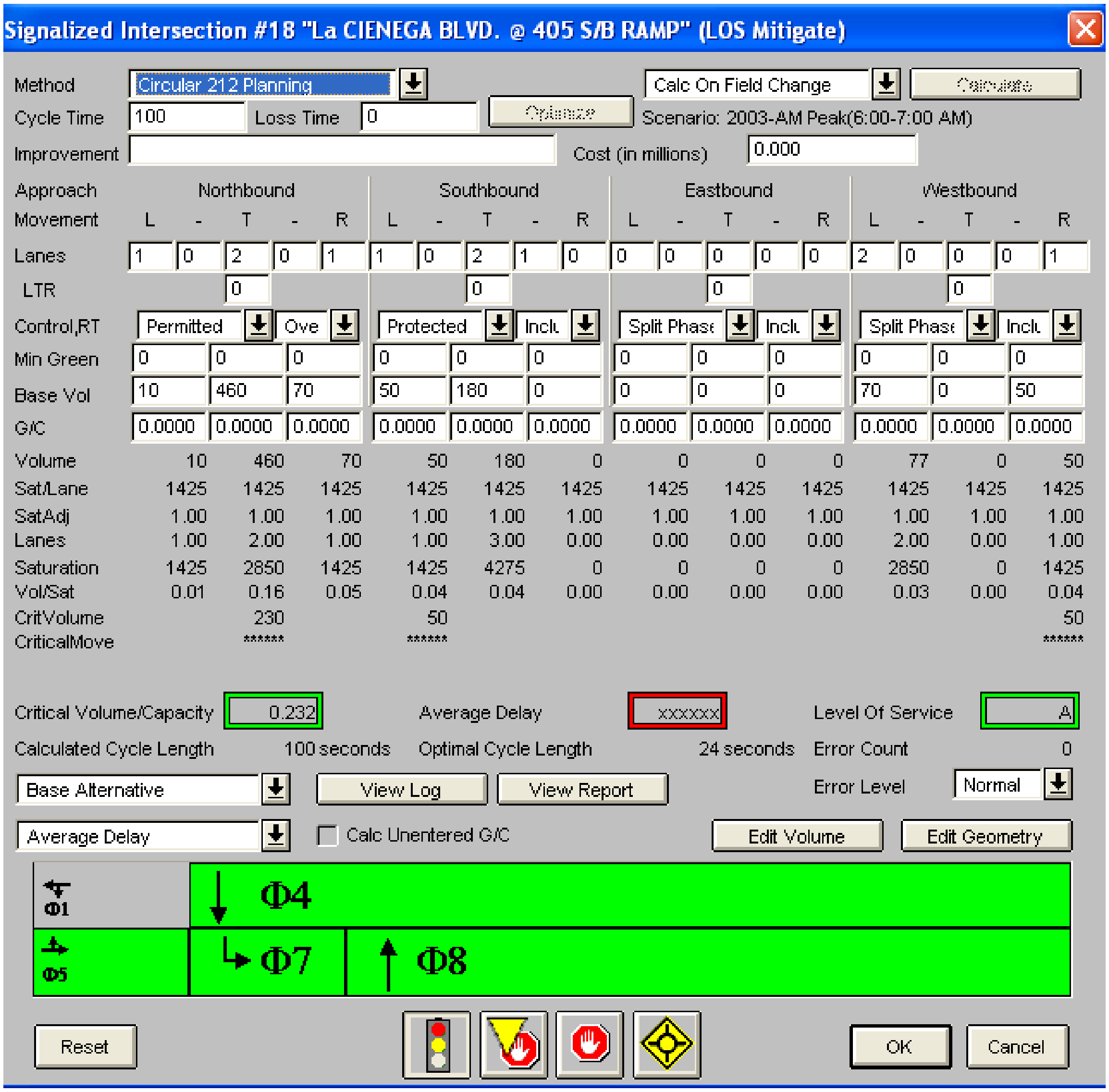
Base Alternative — View Log — View Report — Error Level: Normal

Average Delay — Calc Unentered G/C — Edit Volume — Edit Geometry

Φ1 Φ4

Φ5 Φ8

Reset — OK — Cancel



Signalized Intersection #18 "La CIENEGA BLVD. @ 405 S/B RAMP" (LOS Mitigate)

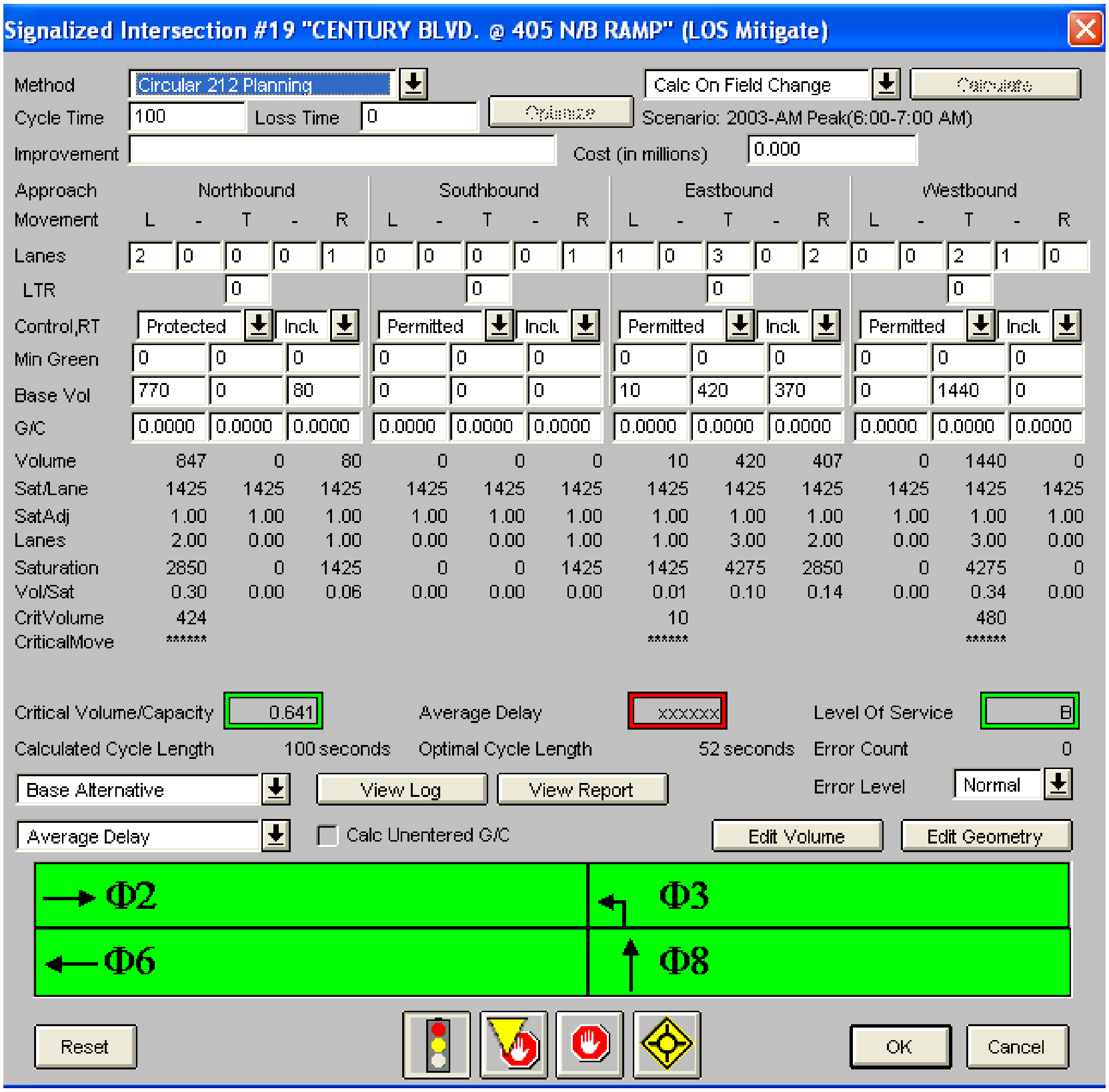
Method: Circular 212 Planning | Calc On Field Change | Calculate
Cycle Time: 100 | Loss Time: 0 | Optimize | Scenario: 2003-AM Peak(6:00-7:00 AM)
Improvement: | Cost (in millions): 0.000

Approach	Northbound					Southbound					Eastbound					Westbound				
Movement	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Lanes	1	0	2	0	1	1	0	2	1	0	0	0	0	0	0	2	0	0	0	1
LTR			0					0					0					0		

	Northbound			Southbound			Eastbound			Westbound		
Control,RT	Permitted		Ove	Protected		Inclu	Split Phase		Inclu	Split Phase		Inclu
Min Green	0	0	0	0	0	0	0	0	0	0	0	0
Base Vol	10	460	70	50	180	0	0	0	0	70	0	50
G/C	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Volume	10	460	70	50	180	0	0	0	0	77	0	50
Sat/Lane	1425	1425	1425	1425	1425	1425	1425	1425	1425	1425	1425	1425
SatAdj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes	1.00	2.00	1.00	1.00	3.00	0.00	0.00	0.00	0.00	2.00	0.00	1.00
Saturation	1425	2850	1425	1425	4275	0	0	0	0	2850	0	1425
Vol/Sat	0.01	0.16	0.05	0.04	0.04	0.00	0.00	0.00	0.00	0.03	0.00	0.04
CritVolume		230		50								50
CriticalMove		******		******								******

Critical Volume/Capacity: 0.232 | Average Delay: xxxxxx | Level Of Service: A
Calculated Cycle Length: 100 seconds | Optimal Cycle Length: 24 seconds | Error Count: 0
Base Alternative | View Log | View Report | Error Level: Normal
Average Delay | Calc Unentered G/C | Edit Volume | Edit Geometry

Reset | OK | Cancel



Signalized Intersection #19 "CENTURY BLVD. @ 405 N/B RAMP" (LOS Mitigate)

Method: Circular 212 Planning | Calc On Field Change | Calculate
Cycle Time: 100 | Loss Time: 0 | Optimize | Scenario: 2003-AM Peak(6:00-7:00 AM)
Improvement: | Cost (in millions): 0.000

Approach	Northbound					Southbound					Eastbound					Westbound				
Movement	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Lanes	2	0	0	0	1	0	0	0	0	1	1	0	3	0	2	0	0	2	1	0
LTR			0					0					0					0		

Approach	Northbound			Southbound			Eastbound			Westbound		
Movement	L	T	R	L	T	R	L	T	R	L	T	R
Control,RT	Protected		Inclu	Permitted		Inclu	Permitted		Inclu	Permitted		Inclu
Min Green	0	0	0	0	0	0	0	0	0	0	0	0
Base Vol	770	0	80	0	0	0	10	420	370	0	1440	0
G/C	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Volume	847	0	80	0	0	0	10	420	407	0	1440	0
Sat/Lane	1425	1425	1425	1425	1425	1425	1425	1425	1425	1425	1425	1425
SatAdj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes	2.00	0.00	1.00	0.00	0.00	1.00	1.00	3.00	2.00	0.00	3.00	0.00
Saturation	2850	0	1425	0	0	1425	1425	4275	2850	0	4275	0
Vol/Sat	0.30	0.00	0.06	0.00	0.00	0.00	0.01	0.10	0.14	0.00	0.34	0.00
CritVolume	424						10				480	
CriticalMove	******						******				******	

Critical Volume/Capacity: 0.641 | Average Delay: xxxxxx | Level Of Service: B
Calculated Cycle Length: 100 seconds | Optimal Cycle Length: 52 seconds | Error Count: 0
Base Alternative | View Log | View Report | Error Level: Normal
Average Delay | Calc Unentered G/C | Edit Volume | Edit Geometry

Φ2 | Φ3
Φ6 | Φ8

Reset | OK | Cancel

TRAFFIX Baseline (2003) Analysis Results Report—Delivery Peak Hour

Traffix 7.6.0115 (c) 2003 Dowling Assoc. Licensed to R & A, CHICAGO, IL
2003-Delivery (3:00-4:00 PM)Sun Jan 17, 2005 15:24:13 Page 1-1

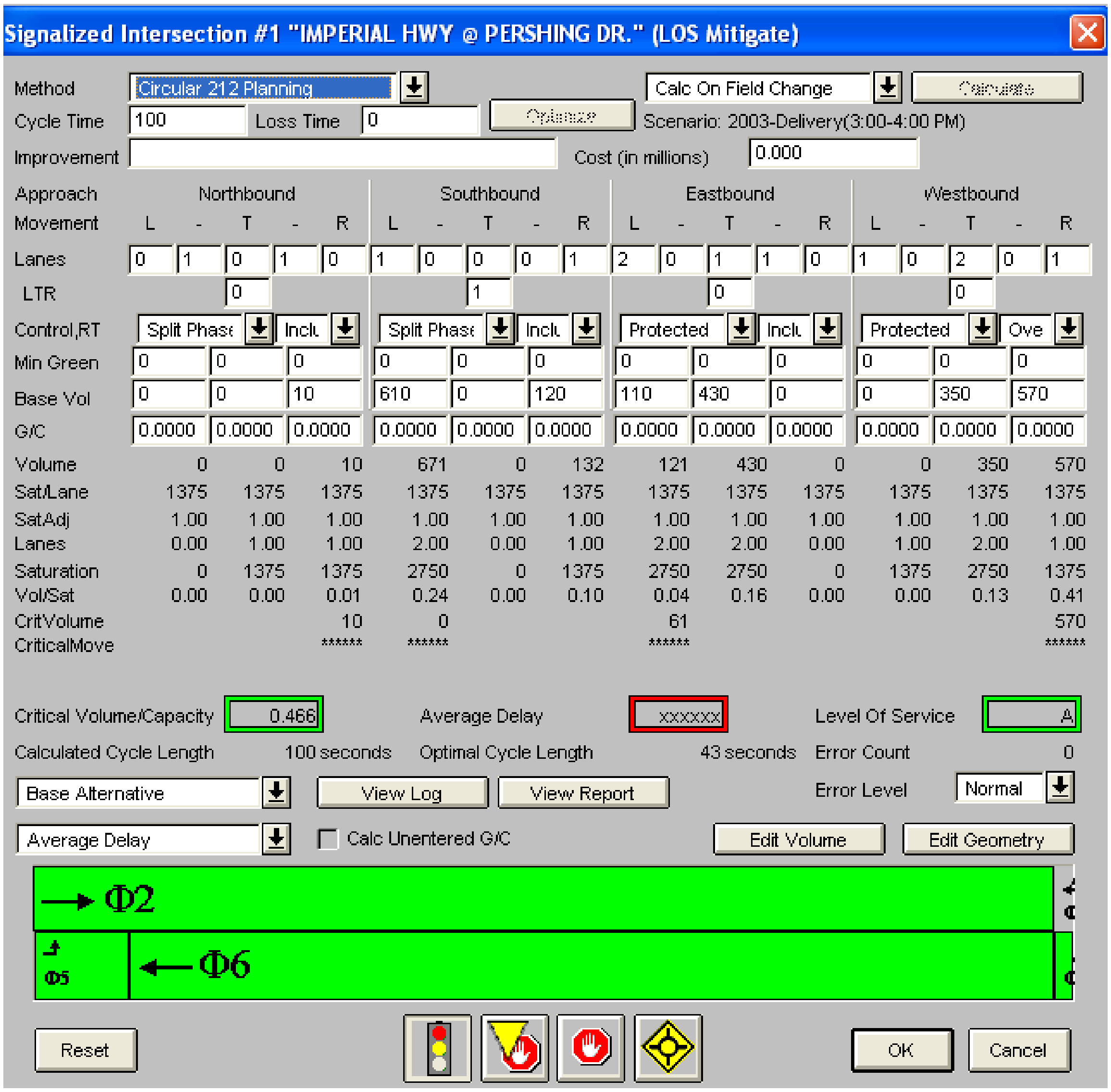
LAX SOUTH AIRFIELD EIR

Impact Analysis Report
Level Of Service

Intersection	LOS	V/C
# 1 IMPERIAL HWY @ PERSHING DR.	A	0.466
# 2 IMPERIAL HWY @MAIN STREET	A	0.568
# 3 IMPERIAL HWY @ SEPULVEDA BL.	F	1.013
# 4 IMPERIAL HWY @ NASH ST.	A	0.324
# 5 IMPERIAL HWY. @ DOUGLAS ST.	A	0.342
# 6 IMPERIAL HWY. @ AVIATION BL.	B	0.635
# 7 IMPERIAL HWY. @ 105 RAMP	B	0.664
# 8 IMPERIAL HWY. @ La CIENEGA BLV	A	0.378
# 9 IMPERIAL HWY. @ 405 NORTH RAMP	A	0.352
# 10 AVIATION BLVD. @ CENTURY BLVD.	D	0.878
# 11 AVIATION BLVD. @ 111TH	A	0.547
# 12 La CIENEGA BLVD. @ 405 S/B RAP	A	0.598
# 13 La CIENEGA BLVD. @ CENTURY BLV	D	0.800
# 14 La CIENEGA BLVD. @ 405 S/B RAM	A	0.503
# 15 La CIENEGA BLVD. @ 104 TH STRE	A	0.372
# 16 La CIENEGA BLVD. @ LENNOX BLVD	A	0.382
# 17 La CIENEGA BLVD. @ 111TH STREE	A	0.393
# 18 La CIENEGA BLVD. @ 405 S/B RAM	A	0.309
# 19 CENTURY BLVD. @ 405 N/B RAMP	A	0.512

Traffix 7.6.0115 (c) 2003 Dowling Assoc. Licensed to R & A, CHICAGO, IL

TRAFFIX Baseline (2003) Delivery Peak Hour Intersection Summary Reports



Signalized Intersection #1 "IMPERIAL HWY @ PERSHING DR." (LOS Mitigate)

Method: Circular 212 Planning — Calc On Field Change — Calculate

Cycle Time: 100 — Loss Time: 0 — Optimize — Scenario: 2003-Delivery(3:00-4:00 PM)

Improvement: — Cost (in millions): 0.000

Lanes (L - T - R): Northbound 0 1 0 1 0; Southbound 1 0 0 0 1; Eastbound 2 0 1 1 0; Westbound 1 0 2 0 1

LTR: Northbound 0; Southbound 1; Eastbound 0; Westbound 0

Approach	Northbound			Southbound			Eastbound			Westbound		
Movement	L	T	R	L	T	R	L	T	R	L	T	R
Control,RT	Split Phase		Inclu	Split Phase		Inclu	Protected		Inclu	Protected		Ove
Min Green	0	0	0	0	0	0	0	0	0	0	0	0
Base Vol	0	0	10	610	0	120	110	430	0	0	350	570
G/C	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Volume	0	0	10	671	0	132	121	430	0	0	350	570
Sat/Lane	1375	1375	1375	1375	1375	1375	1375	1375	1375	1375	1375	1375
SatAdj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes	0.00	1.00	1.00	2.00	0.00	1.00	2.00	2.00	0.00	1.00	2.00	1.00
Saturation	0	1375	1375	2750	0	1375	2750	2750	0	1375	2750	1375
Vol/Sat	0.00	0.00	0.01	0.24	0.00	0.10	0.04	0.16	0.00	0.00	0.13	0.41
CritVolume			10	0			61					570
CriticalMove			******	******			******					******

Critical Volume/Capacity: 0.466 — Average Delay: xxxxxx — Level Of Service: A

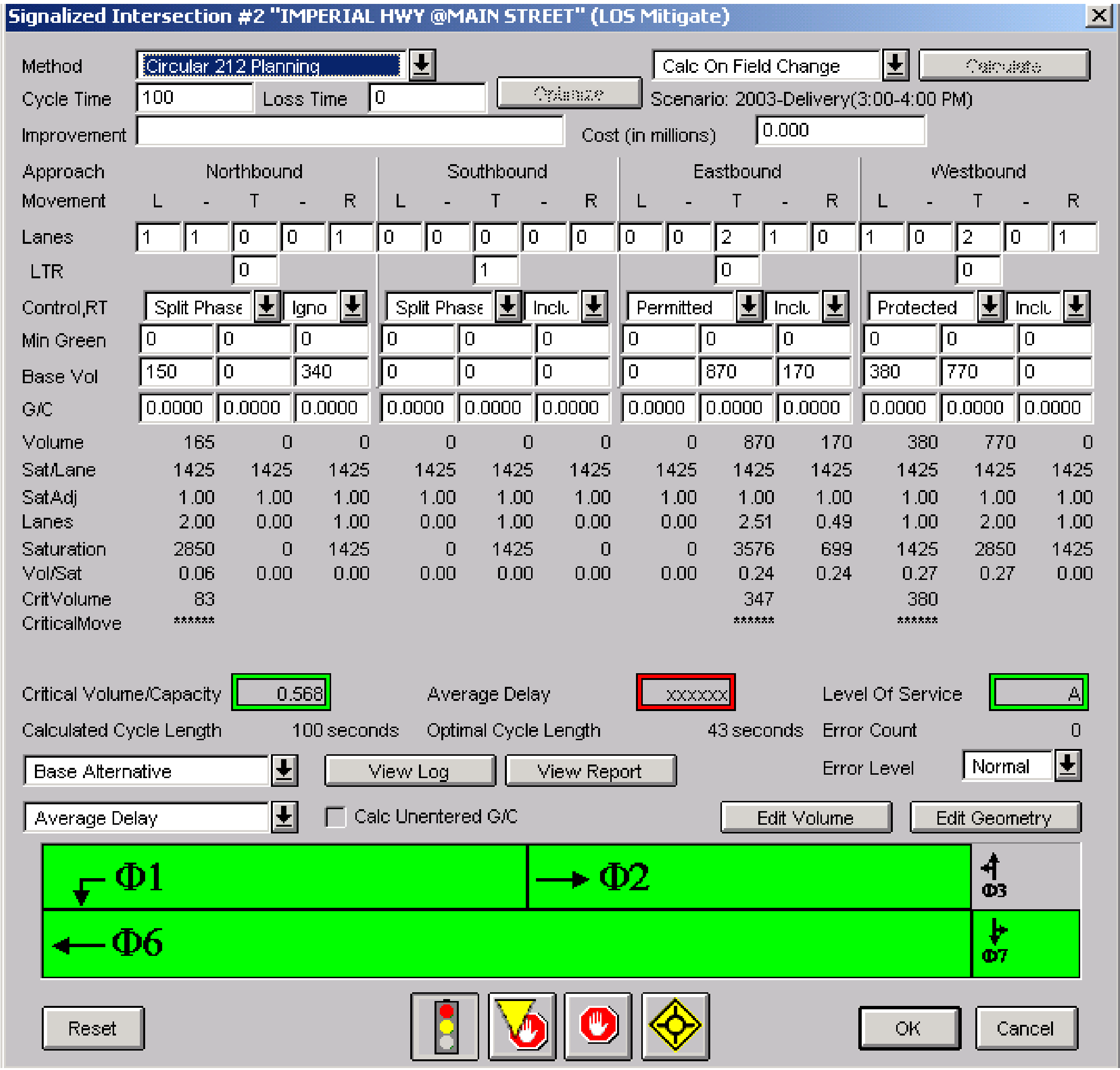
Calculated Cycle Length: 100 seconds — Optimal Cycle Length: 43 seconds — Error Count: 0

Base Alternative — View Log — View Report — Error Level: Normal

Average Delay — Calc Unentered G/C — Edit Volume — Edit Geometry

Φ2 — Φ5 — Φ6

Reset — OK — Cancel



Signalized Intersection #2 "IMPERIAL HWY @MAIN STREET" (LOS Mitigate)

Method: Circular 212 Planning — Calc On Field Change — Calculate

Cycle Time: 100 — Loss Time: 0 — Optimize — Scenario: 2003-Delivery(3:00-4:00 PM)

Improvement: — Cost (in millions): 0.000

Approach	Northbound					Southbound					Eastbound					Westbound				
Movement	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Lanes	1	1	0	0	1	0	0	0	0	0	0	0	2	1	0	1	0	2	0	1
LTR			0					1					0					0		

	Northbound		Southbound		Eastbound		Westbound	
Control,RT	Split Phase	Igno	Split Phase	Inclu	Permitted	Inclu	Protected	Inclu

Movement	NB L	NB T	NB R	SB L	SB T	SB R	EB L	EB T	EB R	WB L	WB T	WB R
Min Green	0	0	0	0	0	0	0	0	0	0	0	0
Base Vol	150	0	340	0	0	0	0	870	170	380	770	0
G/C	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Volume	165	0	0	0	0	0	0	870	170	380	770	0
Sat/Lane	1425	1425	1425	1425	1425	1425	1425	1425	1425	1425	1425	1425
SatAdj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes	2.00	0.00	1.00	0.00	1.00	0.00	0.00	2.51	0.49	1.00	2.00	1.00
Saturation	2850	0	1425	0	1425	0	0	3576	699	1425	2850	1425
Vol/Sat	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.24	0.24	0.27	0.27	0.00
CritVolume	83							347		380		
CriticalMove	******							******		******		

Critical Volume/Capacity: 0.568 — Average Delay: xxxxxx — Level Of Service: A

Calculated Cycle Length: 100 seconds — Optimal Cycle Length: 43 seconds — Error Count: 0

Base Alternative — View Log — View Report — Error Level: Normal

Average Delay — Calc Unentered G/C — Edit Volume — Edit Geometry

Φ1 — Φ2 — Φ3

Φ6 — Φ7

Reset — OK — Cancel

TRAFFIX Baseline (2003) Analysis Results Report—Employee PM Peak Hour

Traffix 7.6.0115 (c) 2003 Dowling Assoc. Licensed to R & A, CHICAGO, IL
2003-PM Peak (3:30-4:30 PM) Sun Jan 17, 2005 15:24:48 Page 1-1

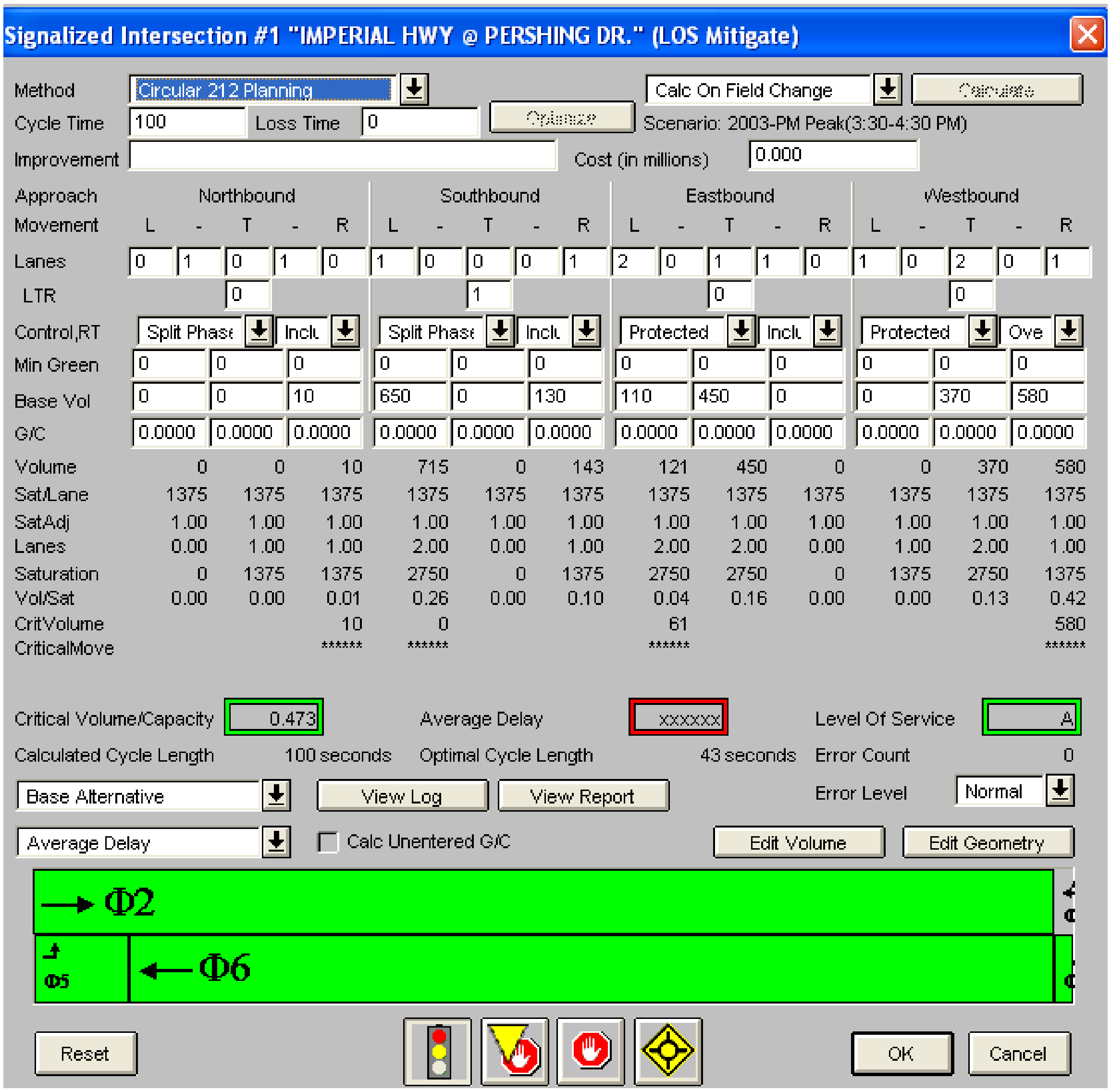
LAX SOUTH AIRFIELD EIR

Impact Analysis Report
Level Of Service

Intersection	LOS	V/C
# 1 IMPERIAL HWY @ PERSHING DR.	A	0.473
# 2 IMPERIAL HWY @MAIN STREET	B	0.601
# 3 IMPERIAL HWY @ SEPULVEDA BL.	F	1.092
# 4 IMPERIAL HWY @ NASH ST.	A	0.333
# 5 IMPERIAL HWY. @ DOUGLAS ST.	A	0.363
# 6 IMPERIAL HWY. @ AVIATION BL.	B	0.681
# 7 IMPERIAL HWY. @ 105 RAMP	B	0.648
# 8 IMPERIAL HWY. @ La CIENEGA BLV	A	0.422
# 9 IMPERIAL HWY. @ 405 NORTH RAMP	A	0.406
# 10 AVIATION BLVD. @ CENTURY BLVD.	D	0.863
# 11 AVIATION BLVD. @ 111TH	A	0.513
# 12 La CIENEGA BLVD. @ 405 S/B RAP	B	0.639
# 13 La CIENEGA BLVD. @ CENTURY BLV	C	0.789
# 14 La CIENEGA BLVD. @ 405 S/B RAM	A	0.502
# 15 La CIENEGA BLVD. @ 104 TH STRE	A	0.379
# 16 La CIENEGA BLVD. @ LENNOX BLVD	A	0.396
# 17 La CIENEGA BLVD. @ 111TH STREE	A	0.407
# 18 La CIENEGA BLVD. @ 405 S/B RAM	A	0.326
# 19 CENTURY BLVD. @ 405 N/B RAMP	A	0.529

Traffix 7.6.0115 (c) 2003 Dowling Assoc. Licensed to R & A, CHICAGO, IL

TRAFFIX Baseline (2003) Employee PM Peak Hour Intersection Summary Reports



Signalized Intersection #1 "IMPERIAL HWY @ PERSHING DR." (LOS Mitigate)

Method: Circular 212 Planning | Calc On Field Change | Calculate

Cycle Time: 100 | Loss Time: 0 | Optimize | Scenario: 2003-PM Peak(3:30-4:30 PM)

Improvement: | Cost (in millions): 0.000

Approach	Northbound					Southbound					Eastbound					Westbound				
Movement	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Lanes	0	1	0	1	0	1	0	0	0	1	2	0	1	1	0	1	0	2	0	1
LTR			0					1					0					0		
Control,RT	Split Phase			Incl.		Split Phase			Incl.		Protected			Incl.		Protected			Ove	

	NB L	NB T	NB R	SB L	SB T	SB R	EB L	EB T	EB R	WB L	WB T	WB R
Min Green	0	0	0	0	0	0	0	0	0	0	0	0
Base Vol	0	0	10	650	0	130	110	450	0	0	370	580
G/C	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Volume	0	0	10	715	0	143	121	450	0	0	370	580
Sat/Lane	1375	1375	1375	1375	1375	1375	1375	1375	1375	1375	1375	1375
SatAdj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes	0.00	1.00	1.00	2.00	0.00	1.00	2.00	2.00	0.00	1.00	2.00	1.00
Saturation	0	1375	1375	2750	0	1375	2750	2750	0	1375	2750	1375
Vol/Sat	0.00	0.00	0.01	0.26	0.00	0.10	0.04	0.16	0.00	0.00	0.13	0.42
CritVolume			10	0			61					580
CriticalMove			******	******			******					******

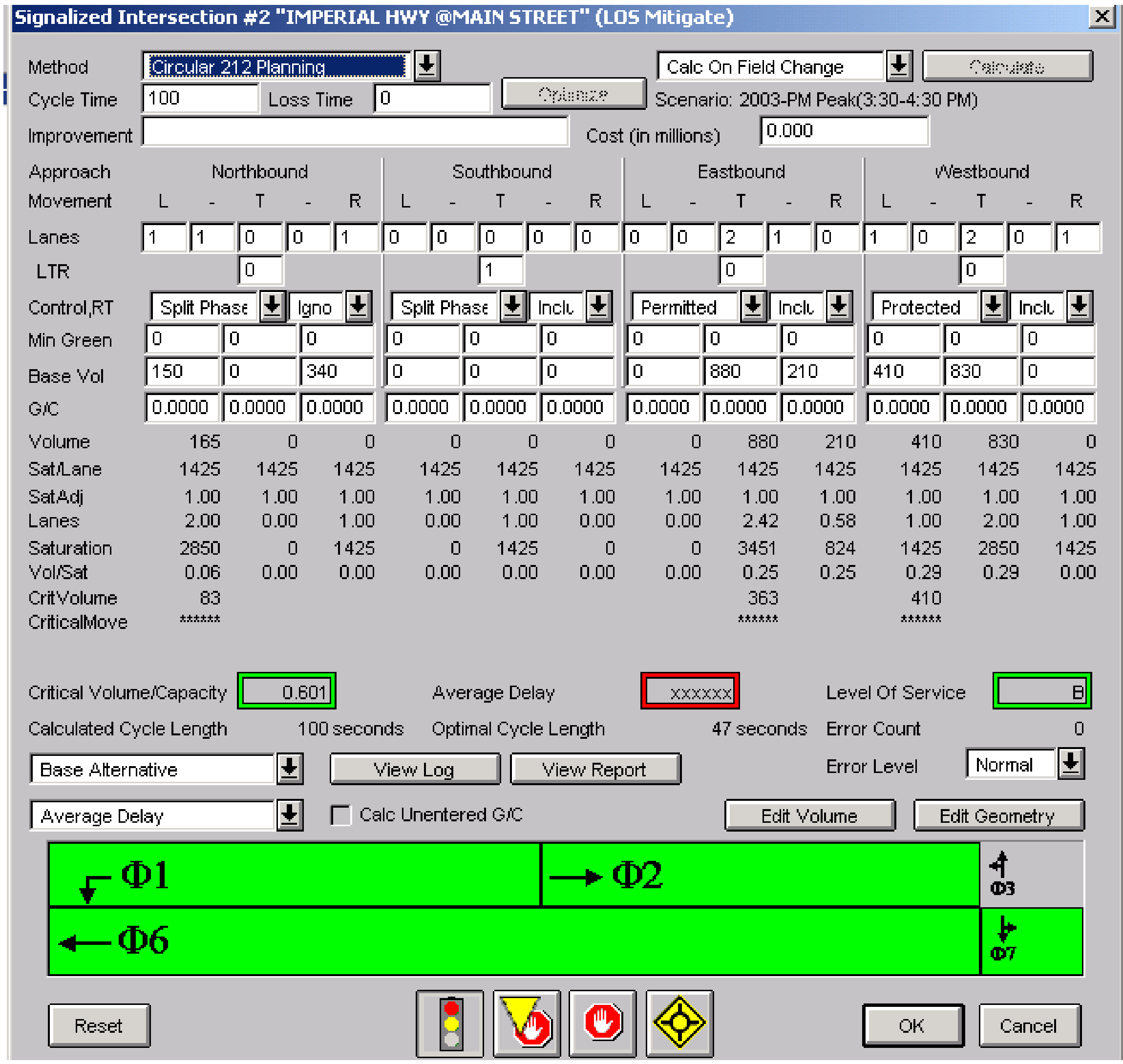
Critical Volume/Capacity: 0.473 | Average Delay: xxxxxx | Level Of Service: A

Calculated Cycle Length: 100 seconds | Optimal Cycle Length: 43 seconds | Error Count: 0

Base Alternative | View Log | View Report | Error Level: Normal

Average Delay | Calc Unentered G/C | Edit Volume | Edit Geometry

Reset | OK | Cancel



Signalized Intersection #2 "IMPERIAL HWY @MAIN STREET" (LOS Mitigate)

Method: Circular 212 Planning — Calc On Field Change — Calculate

Cycle Time: 100 — Loss Time: 0 — Optimize — Scenario: 2003-PM Peak(3:30-4:30 PM)

Improvement: — Cost (in millions): 0.000

Approach	Northbound					Southbound					Eastbound					Westbound				
Movement	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Lanes	1	1	0	0	1	0	0	0	0	0	0	0	2	1	0	1	0	2	0	1
LTR			0					1					0					0		
Control,RT	Split Phase			Igno		Split Phase			Inclu		Permitted			Inclu		Protected			Inclu	

	NB L	NB T	NB R	SB L	SB T	SB R	EB L	EB T	EB R	WB L	WB T	WB R
Min Green	0	0	0	0	0	0	0	0	0	0	0	0
Base Vol	150	0	340	0	0	0	0	880	210	410	830	0
G/C	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Volume	165	0	0	0	0	0	0	880	210	410	830	0
Sat/Lane	1425	1425	1425	1425	1425	1425	1425	1425	1425	1425	1425	1425
SatAdj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes	2.00	0.00	1.00	0.00	1.00	0.00	0.00	2.42	0.58	1.00	2.00	1.00
Saturation	2850	0	1425	0	1425	0	0	3451	824	1425	2850	1425
Vol/Sat	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.25	0.25	0.29	0.29	0.00
CritVolume	83							363		410		
CriticalMove	******							******		******		

Critical Volume/Capacity: 0.601 — Average Delay: xxxxxx — Level Of Service: B

Calculated Cycle Length: 100 seconds — Optimal Cycle Length: 47 seconds — Error Count: 0

Base Alternative — View Log — View Report — Error Level: Normal

Average Delay — Calc Unentered G/C — Edit Volume — Edit Geometry

Reset — OK — Cancel

Signalized Intersection #3 "IMPERIAL HWY @ SEPULVEDA BL." (LOS Mitigate)

Method: Circular 212 Planning — Calc On Field Change — Calculate

Cycle Time: 100 — Loss Time: 0 — Optimize — Scenario: 2003-PM Peak(3:30-4:30 PM)

Improvement: — Cost (in millions): 0.000

Approach	Northbound					Southbound					Eastbound					Westbound				
Movement	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Lanes	1	0	3	0	1	2	0	3	1	0	2	0	3	0	1	2	0	3	0	1
LTR			0					0					0					0		
Control,RT	Protected			Inclu		Protected			Inclu		Protected			Inclu		Protected			Inclu	

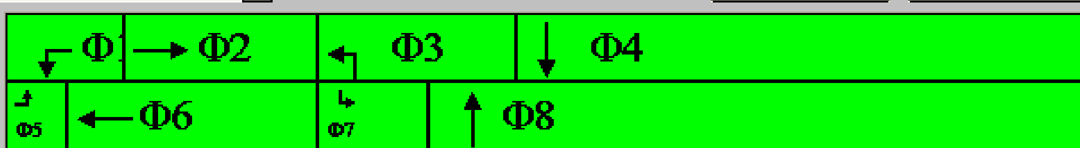
	NB L	NB T	NB R	SB L	SB T	SB R	EB L	EB T	EB R	WB L	WB T	WB R
Min Green	0	0	0	0	0	0	0	0	0	0	0	0
Base Vol	160	1550	910	280	1810	30	160	300	140	160	300	350
G/C	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Volume	160	1550	910	308	1810	30	176	300	140	176	300	350
Sat/Lane	1375	1375	1375	1375	1375	1375	1375	1375	1375	1375	1375	1375
SatAdj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes	1.00	3.00	1.00	2.00	3.93	0.07	2.00	3.00	1.00	2.00	3.00	1.00
Saturation	1375	4125	1375	2750	5410	90	2750	4125	1375	2750	4125	1375
Vol/Sat	0.12	0.38	0.66	0.11	0.33	0.33	0.06	0.07	0.10	0.06	0.07	0.25
CritVolume			910	154			88					350
CriticalMove			******	******			******					******

Critical Volume/Capacity: 1.092 — Average Delay: xxxxxx — Level Of Service: F

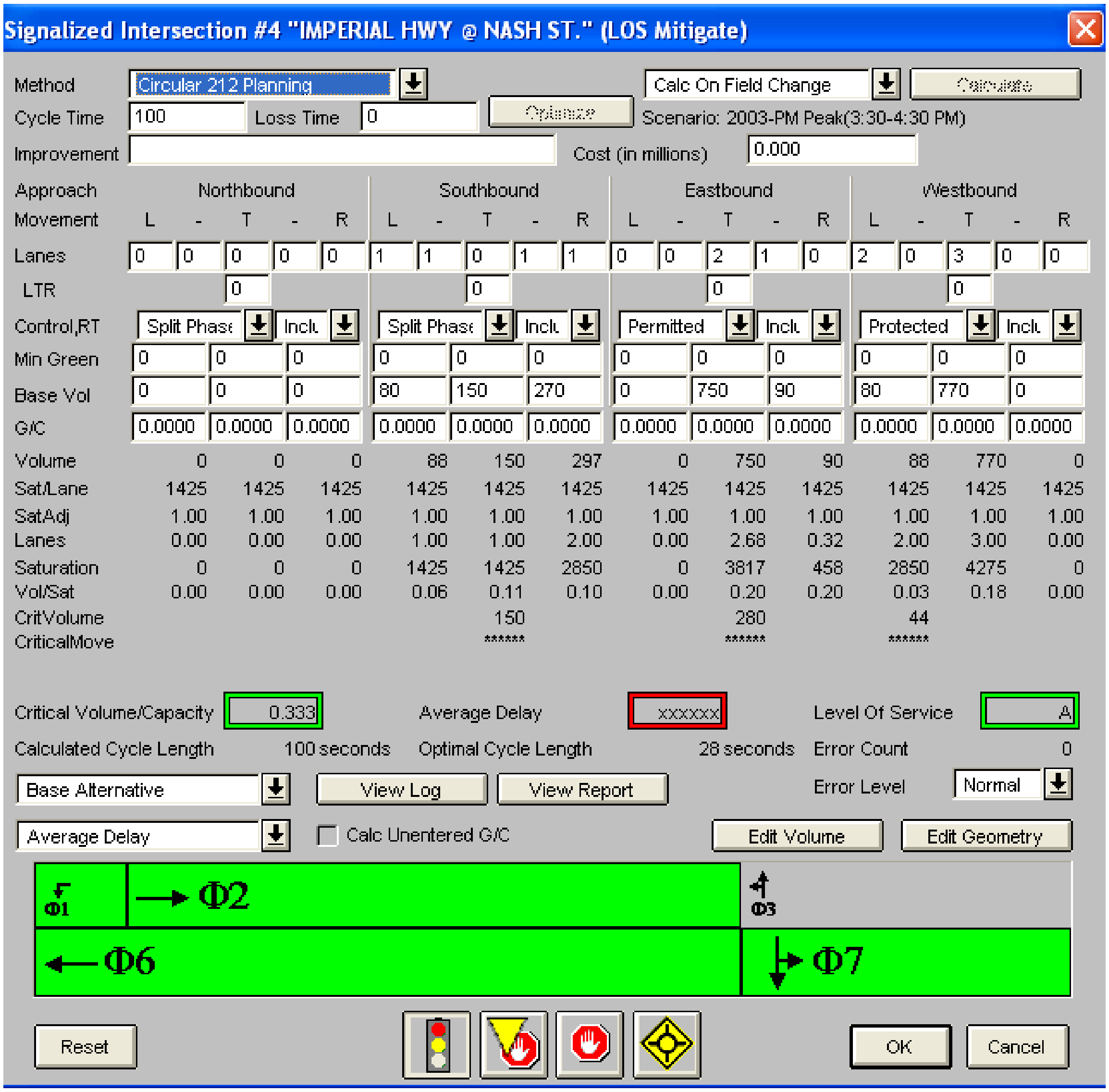
Calculated Cycle Length: 100 seconds — Optimal Cycle Length: 180 seconds — Error Count: 0

Base Alternative — View Log — View Report — Error Level: Normal

Average Delay — Calc Unentered G/C — Edit Volume — Edit Geometry



Reset — OK — Cancel



Signalized Intersection #4 "IMPERIAL HWY @ NASH ST." (LOS Mitigate)

Method: Circular 212 Planning | Calc On Field Change | Calculate
Cycle Time: 100 | Loss Time: 0 | Optimize | Scenario: 2003-PM Peak(3:30-4:30 PM)
Improvement: | Cost (in millions): 0.000

Approach	Northbound			Southbound			Eastbound			Westbound		
Movement	L	T	R	L	T	R	L	T	R	L	T	R
Lanes	0 0	0 0	0	1 1	0 1	1	0 0	2 1	0	2 0	3 0	0
LTR		0			0			0			0	
Control,RT	Split Phase		Inclu	Split Phase		Inclu	Permitted		Inclu	Protected		Inclu
Min Green	0	0	0	0	0	0	0	0	0	0	0	0
Base Vol	0	0	0	80	150	270	0	750	90	80	770	0
G/C	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Volume	0	0	0	88	150	297	0	750	90	88	770	0
Sat/Lane	1425	1425	1425	1425	1425	1425	1425	1425	1425	1425	1425	1425
SatAdj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes	0.00	0.00	0.00	1.00	1.00	2.00	0.00	2.68	0.32	2.00	3.00	0.00
Saturation	0	0	0	1425	1425	2850	0	3817	458	2850	4275	0
Vol/Sat	0.00	0.00	0.00	0.06	0.11	0.10	0.00	0.20	0.20	0.03	0.18	0.00
CritVolume					150			280		44		
CriticalMove					******			******		******		

Critical Volume/Capacity: 0.333 | Average Delay: xxxxxx | Level Of Service: A
Calculated Cycle Length: 100 seconds | Optimal Cycle Length: 28 seconds | Error Count: 0
Base Alternative | View Log | View Report | Error Level: Normal
Average Delay | Calc Unentered G/C | Edit Volume | Edit Geometry

Φ1 Φ2 Φ3
Φ6 Φ7

Reset | OK | Cancel

Signalized Intersection #5 "IMPERIAL HWY. @ DOUGLAS ST." (LOS Mitigate)

Method: Circular 212 Planning | Calc On Field Change | Calculate

Cycle Time: 100 | Loss Time: 0 | Optimize | Scenario: 2003-PM Peak(3:30-4:30 PM)

Improvement: | Cost (in millions): 0.000

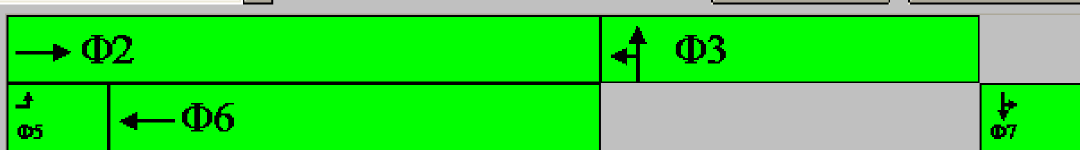
Approach	Northbound					Southbound					Eastbound					Westbound				
Movement	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Lanes	2	0	2	0	2	1	0	0	0	1	1	0	3	0	0	0	0	2	1	0
LTR			0					1					0					0		
Control,RT	Split Phase			Incl		Split Phase			Incl		Protected			Incl		Permitted			Incl	
Min Green	0		0		0	0		0		0	0		0		0	0		0		0
Base Vol	120		20		330	90		0		40	50		730		0	0		630		80
G/C	0.0000		0.0000		0.0000	0.0000		0.0000		0.0000	0.0000		0.0000		0.0000	0.0000		0.0000		0.0000
Volume	132		20		363	99		0		44	50		730		0	0		630		80
Sat/Lane	1425		1425		1425	1425		1425		1425	1425		1425		1425	1425		1425		1425
SatAdj	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00
Lanes	2.00		2.00		2.00	2.00		0.00		1.00	1.00		3.00		0.00	0.00		2.66		0.34
Saturation	2850		2850		2850	2850		0		1425	1425		4275		0	0		3793		482
Vol/Sat	0.05		0.01		0.13	0.03		0.00		0.03	0.04		0.17		0.00	0.00		0.17		0.17
CritVolume					182	50					50							237		
CriticalMove					******	******					******							******		

Critical Volume/Capacity: 0.363 | Average Delay: xxxxxx | Level Of Service: A

Calculated Cycle Length: 100 seconds | Optimal Cycle Length: 29 seconds | Error Count: 0

Base Alternative | View Log | View Report | Error Level: Normal

Average Delay | Calc Unentered G/C | Edit Volume | Edit Geometry



Reset | OK | Cancel

Signalized Intersection #6 "IMPERIAL HWY. @ AVIATION BL." (LOS Mitigate)

Method: Circular 212 Planning | Calc On Field Change | Calculate

Cycle Time: 100 | Loss Time: 0 | Optimize | Scenario: 2003-PM Peak(3:30-4:30 PM)

Improvement: | Cost (in millions): 0.000

Approach	Northbound					Southbound					Eastbound					Westbound				
Movement	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Lanes	2	0	2	0	1	2	0	1	1	1	2	0	2	1	0	2	0	3	0	1
LTR			0					0					0					0		
Control,RT	Protected			Ove		Protected			Ove		Protected			Inclu		Protected			Ove	
Min Green	0		0		0	0		0		0	0		0		0	0		0		0
Base Vol	160		430		370	400		450		130	180		810		230	170		430		400
G/C	0.0000		0.0000		0.0000	0.0000		0.0000		0.0000	0.0000		0.0000		0.0000	0.0000		0.0000		0.0000
Volume	176		430		370	440		450		143	198		810		230	187		430		400
Sat/Lane	1375		1375		1375	1375		1375		1375	1375		1375		1375	1375		1375		1375
SatAdj	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00
Lanes	2.00		2.00		1.00	2.00		2.00		1.00	2.00		2.34		0.66	2.00		3.00		1.00
Saturation	2750		2750		1375	2750		2750		1375	2750		3213		912	2750		4125		1375
Vol/Sat	0.06		0.16		0.27	0.16		0.16		0.10	0.07		0.25		0.25	0.07		0.10		0.29
CritVolume					370	220							347			0				
CriticalMove					******	******							******			******				

Critical Volume/Capacity: 0.681 | Average Delay: xxxxxx | Level Of Service: B

Calculated Cycle Length: 100 seconds | Optimal Cycle Length: 72 seconds | Error Count: 0

Base Alternative | View Log | View Report | Error Level: Normal

Average Delay | Calc Unentered G/C | Edit Volume | Edit Geometry

Φ1 | Φ2 | Φ3 | Φ4

Φ5 | Φ6 | Φ7 | Φ8

Reset | OK | Cancel

Signalized Intersection #7 "IMPERIAL HWY. @ 105 RAMP" (LOS Mitigate)

Method: Circular 212 Planning | Calc On Field Change | Calculate

Cycle Time: 100 | Loss Time: 0 | Optimize | Scenario: 2003-PM Peak(3:30-4:30 PM)

Improvement: | Cost (in millions): 0.000

Approach	Northbound					Southbound					Eastbound					Westbound				
Movement	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Lanes	2	0	0	0	2	0	0	0	0	0	0	0	2	1	1	1	0	3	0	0
LTR			0					0					0					0		

Approach	Northbound			Southbound			Eastbound			Westbound		
Control,RT	Split Phase	Ove		Split Phase	Inclu		Protected	Ove		Protected	Inclu	
Min Green	0	0	0	0	0	0	0	0	0	0	0	0
Base Vol	380	0	210	0	0	0	0	960	660	260	540	0
G/C	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Volume	418	0	231	0	0	0	0	960	726	260	540	0
Sat/Lane	1375	1375	1375	1375	1375	1375	1375	1375	1375	1375	1375	1375
SatAdj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes	2.00	0.00	2.00	0.00	0.00	0.00	0.00	2.28	1.72	1.00	3.00	0.00
Saturation	2750	0	2750	0	0	0	0	3132	2368	1375	4125	0
Vol/Sat	0.15	0.00	0.08	0.00	0.00	0.00	0.00	0.31	0.31	0.19	0.13	0.00
CritVolume	209							421		260		
CriticalMove	******							******		******		

Critical Volume/Capacity: 0.648 | Average Delay: xxxxxx | Level Of Service: B

Calculated Cycle Length: 100 seconds | Optimal Cycle Length: 65 seconds | Error Count: 0

Base Alternative | View Log | View Report | Error Level: Normal

Average Delay | Calc Unentered G/C | Edit Volume | Edit Geometry

Reset | OK | Cancel

Signalized Intersection #8 "IMPERIAL HWY. @ La CIENEGA BLVD." (LOS Mitigate)

Method: Circular 212 Planning | Calc On Field Change | Calculate

Cycle Time: 100 | Loss Time: 0 | Optimize | Scenario: 2003-PM Peak(3:30-4:30 PM)

Improvement: | Cost (in millions): 0.000

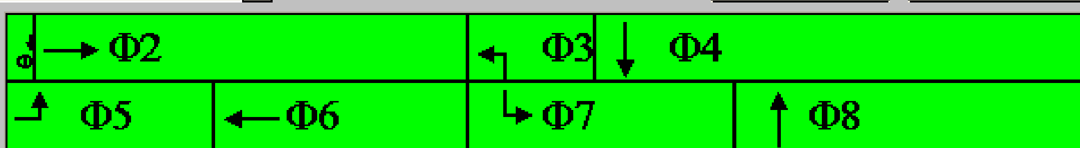
Approach	Northbound			Southbound			Eastbound			Westbound		
Movement	L	T	R	L	T	R	L	T	R	L	T	R
Lanes	2 - 0	1 - 1	1	2 - 0	1 - 1	1	2 - 0	3 - 0	2	2 - 0	3 - 0	2
LTR		0			0			0			0	
Control,RT	Protected		Inclu	Protected		Inclu	Protected		Ove	Protected		Ove
Min Green	0	0	0	0	0	0	0	0	0	0	0	0
Base Vol	100	200	330	260	320	280	200	700	170	30	400	240
G/C	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Volume	110	200	363	286	320	308	220	700	187	33	400	264
Sat/Lane	1375	1375	1375	1375	1375	1375	1375	1375	1375	1375	1375	1375
SatAdj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes	2.00	1.07	1.93	2.00	1.53	1.47	2.00	3.00	2.00	2.00	3.00	2.00
Saturation	2750	1465	2660	2750	2102	2023	2750	4125	2750	2750	4125	2750
Vol/Sat	0.04	0.14	0.14	0.10	0.15	0.15	0.08	0.17	0.07	0.01	0.10	0.10
CritVolume		188		143				233		17		
CriticalMove		******		******				******		******		

Critical Volume/Capacity: 0.422 | Average Delay: xxxxxx | Level Of Service: A

Calculated Cycle Length: 100 seconds | Optimal Cycle Length: 39 seconds | Error Count: 0

Base Alternative | View Log | View Report | Error Level: Normal

Average Delay | Calc Unentered G/C | Edit Volume | Edit Geometry



Reset | OK | Cancel

Signalized Intersection #9 "IMPERIAL HWY. @ 405 NORTH RAMP" (LOS Mitigate)

Method: Circular 212 Planning — Calc On Field Change — Calculate

Cycle Time: 100 — Loss Time: 0 — Optimize — Scenario: 2003-PM Peak(3:30-4:30 PM)

Improvement: — Cost (in millions): 0.000

Approach	Northbound			Southbound			Eastbound			Westbound		
Movement	L	T	R	L	T	R	L	T	R	L	T	R
Lanes	1 / 0	0 / 0	0	0 / 0	0 / 0	0	0 / 0	2 / 1	1	0 / 0	2 / 1	1
LTR		1			0			0			0	
Control,RT	Split Phase		Inclu	Split Phase		Inclu	Permitted		Igno	Permitted		Igno
Min Green	0	0	0	0	0	0	0	0	0	0	0	0
Base Vol	200	0	190	0	0	0	0	1120	180	0	440	160
G/C	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Volume	220	0	190	0	0	0	0	1120	0	0	440	0
Sat/Lane	1425	1425	1425	1425	1425	1425	1425	1425	1425	1425	1425	1425
SatAdj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes	1.07	0.00	0.93	0.00	0.00	0.00	0.00	3.00	1.00	0.00	3.00	1.00
Saturation	1529	0	1321	0	0	0	0	4275	1425	0	4275	1425
Vol/Sat	0.14	0.00	0.14	0.00	0.00	0.00	0.00	0.26	0.00	0.00	0.10	0.00
CritVolume	205							373		0		
CriticalMove	******							******		******		

Critical Volume/Capacity	0.406	Average Delay	xxxxxx	Level Of Service	A
Calculated Cycle Length	100 seconds	Optimal Cycle Length	31 seconds	Error Count	0
				Error Level	Normal

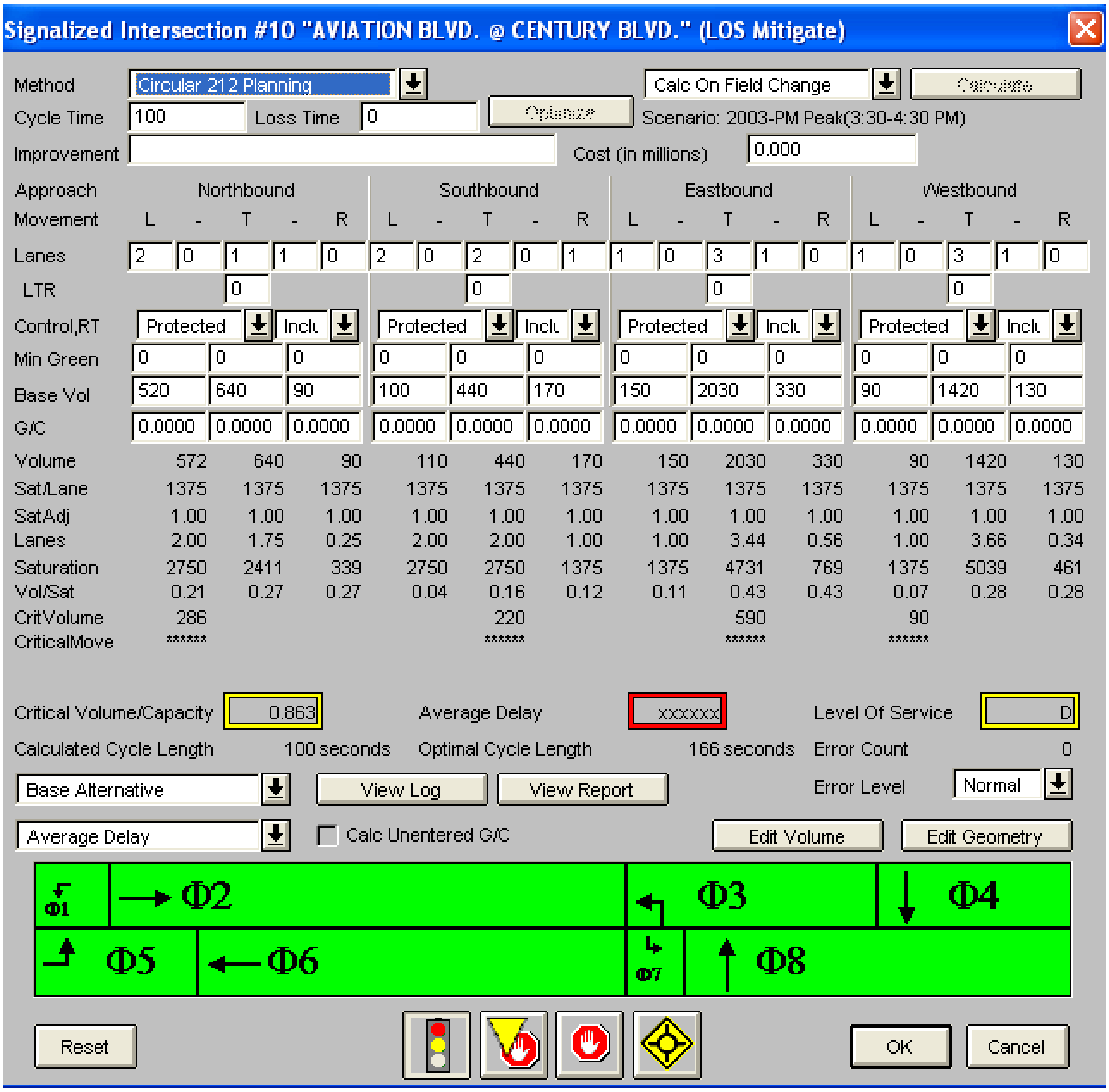
Base Alternative — View Log — View Report

Average Delay — Calc Unentered G/C — Edit Volume — Edit Geometry

Φ2 — Φ3

Φ6 — Φ7

Reset — OK — Cancel



Signalized Intersection #10 "AVIATION BLVD. @ CENTURY BLVD." (LOS Mitigate)

Method: Circular 212 Planning | Calc On Field Change | Calculate

Cycle Time: 100 | Loss Time: 0 | Optimize | Scenario: 2003-PM Peak(3:30-4:30 PM)

Improvement: | Cost (in millions): 0.000

Approach	Northbound					Southbound					Eastbound					Westbound				
Movement	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Lanes	2	0	1	1	0	2	0	2	0	1	1	0	3	1	0	1	0	3	1	0
LTR			0					0					0					0		

Approach	NB L	NB T	NB R	SB L	SB T	SB R	EB L	EB T	EB R	WB L	WB T	WB R
Control,RT	Protected		Inclu	Protected		Inclu	Protected		Inclu	Protected		Inclu
Min Green	0	0	0	0	0	0	0	0	0	0	0	0
Base Vol	520	640	90	100	440	170	150	2030	330	90	1420	130
G/C	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Volume	572	640	90	110	440	170	150	2030	330	90	1420	130
Sat/Lane	1375	1375	1375	1375	1375	1375	1375	1375	1375	1375	1375	1375
SatAdj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes	2.00	1.75	0.25	2.00	2.00	1.00	1.00	3.44	0.56	1.00	3.66	0.34
Saturation	2750	2411	339	2750	2750	1375	1375	4731	769	1375	5039	461
Vol/Sat	0.21	0.27	0.27	0.04	0.16	0.12	0.11	0.43	0.43	0.07	0.28	0.28
CritVolume	286				220			590		90		
CriticalMove	******				******			******		******		

Critical Volume/Capacity: 0.863 | Average Delay: xxxxxx | Level Of Service: D

Calculated Cycle Length: 100 seconds | Optimal Cycle Length: 166 seconds | Error Count: 0

Base Alternative | View Log | View Report | Error Level: Normal

Average Delay | Calc Unentered G/C | Edit Volume | Edit Geometry

Φ1 Φ2 Φ3 Φ4

Φ5 Φ6 Φ7 Φ8

Reset | OK | Cancel

Signalized Intersection #11 "AVIATION BLVD. @ 111TH" (LOS Mitigate)

Method: Circular 212 Planning | Calc On Field Change | Calculate

Cycle Time: 100 | Loss Time: 0 | Optimize | Scenario: 2003-PM Peak(3:30-4:30 PM)

Improvement: | Cost (in millions): 0.000

Approach	Northbound					Southbound					Eastbound					Westbound				
Movement	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Lanes	1	0	1	1	0	1	0	1	1	0	1	0	0	1	0	1	0	1	1	0
LTR			0					0					0					0		
Control,RT	Permitted			Inclu		Permitted			Inclu		Permitted			Inclu		Permitted			Inclu	

	NB L	NB T	NB R	SB L	SB T	SB R	EB L	EB T	EB R	WB L	WB T	WB R
Min Green	0	0	0	0	0	0	0	0	0	0	0	0
Base Vol	20	890	90	120	910	70	90	70	20	70	50	50
G/C	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Volume	20	890	90	120	910	70	90	70	20	70	50	50
Sat/Lane	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500
SatAdj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes	1.00	1.82	0.18	1.00	1.86	0.14	1.00	0.78	0.22	1.00	1.00	1.00
Saturation	1500	2724	276	1500	2786	214	1500	1167	333	1500	1500	1500
Vol/Sat	0.01	0.33	0.33	0.08	0.33	0.33	0.06	0.06	0.06	0.05	0.03	0.03
CritVolume		490		120				90		70		
CriticalMove		******		******				******		******		

Critical Volume/Capacity: 0.513 | Average Delay: xxxxxx | Level Of Service: A

Calculated Cycle Length: 100 seconds | Optimal Cycle Length: 30 seconds | Error Count: 0

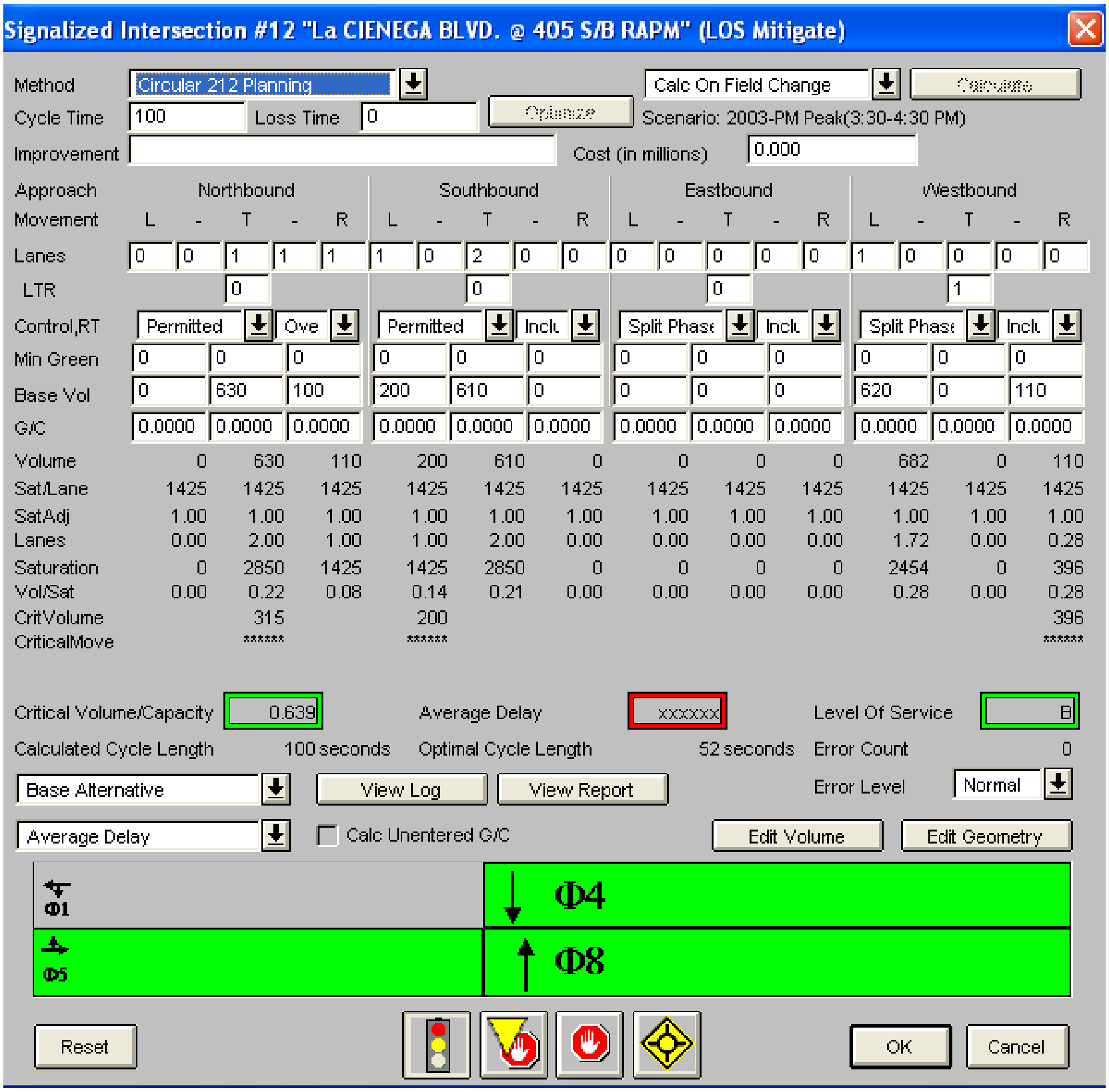
Base Alternative | View Log | View Report | Error Level: Normal

Average Delay | Calc Unentered G/C | Edit Volume | Edit Geometry

Φ2 | Φ4

Φ6 | Φ8

Reset | OK | Cancel



Signalized Intersection #12 "La CIENEGA BLVD. @ 405 S/B RAPM" (LOS Mitigate)

Method: Circular 212 Planning | Calc On Field Change | Calculate

Cycle Time: 100 | Loss Time: 0 | Optimize | Scenario: 2003-PM Peak(3:30-4:30 PM)

Improvement: | Cost (in millions): 0.000

Approach	Northbound					Southbound					Eastbound					Westbound				
Movement	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Lanes	0	0	1	1	1	1	0	2	0	0	0	0	0	0	0	1	0	0	0	0
LTR			0					0					0					1		

	Northbound			Southbound			Eastbound			Westbound		
Control,RT	Permitted		Ove	Permitted		Inclu	Split Phase		Inclu	Split Phase		Inclu
Min Green	0	0	0	0	0	0	0	0	0	0	0	0
Base Vol	0	630	100	200	610	0	0	0	0	620	0	110
G/C	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Volume	0	630	110	200	610	0	0	0	0	682	0	110
Sat/Lane	1425	1425	1425	1425	1425	1425	1425	1425	1425	1425	1425	1425
SatAdj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes	0.00	2.00	1.00	1.00	2.00	0.00	0.00	0.00	0.00	1.72	0.00	0.28
Saturation	0	2850	1425	1425	2850	0	0	0	0	2454	0	396
Vol/Sat	0.00	0.22	0.08	0.14	0.21	0.00	0.00	0.00	0.00	0.28	0.00	0.28
CritVolume		315		200								396
CriticalMove		******		******								******

Critical Volume/Capacity: 0.639 | Average Delay: xxxxxx | Level Of Service: B

Calculated Cycle Length: 100 seconds | Optimal Cycle Length: 52 seconds | Error Count: 0

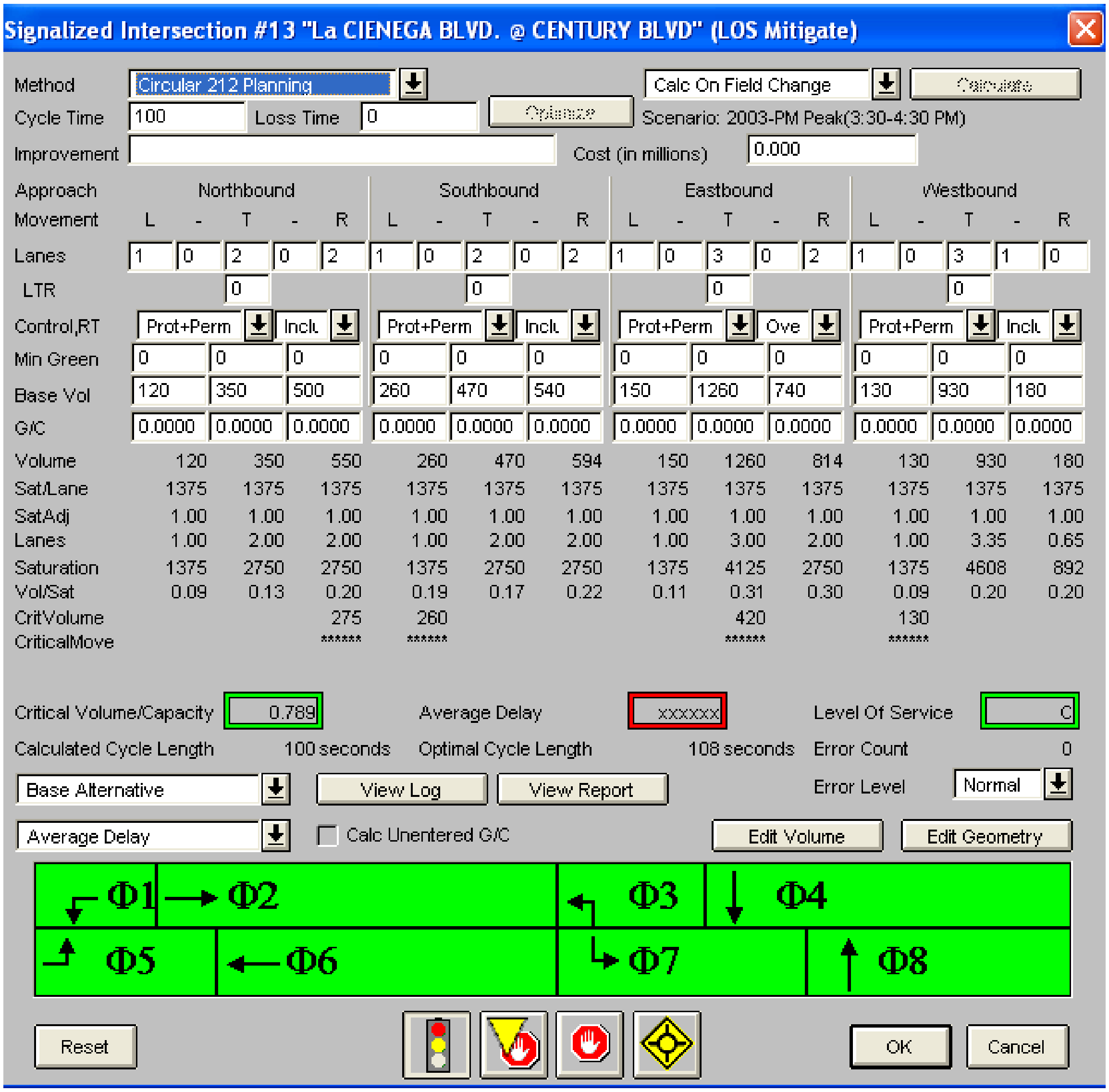
Base Alternative | View Log | View Report | Error Level: Normal

Average Delay | Calc Unentered G/C | Edit Volume | Edit Geometry

Φ1 | Φ4

Φ5 | Φ8

Reset | OK | Cancel



Signalized Intersection #13 "La CIENEGA BLVD. @ CENTURY BLVD" (LOS Mitigate)

Method: Circular 212 Planning | Calc On Field Change | Calculate

Cycle Time: 100 | Loss Time: 0 | Optimize | Scenario: 2003-PM Peak(3:30-4:30 PM)

Improvement: | Cost (in millions): 0.000

Approach	Northbound			Southbound			Eastbound			Westbound		
Movement	L	T	R	L	T	R	L	T	R	L	T	R
Lanes	1 0	2 0	2	1 0	2 0	2	1 0	3 0	2	1 0	3 1	0
LTR		0			0			0			0	
Control,RT	Prot+Perm		Inclu	Prot+Perm		Inclu	Prot+Perm		Ove	Prot+Perm		Inclu
Min Green	0	0	0	0	0	0	0	0	0	0	0	0
Base Vol	120	350	500	260	470	540	150	1260	740	130	930	180
G/C	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Volume	120	350	550	260	470	594	150	1260	814	130	930	180
Sat/Lane	1375	1375	1375	1375	1375	1375	1375	1375	1375	1375	1375	1375
SatAdj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes	1.00	2.00	2.00	1.00	2.00	2.00	1.00	3.00	2.00	1.00	3.35	0.65
Saturation	1375	2750	2750	1375	2750	2750	1375	4125	2750	1375	4608	892
Vol/Sat	0.09	0.13	0.20	0.19	0.17	0.22	0.11	0.31	0.30	0.09	0.20	0.20
CritVolume			275	260				420		130		
CriticalMove			******	******				******		******		

Critical Volume/Capacity: 0.789 | Average Delay: xxxxxx | Level Of Service: C

Calculated Cycle Length: 100 seconds | Optimal Cycle Length: 108 seconds | Error Count: 0

Base Alternative | View Log | View Report | Error Level: Normal

Average Delay | Calc Unentered G/C | Edit Volume | Edit Geometry

Reset | OK | Cancel

Signalized Intersection #14 "La CIENEGA BLVD. @ 405 S/B RAMP" (LOS Mitigate)

Method: Circular 212 Planning | Calc On Field Change | Calculate

Cycle Time: 100 | Loss Time: 0 | Optimize | Scenario: 2003-PM Peak(3:30-4:30 PM)

Improvement: | Cost (in millions): 0.000

Approach	Northbound					Southbound					Eastbound					Westbound				
Movement	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Lanes	0	0	1	1	0	2	0	2	0	0	0	0	0	0	0	0	0	0	0	2
LTR			0					0					0					0		

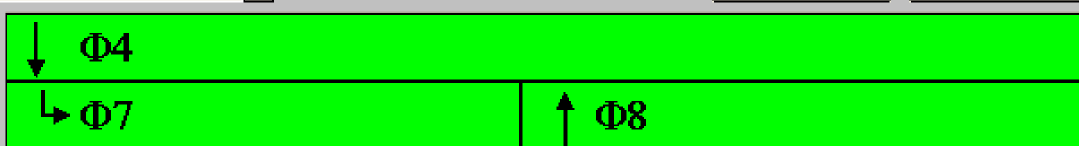
	Northbound			Southbound			Eastbound			Westbound		
Control,RT	Protected		Inclu	Protected		Inclu	Split Phase		Inclu	Split Phase		Ove
Min Green	0	0	0	0	0	0	0	0	0	0	0	0
Base Vol	0	670	50	600	700	0	0	0	0	0	0	290
G/C	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Volume	0	670	50	660	700	0	0	0	0	0	0	319
Sat/Lane	1375	1375	1375	1375	1375	1375	1375	1375	1375	1375	1375	1375
SatAdj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes	0.00	1.86	0.14	2.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	2.00
Saturation	0	2559	191	2750	2750	0	0	0	0	0	0	2750
Vol/Sat	0.00	0.26	0.26	0.24	0.25	0.00	0.00	0.00	0.00	0.00	0.00	0.12
CritVolume		360		330							0	
CriticalMove		******		******							******	

Critical Volume/Capacity: 0.502 | Average Delay: xxxxxx | Level Of Service: A

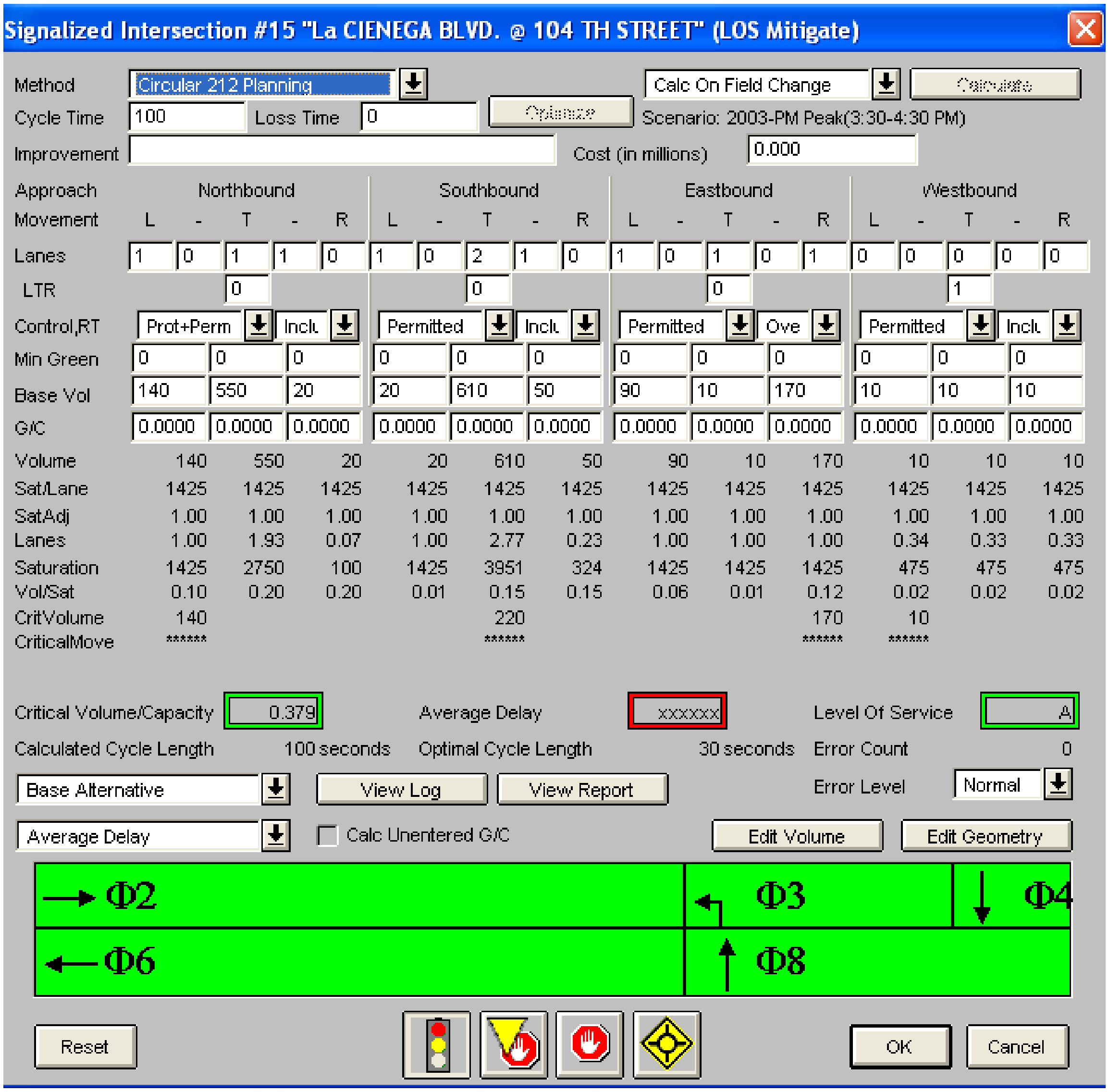
Calculated Cycle Length: 100 seconds | Optimal Cycle Length: 46 seconds | Error Count: 0

Base Alternative | View Log | View Report | Error Level: Normal

Average Delay | Calc Unentered G/C | Edit Volume | Edit Geometry



Reset | OK | Cancel



Signalized Intersection #15 "La CIENEGA BLVD. @ 104 TH STREET" (LOS Mitigate)

Method: Circular 212 Planning — Calc On Field Change — Calculate

Cycle Time: 100 — Loss Time: 0 — Optimize — Scenario: 2003-PM Peak(3:30-4:30 PM)

Improvement: — Cost (in millions): 0.000

Approach	Northbound					Southbound					Eastbound					Westbound				
Movement	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Lanes	1	0	1	1	0	1	0	2	1	0	1	0	1	0	1	0	0	0	0	0
LTR			0					0					0					1		

	NB L	NB T	NB R	SB L	SB T	SB R	EB L	EB T	EB R	WB L	WB T	WB R
Control,RT	Prot+Perm		Inclu	Permitted		Inclu	Permitted		Ove	Permitted		Inclu
Min Green	0	0	0	0	0	0	0	0	0	0	0	0
Base Vol	140	550	20	20	610	50	90	10	170	10	10	10
G/C	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Volume	140	550	20	20	610	50	90	10	170	10	10	10
Sat/Lane	1425	1425	1425	1425	1425	1425	1425	1425	1425	1425	1425	1425
SatAdj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes	1.00	1.93	0.07	1.00	2.77	0.23	1.00	1.00	1.00	0.34	0.33	0.33
Saturation	1425	2750	100	1425	3951	324	1425	1425	1425	475	475	475
Vol/Sat	0.10	0.20	0.20	0.01	0.15	0.15	0.06	0.01	0.12	0.02	0.02	0.02
CritVolume	140				220				170	10		
CriticalMove	******				******				******	******		

Critical Volume/Capacity: 0.379 — Average Delay: xxxxxx — Level Of Service: A

Calculated Cycle Length: 100 seconds — Optimal Cycle Length: 30 seconds — Error Count: 0

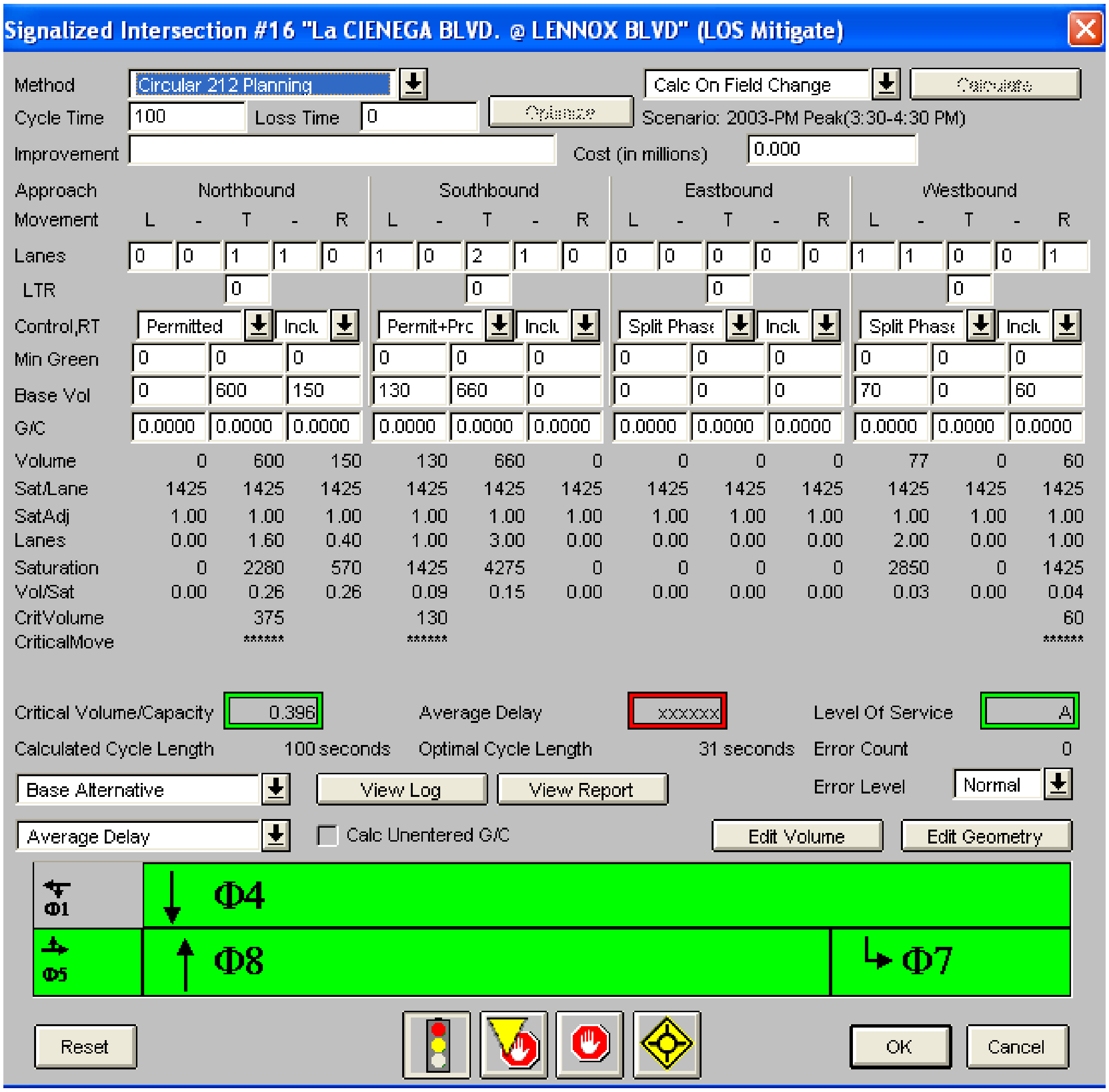
Base Alternative — View Log — View Report — Error Level: Normal

Average Delay — Calc Unentered G/C — Edit Volume — Edit Geometry

Φ2 — Φ3 — Φ4

Φ6 — Φ8

Reset — OK — Cancel



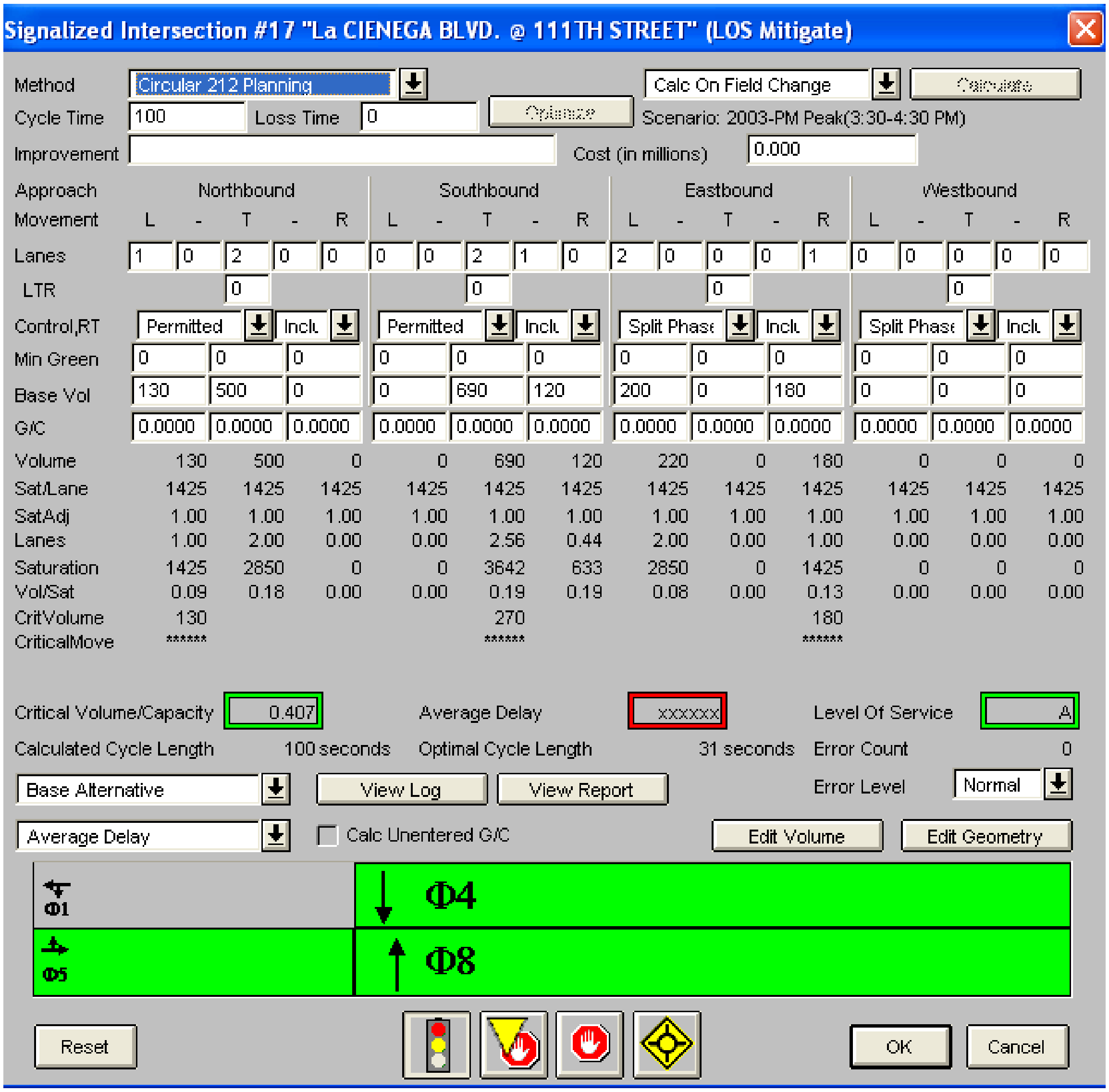
Signalized Intersection #16 "La CIENEGA BLVD. @ LENNOX BLVD" (LOS Mitigate)

Method: Circular 212 Planning | Calc On Field Change | Calculate
Cycle Time: 100 | Loss Time: 0 | Optimize | Scenario: 2003-PM Peak(3:30-4:30 PM)
Improvement: | Cost (in millions): 0.000

Lanes: 0 0 1 1 0 | 1 0 2 1 0 | 0 0 0 0 0 | 1 1 0 0 1
LTR: 0 | 0 | 0 | 0
Control,RT: Permitted, Inclu | Permit+Prot, Inclu | Split Phase, Inclu | Split Phase, Inclu

Approach	Northbound			Southbound			Eastbound			Westbound		
Movement	L	T	R	L	T	R	L	T	R	L	T	R
Min Green	0	0	0	0	0	0	0	0	0	0	0	0
Base Vol	0	600	150	130	660	0	0	0	0	70	0	60
G/C	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Volume	0	600	150	130	660	0	0	0	0	77	0	60
Sat/Lane	1425	1425	1425	1425	1425	1425	1425	1425	1425	1425	1425	1425
SatAdj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes	0.00	1.60	0.40	1.00	3.00	0.00	0.00	0.00	0.00	2.00	0.00	1.00
Saturation	0	2280	570	1425	4275	0	0	0	0	2850	0	1425
Vol/Sat	0.00	0.26	0.26	0.09	0.15	0.00	0.00	0.00	0.00	0.03	0.00	0.04
CritVolume		375		130								60
CriticalMove		******		******								******

Critical Volume/Capacity: 0.396 | Average Delay: xxxxxx | Level Of Service: A
Calculated Cycle Length: 100 seconds | Optimal Cycle Length: 31 seconds | Error Count: 0
Base Alternative | View Log | View Report | Error Level: Normal
Average Delay | Calc Unentered G/C | Edit Volume | Edit Geometry



Signalized Intersection #17 "La CIENEGA BLVD. @ 111TH STREET" (LOS Mitigate)

Method: Circular 212 Planning — Calc On Field Change — Calculate

Cycle Time: 100 — Loss Time: 0 — Optimize — Scenario: 2003-PM Peak(3:30-4:30 PM)

Improvement: — Cost (in millions): 0.000

Approach	Northbound					Southbound					Eastbound					Westbound				
Movement	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Lanes	1	0	2	0	0	0	0	2	1	0	2	0	0	0	1	0	0	0	0	0
LTR			0					0					0					0		
Control,RT	Permitted				Incl.	Permitted				Incl.	Split Phase				Incl.	Split Phase				Incl.

	NB L	NB T	NB R	SB L	SB T	SB R	EB L	EB T	EB R	WB L	WB T	WB R
Min Green	0	0	0	0	0	0	0	0	0	0	0	0
Base Vol	130	500	0	0	690	120	200	0	180	0	0	0
G/C	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Volume	130	500	0	0	690	120	220	0	180	0	0	0
Sat/Lane	1425	1425	1425	1425	1425	1425	1425	1425	1425	1425	1425	1425
SatAdj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes	1.00	2.00	0.00	0.00	2.56	0.44	2.00	0.00	1.00	0.00	0.00	0.00
Saturation	1425	2850	0	0	3642	633	2850	0	1425	0	0	0
Vol/Sat	0.09	0.18	0.00	0.00	0.19	0.19	0.08	0.00	0.13	0.00	0.00	0.00
CritVolume	130				270				180			
CriticalMove	******				******				******			

Critical Volume/Capacity: 0.407 — Average Delay: xxxxxx — Level Of Service: A

Calculated Cycle Length: 100 seconds — Optimal Cycle Length: 31 seconds — Error Count: 0

Base Alternative — View Log — View Report — Error Level: Normal

Average Delay — Calc Unentered G/C — Edit Volume — Edit Geometry

Φ1 Φ4

Φ5 Φ8

Reset — OK — Cancel

Signalized Intersection #18 "La CIENEGA BLVD. @ 405 S/B RAMP" (LOS Mitigate)

Method: Circular 212 Planning — Calc On Field Change — Calculate

Cycle Time: 100 — Loss Time: 0 — Optimize — Scenario: 2003-PM Peak(3:30-4:30 PM)

Improvement: — Cost (in millions): 0.000

Approach	Northbound					Southbound					Eastbound					Westbound				
Movement	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Lanes	1	0	2	0	1	1	0	2	1	0	0	0	0	0	0	2	0	0	0	1
LTR			0					0					0					0		

Control,RT	Permitted	Ove	Protected	Inclu	Split Phase	Inclu	Split Phase	Inclu

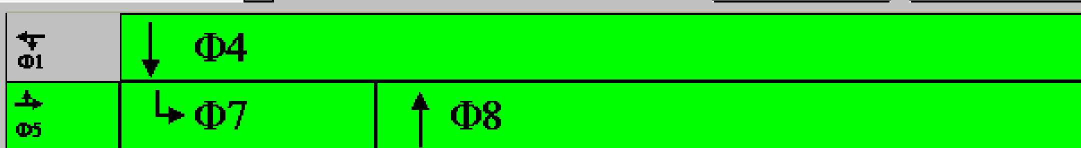
	NB L	NB T	NB R	SB L	SB T	SB R	EB L	EB T	EB R	WB L	WB T	WB R
Min Green	0	0	0	0	0	0	0	0	0	0	0	0
Base Vol	0	610	70	110	760	0	0	0	0	70	0	50
G/C	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Volume	0	610	70	110	760	0	0	0	0	77	0	50
Sat/Lane	1425	1425	1425	1425	1425	1425	1425	1425	1425	1425	1425	1425
SatAdj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes	1.00	2.00	1.00	1.00	3.00	0.00	0.00	0.00	0.00	2.00	0.00	1.00
Saturation	1425	2850	1425	1425	4275	0	0	0	0	2850	0	1425
Vol/Sat	0.00	0.21	0.05	0.08	0.18	0.00	0.00	0.00	0.00	0.03	0.00	0.04
CritVolume		305		110								50
CriticalMove		******		******								******

Critical Volume/Capacity: 0.326 — Average Delay: xxxxxx — Level Of Service: A

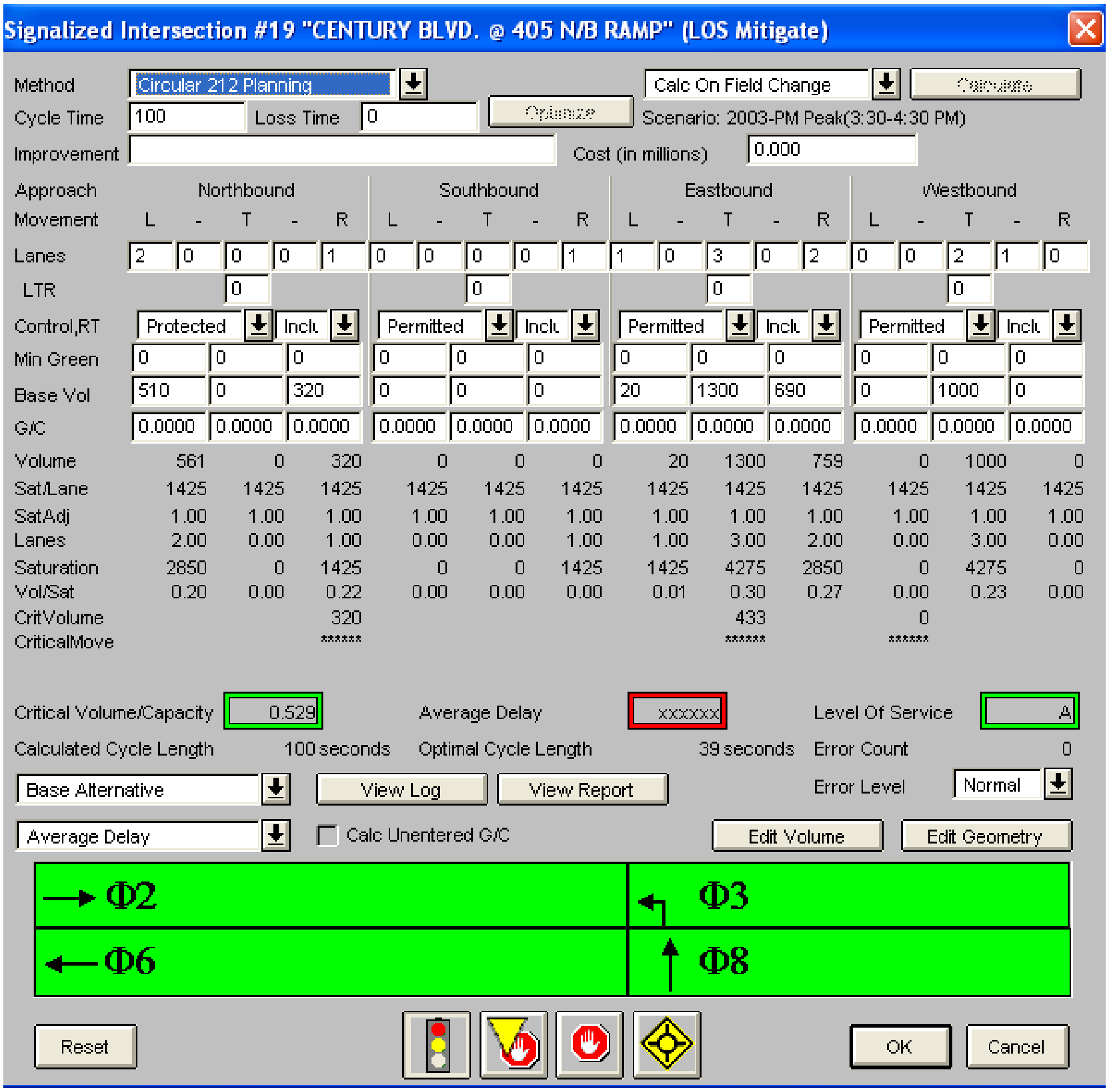
Calculated Cycle Length: 100 seconds — Optimal Cycle Length: 28 seconds — Error Count: 0

Base Alternative — View Log — View Report — Error Level: Normal

Average Delay — Calc Unentered G/C — Edit Volume — Edit Geometry



Reset — OK — Cancel



Signalized Intersection #19 "CENTURY BLVD. @ 405 N/B RAMP" (LOS Mitigate)

Method: Circular 212 Planning | Calc On Field Change | Calculate

Cycle Time: 100 | Loss Time: 0 | Optimize | Scenario: 2003-PM Peak(3:30-4:30 PM)

Improvement: | Cost (in millions): 0.000

Approach	Northbound					Southbound					Eastbound					Westbound				
Movement	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Lanes	2	0	0	0	1	0	0	0	0	1	1	0	3	0	2	0	0	2	1	0
LTR			0					0					0					0		

Approach	NB L	NB T	NB R	SB L	SB T	SB R	EB L	EB T	EB R	WB L	WB T	WB R
Control,RT	Protected		Inclu	Permitted		Inclu	Permitted		Inclu	Permitted		Inclu
Min Green	0	0	0	0	0	0	0	0	0	0	0	0
Base Vol	510	0	320	0	0	0	20	1300	690	0	1000	0
G/C	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Volume	561	0	320	0	0	0	20	1300	759	0	1000	0
Sat/Lane	1425	1425	1425	1425	1425	1425	1425	1425	1425	1425	1425	1425
SatAdj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes	2.00	0.00	1.00	0.00	0.00	1.00	1.00	3.00	2.00	0.00	3.00	0.00
Saturation	2850	0	1425	0	0	1425	1425	4275	2850	0	4275	0
Vol/Sat	0.20	0.00	0.22	0.00	0.00	0.00	0.01	0.30	0.27	0.00	0.23	0.00
CritVolume			320					433		0		
CriticalMove			******					******		******		

Critical Volume/Capacity: 0.529 | Average Delay: xxxxxx | Level Of Service: A

Calculated Cycle Length: 100 seconds | Optimal Cycle Length: 39 seconds | Error Count: 0

Base Alternative | View Log | View Report | Error Level: Normal

Average Delay | Calc Unentered G/C | Edit Volume | Edit Geometry

Φ2 | Φ3

Φ6 | Φ8

Reset | OK | Cancel

TRAFFIX Adjusted Baseline (2005) Analysis Results Report—Employee AM Peak Hour

Traffix 7.6.0115 (c) 2003 Dowling Assoc. Licensed to R & A, CHICAGO, IL
2005-AM Peak (6:00-7:00 AM) Sun Jan 17, 2005 15:28:10 Page 1-1

LAX SOUTH AIRFIELD EIR

Impact Analysis Report
Level Of Service

Intersection	LOS	V/C
# 1 IMPERIAL HWY @ PERSHING DR.	B	0.613
# 2 IMPERIAL HWY @MAIN STREET	A	0.427
# 3 IMPERIAL HWY @ SEPULVEDA BL.	D	0.820
# 4 IMPERIAL HWY @ NASH ST.	B	0.645
# 5 IMPERIAL HWY. @ DOUGLAS ST.	A	0.194
# 6 IMPERIAL HWY. @ AVIATION BL.	C	0.706
# 7 IMPERIAL HWY. @ 105 RAMP	A	0.515
# 8 IMPERIAL HWY. @ La CIENEGA BLV	A	0.256
# 9 IMPERIAL HWY. @ 405 NORTH RAMP	A	0.225
# 10 AVIATION BLVD. @ CENTURY BLVD.	C	0.731
# 11 AVIATION BLVD. @ 111TH	A	0.543
# 12 La CIENEGA BLVD. @ 405 S/B RAP	A	0.552
# 13 La CIENEGA BLVD. @ CENTURY BLV	B	0.695
# 14 La CIENEGA BLVD. @ 405 S/B RAM	A	0.275
# 15 La CIENEGA BLVD. @ 104 TH STRE	A	0.379
# 16 La CIENEGA BLVD. @ LENNOX BLVD	A	0.260
# 17 La CIENEGA BLVD. @ 111TH STREE	A	0.239
# 18 La CIENEGA BLVD. @ 405 S/B RAM	A	0.267
# 19 CENTURY BLVD. @ 405 N/B RAMP	C	0.746

Traffix 7.6.0115 (c) 2003 Dowling Assoc. Licensed to R & A, CHICAGO, IL

TRAFFIX Adjusted Baseline (2005) Employee AM Peak Hour Intersection Summary Reports

Signalized Intersection #1 "IMPERIAL HWY @ PERSHING DR." (LOS Mitigate)

Method: Circular 212 Planning — Calc On Field Change — Calculate

Cycle Time: 100 — Loss Time: 0 — Optimize — Scenario: 2005-AM Peak(6:00-7:00 AM)

Improvement: — Cost (in millions): 0.000

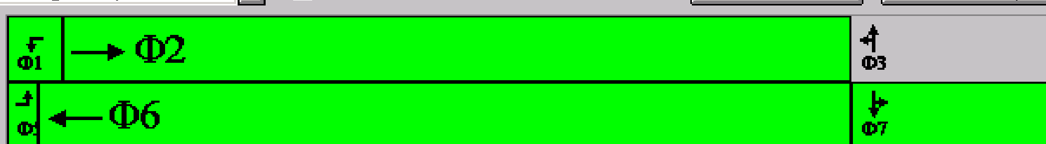
Approach	Northbound			Southbound			Eastbound			Westbound		
Movement	L	T	R	L	T	R	L	T	R	L	T	R
Lanes	0 1	0 1	0	1 0	0 0	1	2 0	1 1	0	1 0	2 0	1
LTR		0			1			0			0	
Control,RT	Split Phase		Inclu	Split Phase		Inclu	Protected		Inclu	Protected		Ove
Min Green	0	0	0	0	0	0	0	0	0	0	0	0
Base Vol	0	0	0	360	0	50	60	270	0	10	340	810
G/C	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Volume	0	0	0	396	0	55	66	270	0	10	340	810
Sat/Lane	1375	1375	1375	1375	1375	1375	1375	1375	1375	1375	1375	1375
SatAdj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes	0.00	2.00	0.00	2.00	0.00	1.00	2.00	2.00	0.00	1.00	2.00	1.00
Saturation	0	2750	0	2750	0	1375	2750	2750	0	1375	2750	1375
Vol/Sat	0.00	0.00	0.00	0.14	0.00	0.04	0.02	0.10	0.00	0.01	0.12	0.59
CritVolume				0			33					810
CriticalMove				******			******					******

Critical Volume/Capacity: 0.613 — Average Delay: xxxxxx — Level Of Service: B

Calculated Cycle Length: 100 seconds — Optimal Cycle Length: 94 seconds — Error Count: 0

Base Alternative — View Log — View Report — Error Level: Normal

Average Delay — Calc Unentered G/C — Edit Volume — Edit Geometry



Reset — OK — Cancel

Signalized Intersection #2 "IMPERIAL HWY @MAIN STREET" (LOS Mitigate)

Method: Circular 212 Planning | Calc On Field Change | Calculate

Cycle Time: 100 | Loss Time: 0 | Optimize | Scenario: 2005-AM Peak(6:00-7:00 AM)

Improvement: | Cost (in millions): 0.000

Approach	Northbound					Southbound					Eastbound					Westbound				
Movement	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Lanes	1	1	0	0	1	0	0	0	0	0	0	0	2	1	0	1	0	2	0	1
LTR			0					1					0					0		

Approach	Northbound			Southbound			Eastbound			Westbound		
Control,RT	Split Phase		Igno	Split Phase		Inclu	Permitted		Inclu	Protected		Inclu
Min Green	0	0	0	0	0	0	0	0	0	0	0	0
Base Vol	180	0	400	0	0	0	0	590	40	300	990	10
G/C	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Volume	198	0	0	0	0	0	0	590	40	300	990	10
Sat/Lane	1425	1425	1425	1425	1425	1425	1425	1425	1425	1425	1425	1425
SatAdj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes	2.00	0.00	1.00	0.00	1.00	0.00	0.00	2.81	0.19	1.00	2.00	1.00
Saturation	2850	0	1425	0	1425	0	0	4004	271	1425	2850	1425
Vol/Sat	0.07	0.00	0.00	0.00	0.00	0.00	0.00	0.15	0.15	0.21	0.35	0.01
CritVolume	99							210		300		
CriticalMove	******							******		******		

Critical Volume/Capacity: 0.427 | Average Delay: xxxxxx | Level Of Service: A

Calculated Cycle Length: 100 seconds | Optimal Cycle Length: 32 seconds | Error Count: 0

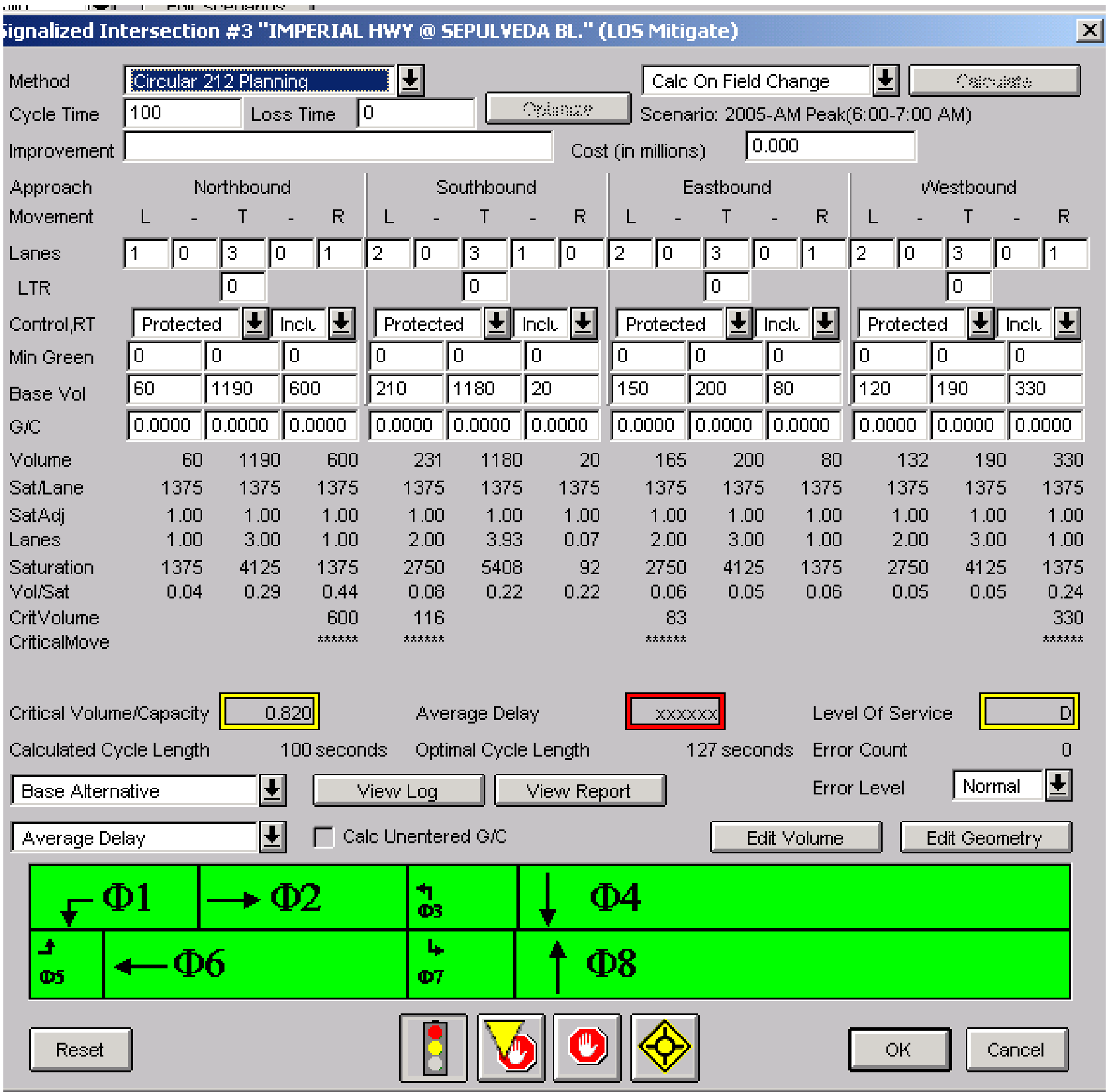
Base Alternative | View Log | View Report | Error Level: Normal

Average Delay | Calc Unentered G/C | Edit Volume | Edit Geometry

Φ1 | Φ2 | Φ3

Φ6 | Φ7

Reset | OK | Cancel



Signalized Intersection #3 "IMPERIAL HWY @ SEPULVEDA BL." (LOS Mitigate)

Method: Circular 212 Planning — Calc On Field Change — Calculate

Cycle Time: 100 — Loss Time: 0 — Optimize — Scenario: 2005-AM Peak(6:00-7:00 AM)

Improvement: — Cost (in millions): 0.000

Approach	Northbound					Southbound					Eastbound					Westbound				
Movement	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Lanes	1	0	3	0	1	2	0	3	1	0	2	0	3	0	1	2	0	3	0	1
LTR			0					0					0					0		
Control,RT	Protected			Inclu		Protected			Inclu		Protected			Inclu		Protected			Inclu	
Min Green	0		0		0	0		0		0	0		0		0	0		0		0
Base Vol	60		1190		600	210		1180		20	150		200		80	120		190		330
G/C	0.0000		0.0000		0.0000	0.0000		0.0000		0.0000	0.0000		0.0000		0.0000	0.0000		0.0000		0.0000
Volume	60		1190		600	231		1180		20	165		200		80	132		190		330
Sat/Lane	1375		1375		1375	1375		1375		1375	1375		1375		1375	1375		1375		1375
SatAdj	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00
Lanes	1.00		3.00		1.00	2.00		3.93		0.07	2.00		3.00		1.00	2.00		3.00		1.00
Saturation	1375		4125		1375	2750		5408		92	2750		4125		1375	2750		4125		1375
Vol/Sat	0.04		0.29		0.44	0.08		0.22		0.22	0.06		0.05		0.06	0.05		0.05		0.24
CritVolume					600	116					83									330
CriticalMove					******	******					******									******

Critical Volume/Capacity: 0.820 — Average Delay: xxxxxx — Level Of Service: D

Calculated Cycle Length: 100 seconds — Optimal Cycle Length: 127 seconds — Error Count: 0

Base Alternative — View Log — View Report — Error Level: Normal

Average Delay — Calc Unentered G/C — Edit Volume — Edit Geometry

Reset — OK — Cancel

Signalized Intersection #4 "IMPERIAL HWY @ NASH ST." (LOS Mitigate)

Method: Circular 212 Planning — Calc On Field Change — Calculate

Cycle Time: 100 — Loss Time: 0 — Optimize — Scenario: 2005-AM Peak(6:00-7:00 AM)

Improvement: — Cost (in millions): 0.000

Approach	Northbound					Southbound					Eastbound					Westbound				
Movement	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Lanes	0	0	0	0	0	1	1	0	1	1	0	0	2	1	0	2	0	3	0	0
LTR			0					0					0					0		

	Northbound			Southbound			Eastbound			Westbound		
Control,RT	Split Phase		Inclu	Split Phase		Inclu	Permitted		Inclu	Protected		Inclu
Min Green	0	0	0	0	0	0	0	0	0	0	0	0
Base Vol	0	0	0	250	980	770	0	280	160	100	400	0
G/C	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Volume	0	0	0	275	980	847	0	280	160	110	400	0
Sat/Lane	1425	1425	1425	1425	1425	1425	1425	1425	1425	1425	1425	1425
SatAdj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes	0.00	0.00	0.00	1.00	1.39	1.61	0.00	2.00	1.00	2.00	3.00	0.00
Saturation	0	0	0	1425	1982	2293	0	2850	1425	2850	4275	0
Vol/Sat	0.00	0.00	0.00	0.19	0.49	0.37	0.00	0.10	0.11	0.04	0.09	0.00
CritVolume					705				160	55		
CriticalMove					******				******	******		

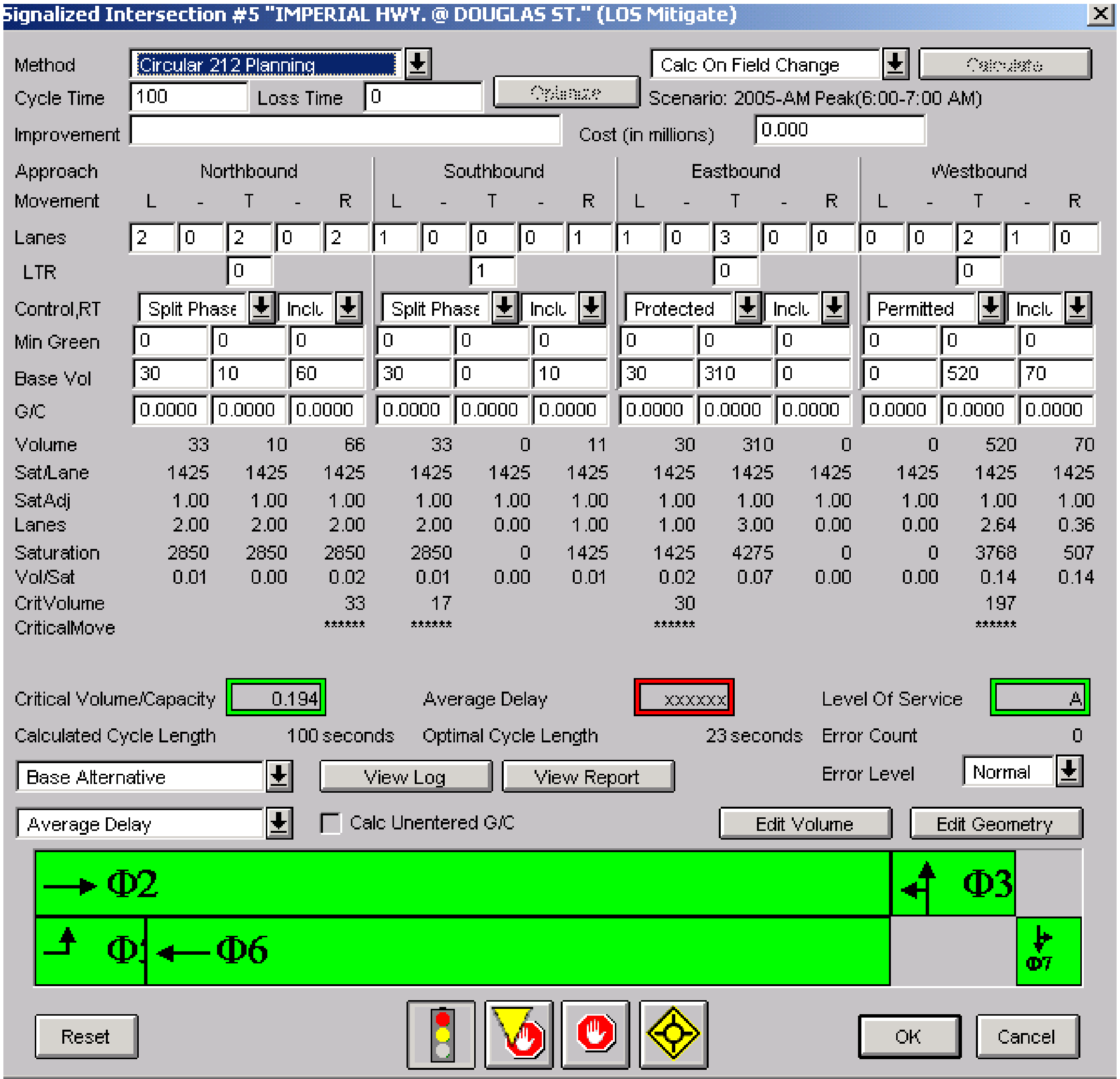
Critical Volume/Capacity: 0.645 — Average Delay: xxxxxx — Level Of Service: B

Calculated Cycle Length: 100 seconds — Optimal Cycle Length: 52 seconds — Error Count: 0

Base Alternative — View Log — View Report — Error Level: Normal

Average Delay — Calc Unentered G/C — Edit Volume — Edit Geometry

Reset — OK — Cancel



Signalized Intersection #5 "IMPERIAL HWY. @ DOUGLAS ST." (LOS Mitigate)

Method: Circular 212 Planning | Calc On Field Change | Calculate
Cycle Time: 100 | Loss Time: 0 | Optimize | Scenario: 2005-AM Peak(6:00-7:00 AM)
Improvement: | Cost (in millions): 0.000

Approach	Northbound					Southbound					Eastbound					Westbound				
Movement	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Lanes	2	0	2	0	2	1	0	0	0	1	1	0	3	0	0	0	0	2	1	0
LTR			0					1					0					0		

Approach	Northbound		Southbound		Eastbound		Westbound	
Control,RT	Split Phase	Inclu	Split Phase	Inclu	Protected	Inclu	Permitted	Inclu

Movement	NB L	NB T	NB R	SB L	SB T	SB R	EB L	EB T	EB R	WB L	WB T	WB R
Min Green	0	0	0	0	0	0	0	0	0	0	0	0
Base Vol	30	10	60	30	0	10	30	310	0	0	520	70
G/C	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Volume	33	10	66	33	0	11	30	310	0	0	520	70
Sat/Lane	1425	1425	1425	1425	1425	1425	1425	1425	1425	1425	1425	1425
SatAdj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes	2.00	2.00	2.00	2.00	0.00	1.00	1.00	3.00	0.00	0.00	2.64	0.36
Saturation	2850	2850	2850	2850	0	1425	1425	4275	0	0	3768	507
Vol/Sat	0.01	0.00	0.02	0.01	0.00	0.01	0.02	0.07	0.00	0.00	0.14	0.14
CritVolume			33	17			30				197	
CriticalMove			******	******			******				******	

Critical Volume/Capacity: 0.194 | Average Delay: xxxxxx | Level Of Service: A
Calculated Cycle Length: 100 seconds | Optimal Cycle Length: 23 seconds | Error Count: 0
Base Alternative | View Log | View Report | Error Level: Normal
Average Delay | Calc Unentered G/C | Edit Volume | Edit Geometry

Φ2 Φ3 Φ Φ6 Φ7

Reset | OK | Cancel

Signalized Intersection #6 "IMPERIAL HWY. @ AVIATION BL." (LOS Mitigate)

Method: Circular 212 Planning | Calc On Field Change | Calculate

Cycle Time: 100 | Loss Time: 0 | Optimize | Scenario: 2005-AM Peak(6:00-7:00 AM)

Improvement: | Cost (in millions): 0.000

Approach	Northbound					Southbound					Eastbound					Westbound				
Movement	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Lanes	2	0	2	0	1	2	0	1	1	1	2	0	2	1	0	2	0	3	0	1
LTR			0					0					0					0		
Control,RT	Protected			Ove		Protected			Ove		Protected			Inclu		Protected			Ove	

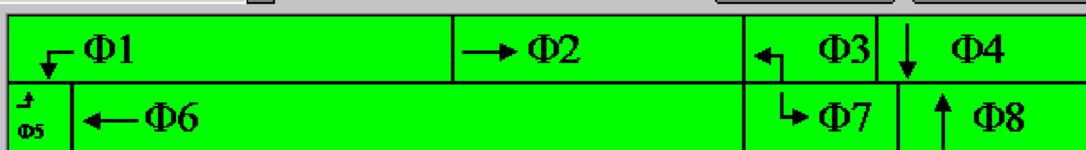
	NB L	NB T	NB R	SB L	SB T	SB R	EB L	EB T	EB R	WB L	WB T	WB R
Min Green	0	0	0	0	0	0	0	0	0	0	0	0
Base Vol	120	340	120	250	210	90	110	190	90	260	450	740
G/C	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Volume	132	340	120	275	210	99	121	190	90	286	450	740
Sat/Lane	1375	1375	1375	1375	1375	1375	1375	1375	1375	1375	1375	1375
SatAdj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes	2.00	2.00	1.00	2.00	2.00	1.00	2.00	2.04	0.96	2.00	3.00	1.00
Saturation	2750	2750	1375	2750	2750	1375	2750	2799	1326	2750	4125	1375
Vol/Sat	0.05	0.12	0.09	0.10	0.08	0.07	0.04	0.07	0.07	0.10	0.11	0.54
CritVolume		170		0			61					740
CriticalMove		******		******			******					******

Critical Volume/Capacity: 0.706 | Average Delay: xxxxxx | Level Of Service: C

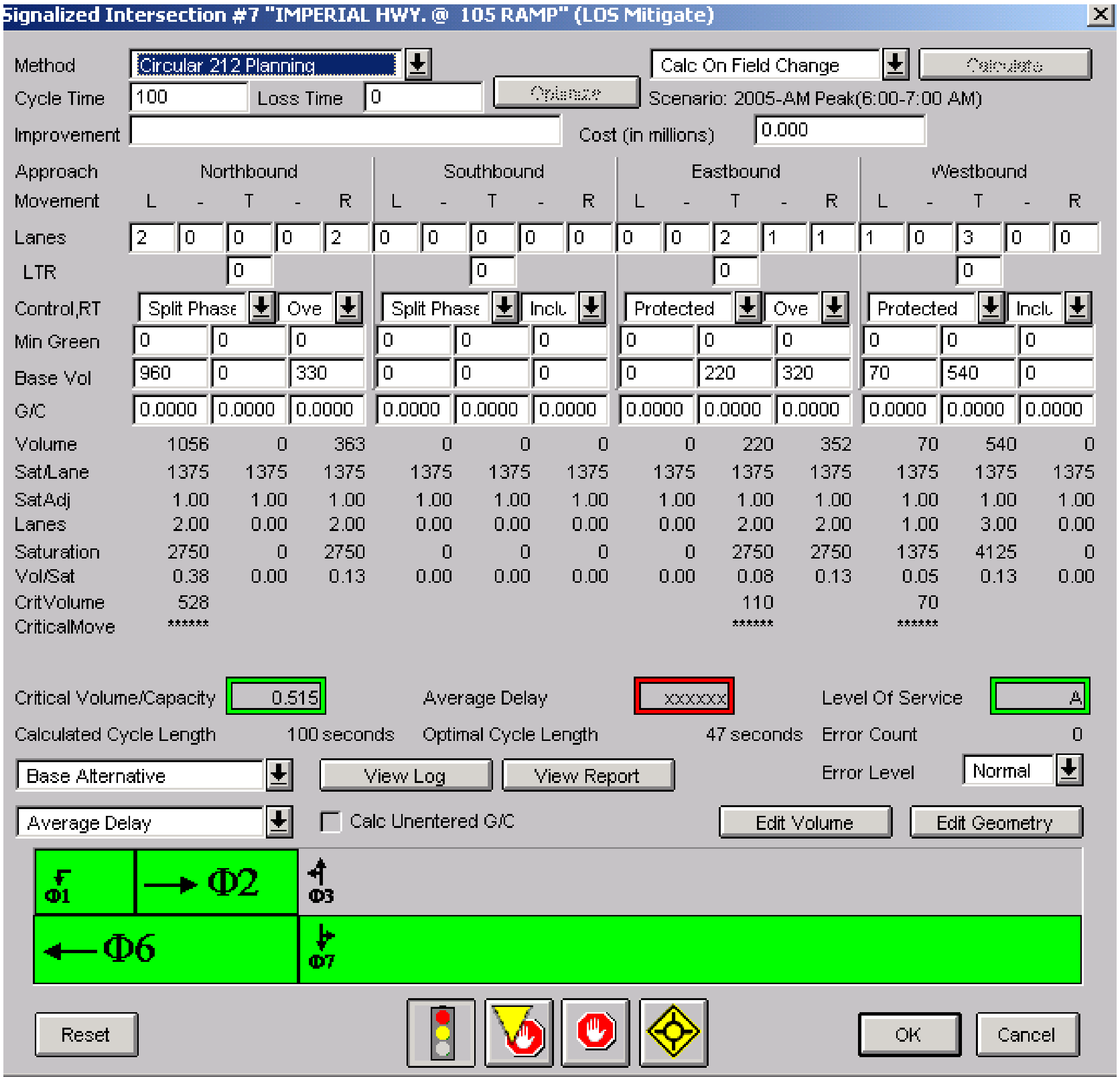
Calculated Cycle Length: 100 seconds | Optimal Cycle Length: 78 seconds | Error Count: 0

Base Alternative | View Log | View Report | Error Level: Normal

Average Delay | Calc Unentered G/C | Edit Volume | Edit Geometry



Reset | OK | Cancel



Signalized Intersection #7 "IMPERIAL HWY. @ 105 RAMP" (LOS Mitigate)

Method: Circular 212 Planning | Calc On Field Change | Calculate

Cycle Time: 100 | Loss Time: 0 | Optimize | Scenario: 2005-AM Peak(6:00-7:00 AM)

Improvement: | Cost (in millions): 0.000

Approach	Northbound					Southbound					Eastbound					Westbound				
Movement	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Lanes	2	0	0	0	2	0	0	0	0	0	0	0	2	1	1	1	0	3	0	0
LTR			0					0					0					0		
Control,RT	Split Phase			Ove		Split Phase			Inclu		Protected			Ove		Protected			Inclu	
Min Green	0		0		0	0		0		0	0		0		0	0		0		0
Base Vol	960		0		330	0		0		0	0		220		320	70		540		0
G/C	0.0000		0.0000		0.0000	0.0000		0.0000		0.0000	0.0000		0.0000		0.0000	0.0000		0.0000		0.0000
Volume	1056		0		363	0		0		0	0		220		352	70		540		0
Sat/Lane	1375		1375		1375	1375		1375		1375	1375		1375		1375	1375		1375		1375
SatAdj	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00
Lanes	2.00		0.00		2.00	0.00		0.00		0.00	0.00		2.00		2.00	1.00		3.00		0.00
Saturation	2750		0		2750	0		0		0	0		2750		2750	1375		4125		0
Vol/Sat	0.38		0.00		0.13	0.00		0.00		0.00	0.00		0.08		0.13	0.05		0.13		0.00
CritVolume	528												110			70				
CriticalMove	******												******			******				

Critical Volume/Capacity: 0.515 | Average Delay: xxxxxx | Level Of Service: A

Calculated Cycle Length: 100 seconds | Optimal Cycle Length: 47 seconds | Error Count: 0

Base Alternative | View Log | View Report | Error Level: Normal

Average Delay | Calc Unentered G/C | Edit Volume | Edit Geometry

Φ1 Φ2 Φ3

Φ6 Φ7

Reset | OK | Cancel

Signalized Intersection #8 "IMPERIAL HWY. @ La CIENEGA BLVD." (LOS Mitigate)

Method: Circular 212 Planning — Calc On Field Change — Calculate

Cycle Time: 100 — Loss Time: 0 — Optimize — Scenario: 2005-AM Peak(6:00-7:00 AM)

Improvement: — Cost (in millions): 0.000

Approach	Northbound					Southbound					Eastbound					Westbound				
Movement	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Lanes	2	0	1	1	1	2	0	1	1	1	2	0	3	0	2	2	0	3	0	2
LTR			0					0					0					0		
Control,RT	Protected			Inclu		Protected			Inclu		Protected			Ove		Protected			Ove	

	NB L	NB T	NB R	SB L	SB T	SB R	EB L	EB T	EB R	WB L	WB T	WB R
Min Green	0	0	0	0	0	0	0	0	0	0	0	0
Base Vol	30	110	110	40	80	190	140	170	80	40	460	290
G/C	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Volume	33	110	121	44	80	209	154	170	88	44	460	319
Sat/Lane	1375	1375	1375	1375	1375	1375	1375	1375	1375	1375	1375	1375
SatAdj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes	2.00	1.43	1.57	2.00	1.00	2.00	2.00	3.00	2.00	2.00	3.00	2.00
Saturation	2750	1964	2161	2750	1375	2750	2750	4125	2750	2750	4125	2750
Vol/Sat	0.01	0.06	0.06	0.02	0.06	0.08	0.06	0.04	0.03	0.02	0.11	0.12
CritVolume	17					105	77				153	
CriticalMove	******					******	******				******	

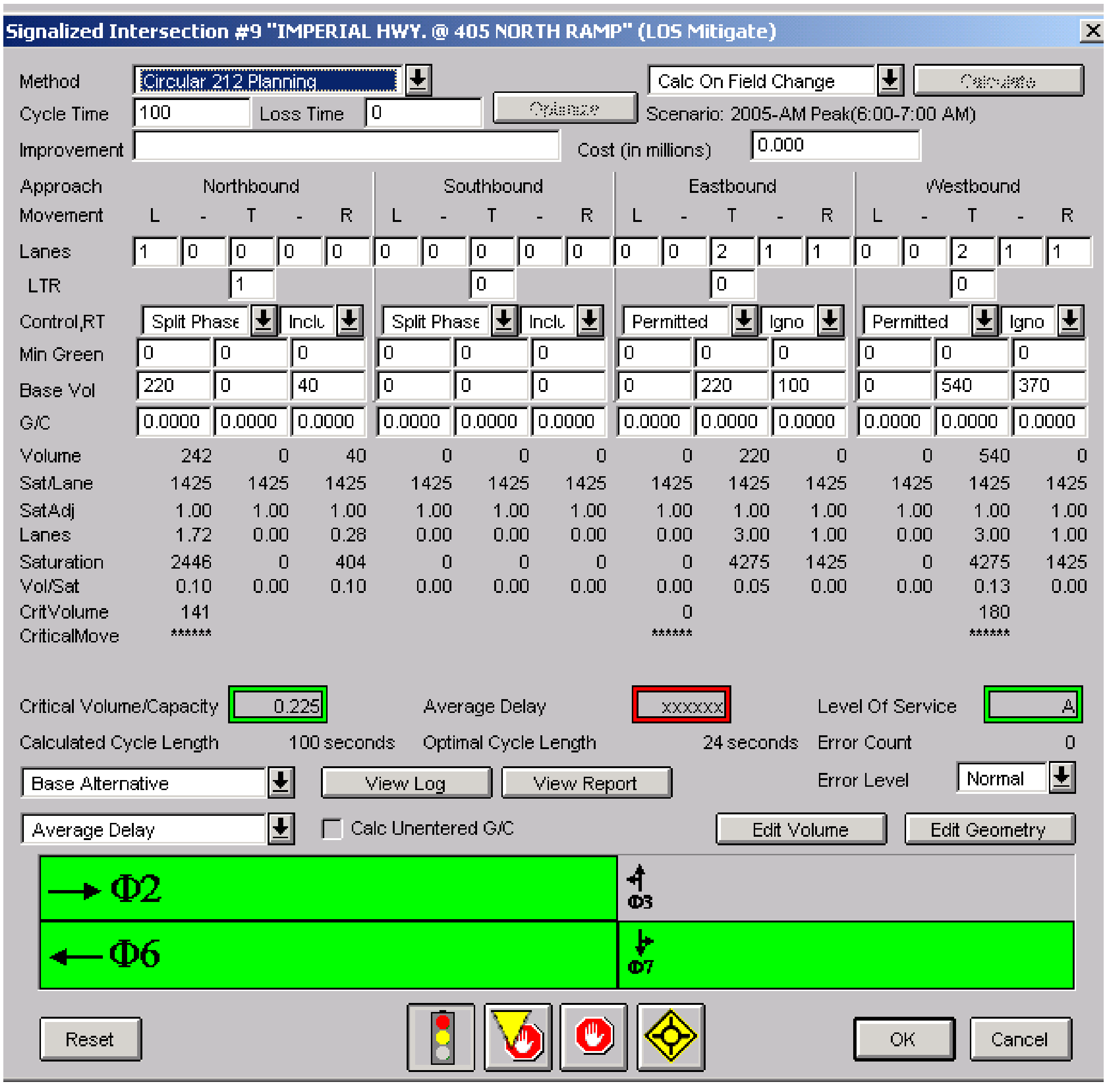
Critical Volume/Capacity: 0.256 — Average Delay: xxxxxx — Level Of Service: A

Calculated Cycle Length: 100 seconds — Optimal Cycle Length: 31 seconds — Error Count: 0

Base Alternative — View Log — View Report — Error Level: Normal

Average Delay — Calc Unentered G/C — Edit Volume — Edit Geometry

Reset — OK — Cancel

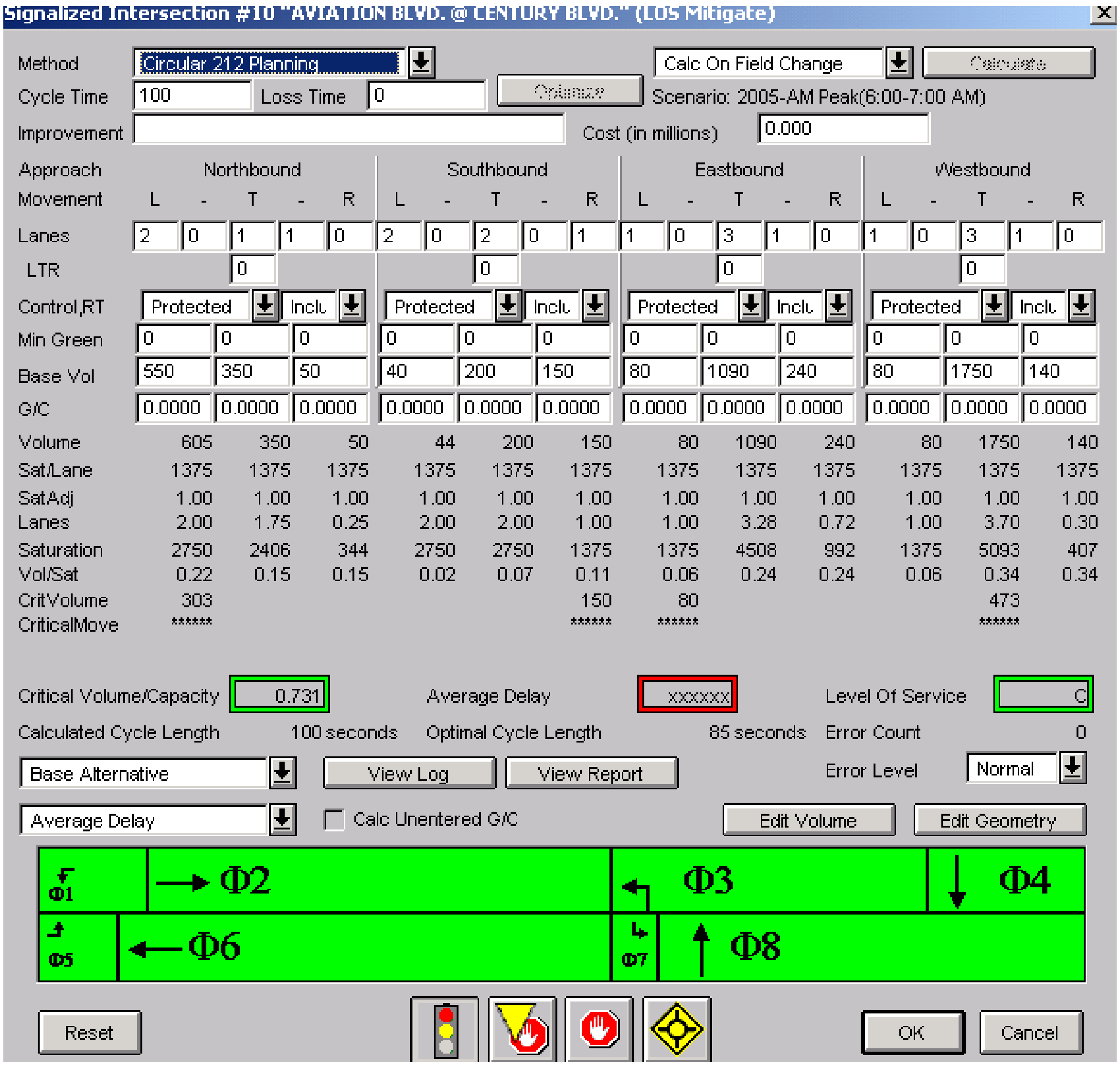

Signalized Intersection #9 "IMPERIAL HWY. @ 405 NORTH RAMP" (LOS Mitigate)

Method: Circular 212 Planning | Calc On Field Change | Calculate
Cycle Time: 100 | Loss Time: 0 | Optimize | Scenario: 2005-AM Peak(6:00-7:00 AM)
Improvement: | Cost (in millions): 0.000

Approach	Northbound					Southbound					Eastbound					Westbound				
Movement	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Lanes	1	0	0	0	0	0	0	0	0	0	0	0	2	1	1	0	0	2	1	1
LTR			1					0					0					0		

Approach	Northbound			Southbound			Eastbound			Westbound		
Movement	L	T	R	L	T	R	L	T	R	L	T	R
Control,RT	Split Phase		Inclu	Split Phase		Inclu	Permitted		Igno	Permitted		Igno
Min Green	0	0	0	0	0	0	0	0	0	0	0	0
Base Vol	220	0	40	0	0	0	0	220	100	0	540	370
G/C	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Volume	242	0	40	0	0	0	0	220	0	0	540	0
Sat/Lane	1425	1425	1425	1425	1425	1425	1425	1425	1425	1425	1425	1425
SatAdj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes	1.72	0.00	0.28	0.00	0.00	0.00	0.00	3.00	1.00	0.00	3.00	1.00
Saturation	2446	0	404	0	0	0	0	4275	1425	0	4275	1425
Vol/Sat	0.10	0.00	0.10	0.00	0.00	0.00	0.00	0.05	0.00	0.00	0.13	0.00
CritVolume	141						0				180	
CriticalMove	******						******				******	

Critical Volume/Capacity: 0.225 | Average Delay: xxxxxx | Level Of Service: A
Calculated Cycle Length: 100 seconds | Optimal Cycle Length: 24 seconds | Error Count: 0
Base Alternative | View Log | View Report | Error Level: Normal
Average Delay | Calc Unentered G/C | Edit Volume | Edit Geometry



Signalized Intersection #10 "AVIATION BLVD. @ CENTURY BLVD." (LOS Mitigate)

Method: Circular 212 Planning | Calc On Field Change | Calculate

Cycle Time: 100 | Loss Time: 0 | Optimize | Scenario: 2005-AM Peak(6:00-7:00 AM)

Improvement: | Cost (in millions): 0.000

Approach	Northbound					Southbound					Eastbound					Westbound				
Movement	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Lanes	2	0	1	1	0	2	0	2	0	1	1	0	3	1	0	1	0	3	1	0
LTR			0					0					0					0		
Control,RT	Protected				Inclu	Protected				Inclu	Protected				Inclu	Protected				Inclu

	NB L	NB T	NB R	SB L	SB T	SB R	EB L	EB T	EB R	WB L	WB T	WB R
Min Green	0	0	0	0	0	0	0	0	0	0	0	0
Base Vol	550	350	50	40	200	150	80	1090	240	80	1750	140
G/C	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Volume	605	350	50	44	200	150	80	1090	240	80	1750	140
Sat/Lane	1375	1375	1375	1375	1375	1375	1375	1375	1375	1375	1375	1375
SatAdj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes	2.00	1.75	0.25	2.00	2.00	1.00	1.00	3.28	0.72	1.00	3.70	0.30
Saturation	2750	2406	344	2750	2750	1375	1375	4508	992	1375	5093	407
Vol/Sat	0.22	0.15	0.15	0.02	0.07	0.11	0.06	0.24	0.24	0.06	0.34	0.34
CritVolume	303					150	80				473	
CriticalMove	******					******	******				******	

Critical Volume/Capacity: 0.731 | Average Delay: xxxxxx | Level Of Service: C

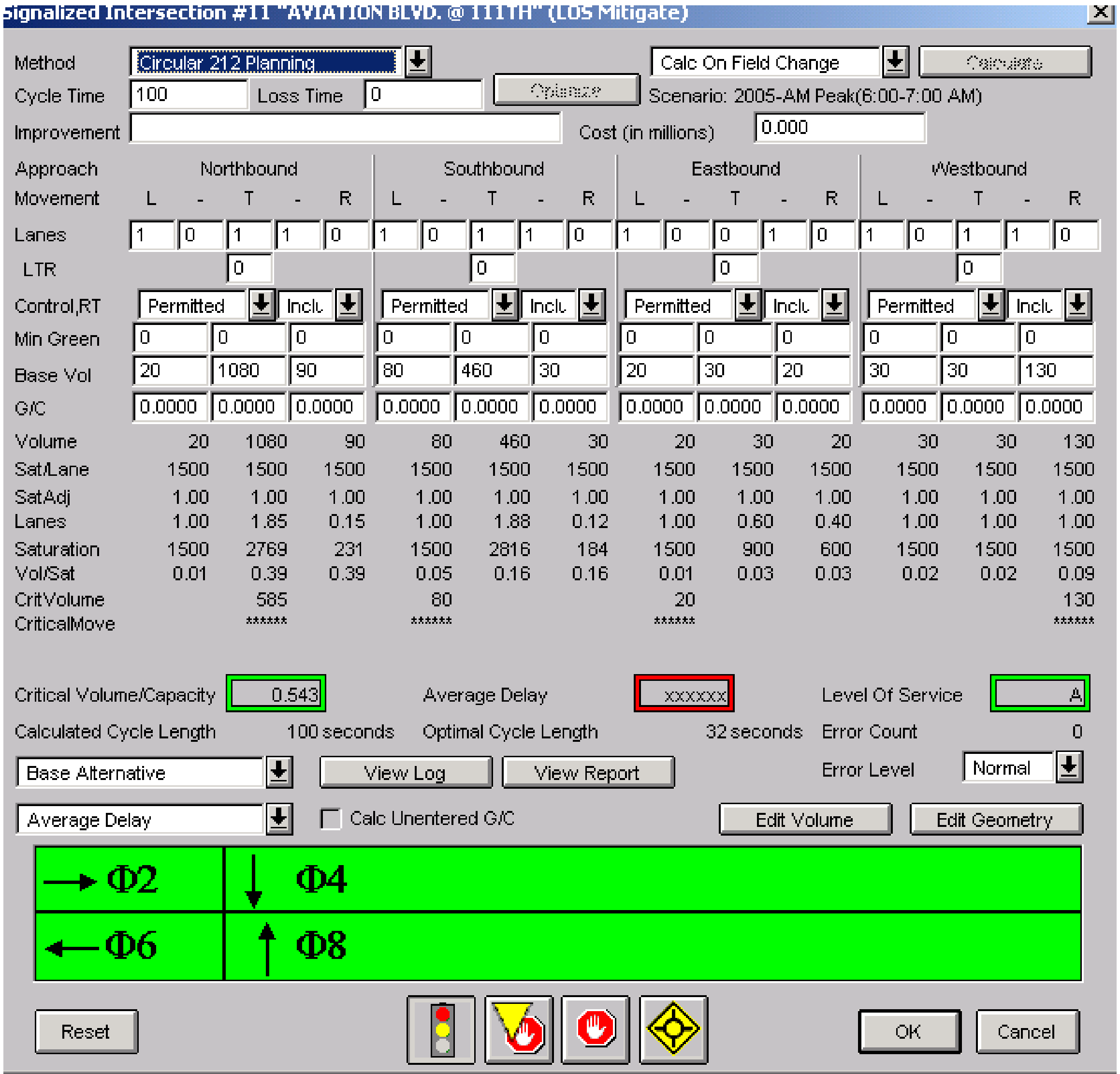
Calculated Cycle Length: 100 seconds | Optimal Cycle Length: 85 seconds | Error Count: 0

Base Alternative | View Log | View Report | Error Level: Normal

Average Delay | Calc Unentered G/C | Edit Volume | Edit Geometry

Φ1 Φ2 Φ3 Φ4 Φ5 Φ6 Φ7 Φ8

Reset | OK | Cancel



Signalized Intersection #11 "AVIATION BLVD. @ 111TH" (LOS Mitigate)

Method: Circular 212 Planning | Calc On Field Change | Calculate

Cycle Time: 100 | Loss Time: 0 | Optimize | Scenario: 2005-AM Peak(6:00-7:00 AM)

Improvement: | Cost (in millions): 0.000

Approach	Northbound					Southbound					Eastbound					Westbound				
Movement	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Lanes	1	0	1	1	0	1	0	1	1	0	1	0	0	1	0	1	0	1	1	0
LTR			0					0					0					0		
Control,RT	Permitted				Inclu	Permitted				Inclu	Permitted				Inclu	Permitted				Inclu
Min Green	0		0		0	0		0		0	0		0		0	0		0		0
Base Vol	20		1080		90	80		460		30	20		30		20	30		30		130
G/C	0.0000		0.0000		0.0000	0.0000		0.0000		0.0000	0.0000		0.0000		0.0000	0.0000		0.0000		0.0000
Volume	20		1080		90	80		460		30	20		30		20	30		30		130
Sat/Lane	1500		1500		1500	1500		1500		1500	1500		1500		1500	1500		1500		1500
SatAdj	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00
Lanes	1.00		1.85		0.15	1.00		1.88		0.12	1.00		0.60		0.40	1.00		1.00		1.00
Saturation	1500		2769		231	1500		2816		184	1500		900		600	1500		1500		1500
Vol/Sat	0.01		0.39		0.39	0.05		0.16		0.16	0.01		0.03		0.03	0.02		0.02		0.09
CritVolume			585			80					20									130
CriticalMove			******			******					******									******

Critical Volume/Capacity: 0.543 | Average Delay: xxxxxx | Level Of Service: A

Calculated Cycle Length: 100 seconds | Optimal Cycle Length: 32 seconds | Error Count: 0

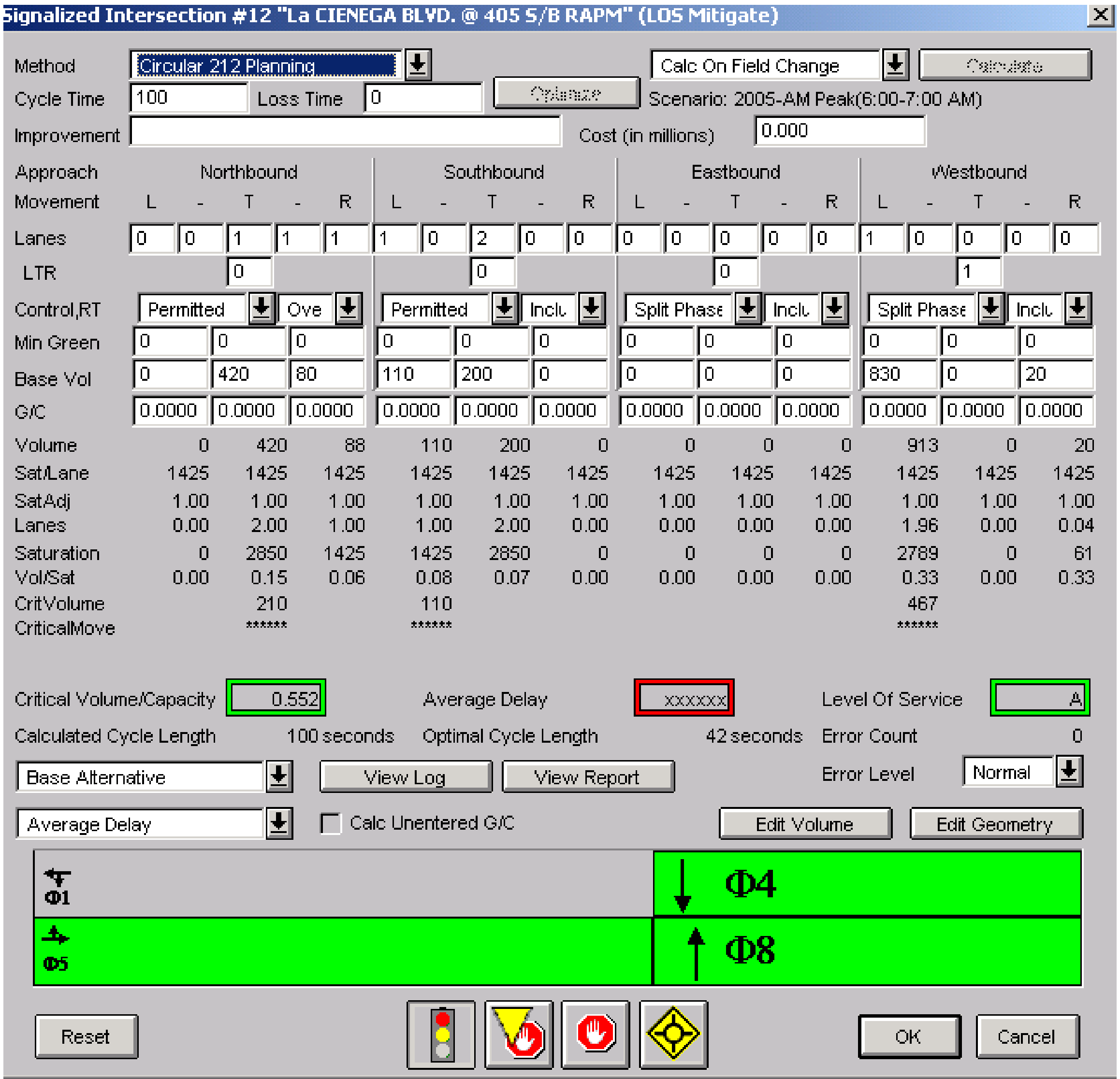
Base Alternative | View Log | View Report | Error Level: Normal

Average Delay | Calc Unentered G/C | Edit Volume | Edit Geometry

Φ2 Φ4

Φ6 Φ8

Reset | OK | Cancel



Signalized Intersection #12 "La CIENEGA BLVD. @ 405 S/B RAPM" (LOS Mitigate)

Method: Circular 212 Planning | Calc On Field Change | Calculate

Cycle Time: 100 | Loss Time: 0 | Optimize | Scenario: 2005-AM Peak(6:00-7:00 AM)

Improvement: | Cost (in millions): 0.000

Approach	Northbound					Southbound					Eastbound					Westbound				
Movement	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Lanes	0	0	1	1	1	1	0	2	0	0	0	0	0	0	0	1	0	0	0	0
LTR			0					0					0					1		
Control,RT	Permitted			Ove		Permitted			Inclu		Split Phase			Inclu		Split Phase			Inclu	

	NB L	NB T	NB R	SB L	SB T	SB R	EB L	EB T	EB R	WB L	WB T	WB R
Min Green	0	0	0	0	0	0	0	0	0	0	0	0
Base Vol	0	420	80	110	200	0	0	0	0	830	0	20
G/C	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Volume	0	420	88	110	200	0	0	0	0	913	0	20
Sat/Lane	1425	1425	1425	1425	1425	1425	1425	1425	1425	1425	1425	1425
SatAdj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes	0.00	2.00	1.00	1.00	2.00	0.00	0.00	0.00	0.00	1.96	0.00	0.04
Saturation	0	2850	1425	1425	2850	0	0	0	0	2789	0	61
Vol/Sat	0.00	0.15	0.06	0.08	0.07	0.00	0.00	0.00	0.00	0.33	0.00	0.33
CritVolume		210		110						467		
CriticalMove		******		******						******		

Critical Volume/Capacity: 0.552 | Average Delay: xxxxxx | Level Of Service: A

Calculated Cycle Length: 100 seconds | Optimal Cycle Length: 42 seconds | Error Count: 0

Base Alternative | View Log | View Report | Error Level: Normal

Average Delay | Calc Unentered G/C | Edit Volume | Edit Geometry

Φ1 | Φ4

Φ5 | Φ8

Reset | OK | Cancel

Signalized Intersection #13 "La CIENEGA BLVD. @ CENTURY BLVD" (LOS Mitigate)

Method: Circular 212 Planning — Calc On Field Change — Calculate

Cycle Time: 100 — Loss Time: 0 — Optimize — Scenario: 2005-AM Peak(6:00-7:00 AM)

Improvement: — Cost (in millions): 0.000

Approach	Northbound			Southbound			Eastbound			Westbound		
Movement	L	T	R	L	T	R	L	T	R	L	T	R
Lanes	1 0	2 0	2	1 0	2 0	2	1 0	3 0	2	1 0	3 1	0
LTR		0			0			0			0	
Control,RT	Prot+Permi		Inclu	Prot+Permi		Inclu	Prot+Permi		Ove	Prot+Permi		Inclu
Min Green	0	0	0	0	0	0	0	0	0	0	0	0
Base Vol	90	180	180	90	290	670	80	590	390	300	1290	280
G/C	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Volume	90	180	198	90	290	737	80	590	429	300	1290	280
Sat/Lane	1375	1375	1375	1375	1375	1375	1375	1375	1375	1375	1375	1375
SatAdj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes	1.00	2.00	2.00	1.00	2.00	2.00	1.00	3.00	2.00	1.00	3.29	0.71
Saturation	1375	2750	2750	1375	2750	2750	1375	4125	2750	1375	4519	981
Vol/Sat	0.07	0.07	0.07	0.07	0.11	0.27	0.06	0.14	0.16	0.22	0.29	0.29
CritVolume	90					369		197		300		
CriticalMove	******					******		******		******		

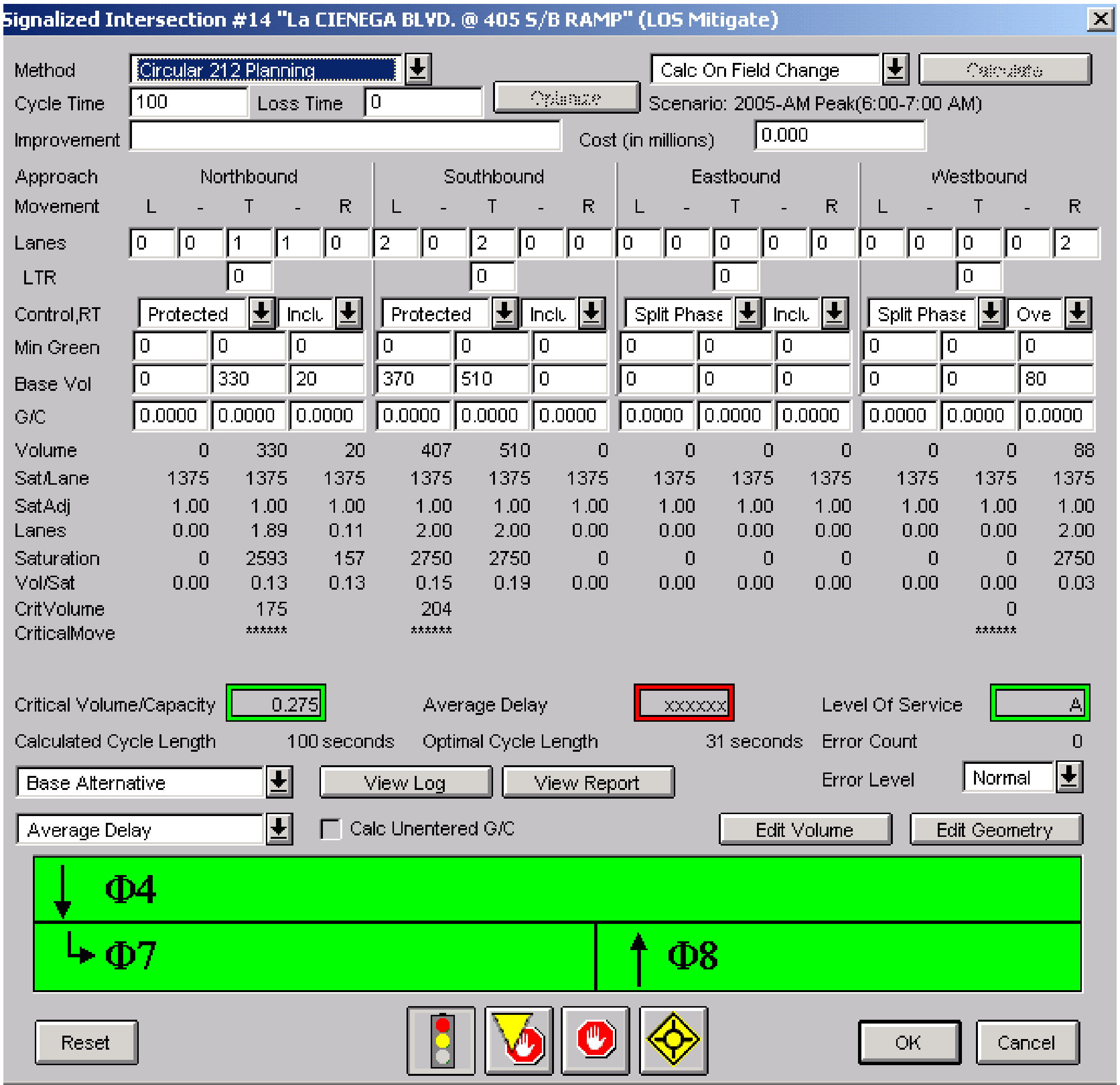
Critical Volume/Capacity: 0.695 — Average Delay: xxxxxx — Level Of Service: B

Calculated Cycle Length: 100 seconds — Optimal Cycle Length: 75 seconds — Error Count: 0

Base Alternative — View Log — View Report — Error Level: Normal

Average Delay — Calc Unentered G/C — Edit Volume — Edit Geometry

Reset — OK — Cancel



Signalized Intersection #14 "La CIENEGA BLVD. @ 405 S/B RAMP" (LOS Mitigate)

Method: Circular 212 Planning | Calc On Field Change | Calculate

Cycle Time: 100 | Loss Time: 0 | Optimize | Scenario: 2005-AM Peak(6:00-7:00 AM)

Improvement: | Cost (in millions): 0.000

Approach	Northbound					Southbound					Eastbound					Westbound				
Movement	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Lanes	0	0	1	1	0	2	0	2	0	0	0	0	0	0	0	0	0	0	0	2
LTR			0					0					0					0		

	Northbound			Southbound			Eastbound			Westbound		
Control,RT	Protected		Inclu	Protected		Inclu	Split Phase		Inclu	Split Phase		Ove
Min Green	0	0	0	0	0	0	0	0	0	0	0	0
Base Vol	0	330	20	370	510	0	0	0	0	0	0	80
G/C	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Volume	0	330	20	407	510	0	0	0	0	0	0	88
Sat/Lane	1375	1375	1375	1375	1375	1375	1375	1375	1375	1375	1375	1375
SatAdj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes	0.00	1.89	0.11	2.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	2.00
Saturation	0	2593	157	2750	2750	0	0	0	0	0	0	2750
Vol/Sat	0.00	0.13	0.13	0.15	0.19	0.00	0.00	0.00	0.00	0.00	0.00	0.03
CritVolume		175		204							0	
CriticalMove		******		******							******	

Critical Volume/Capacity: 0.275 | Average Delay: xxxxxx | Level Of Service: A

Calculated Cycle Length: 100 seconds | Optimal Cycle Length: 31 seconds | Error Count: 0

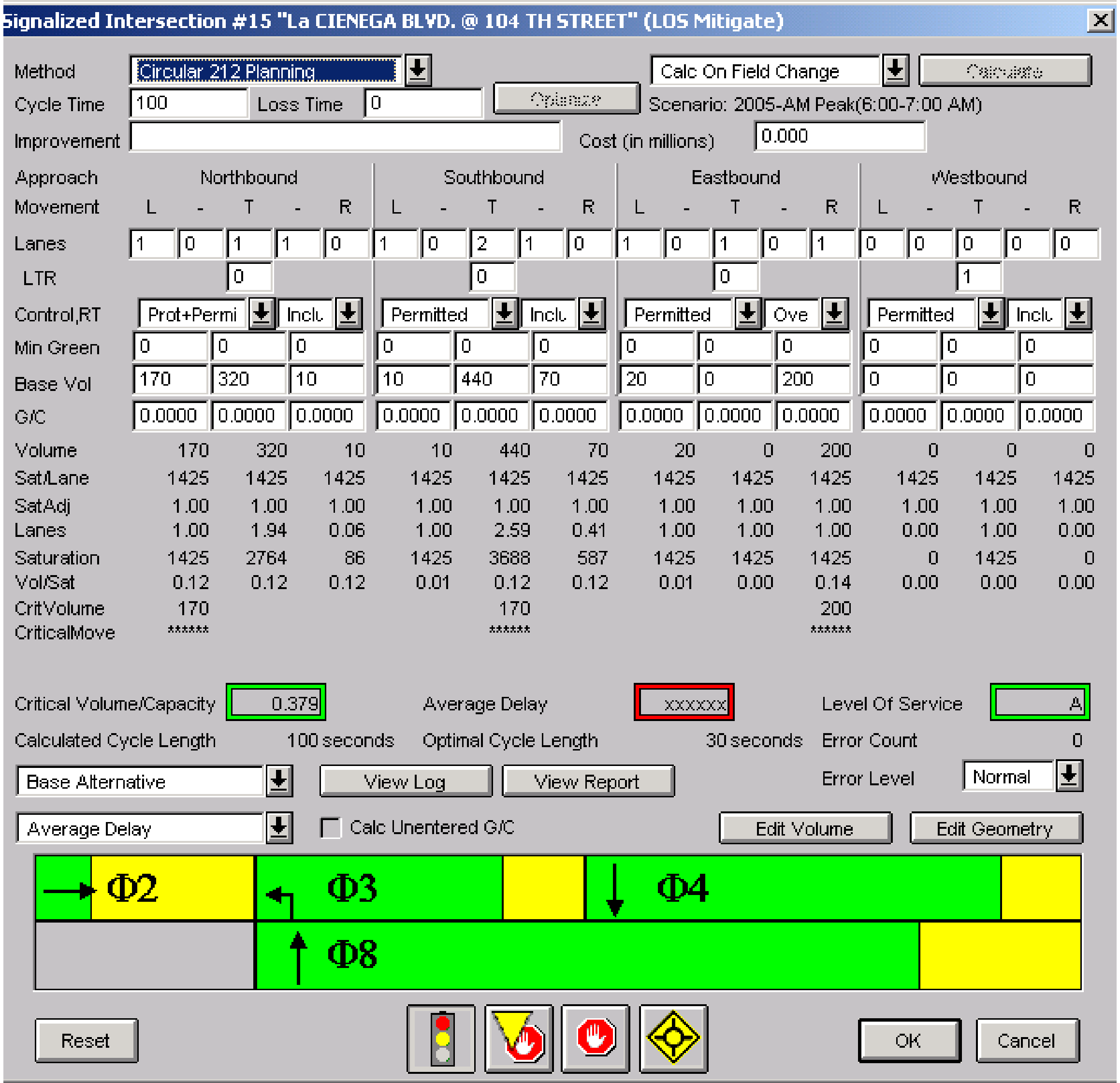
Base Alternative | View Log | View Report | Error Level: Normal

Average Delay | Calc Unentered G/C | Edit Volume | Edit Geometry

Φ4

Φ7 | Φ8

Reset | OK | Cancel


Signalized Intersection #15 "La CIENEGA BLVD. @ 104 TH STREET" (LOS Mitigate)

Method: Circular 212 Planning | Calc On Field Change | Calculate

Cycle Time: 100 | Loss Time: 0 | Optimize | Scenario: 2005-AM Peak(6:00-7:00 AM)

Improvement: | Cost (in millions): 0.000

Approach	Northbound			Southbound			Eastbound			Westbound		
Movement	L	T	R	L	T	R	L	T	R	L	T	R
Lanes	1 0	1 1	0	1 0	2 1	0	1 0	1 0	1	0 0	0 0	0
LTR		0			0			0			1	
Control,RT	Prot+Permi		Inclu	Permitted		Inclu	Permitted		Ove	Permitted		Inclu
Min Green	0	0	0	0	0	0	0	0	0	0	0	0
Base Vol	170	320	10	10	440	70	20	0	200	0	0	0
G/C	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Volume	170	320	10	10	440	70	20	0	200	0	0	0
Sat/Lane	1425	1425	1425	1425	1425	1425	1425	1425	1425	1425	1425	1425
SatAdj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes	1.00	1.94	0.06	1.00	2.59	0.41	1.00	1.00	1.00	0.00	1.00	0.00
Saturation	1425	2764	86	1425	3688	587	1425	1425	1425	0	1425	0
Vol/Sat	0.12	0.12	0.12	0.01	0.12	0.12	0.01	0.00	0.14	0.00	0.00	0.00
CritVolume	170				170				200			
CriticalMove	******				******				******			

Critical Volume/Capacity: 0.379 | Average Delay: xxxxxx | Level Of Service: A

Calculated Cycle Length: 100 seconds | Optimal Cycle Length: 30 seconds | Error Count: 0

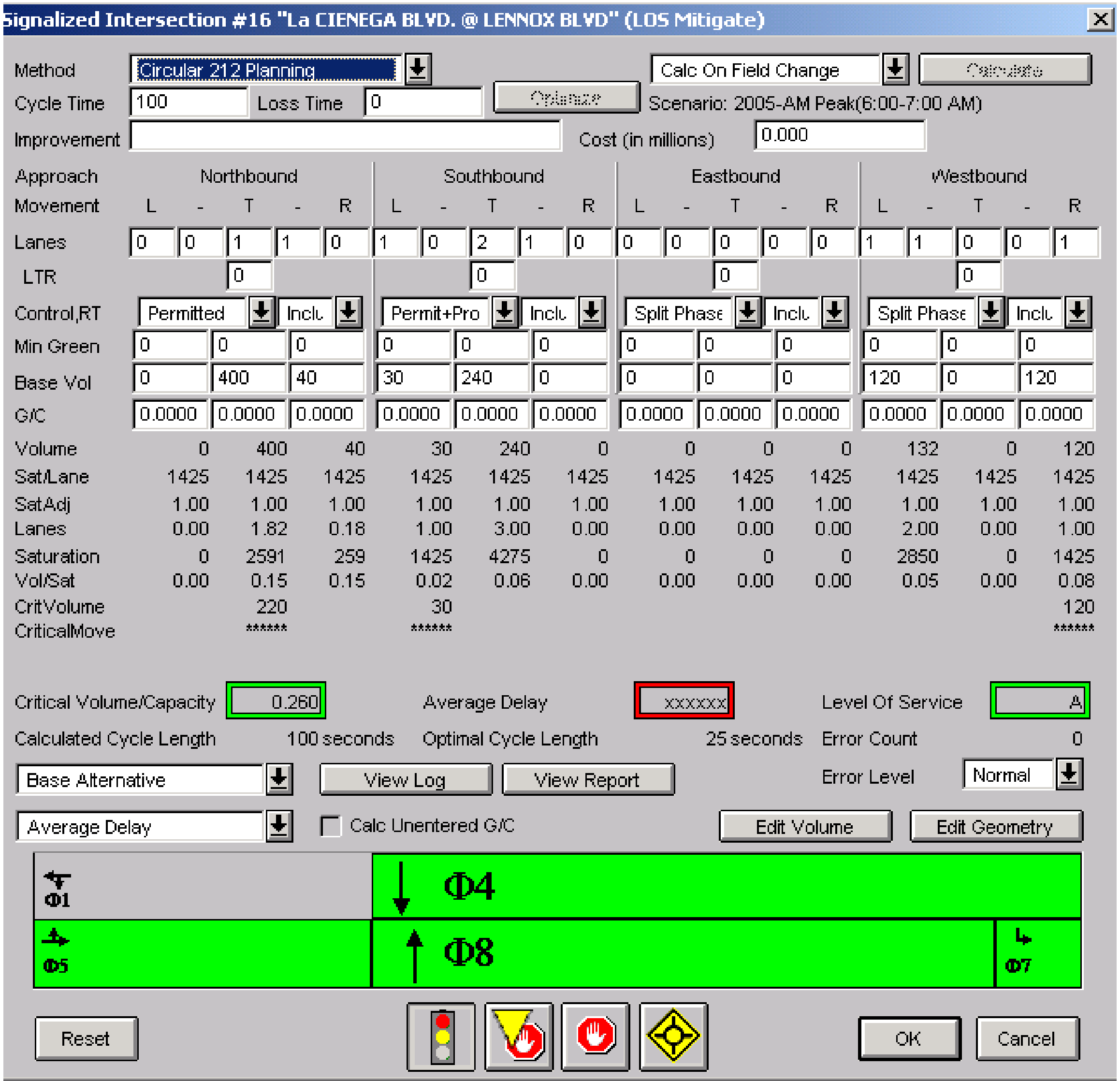
Base Alternative | View Log | View Report | Error Level: Normal

Average Delay | Calc Unentered G/C | Edit Volume | Edit Geometry

Φ2 Φ3 Φ4

Φ8

Reset | OK | Cancel



Signalized Intersection #16 "La CIENEGA BLVD. @ LENNOX BLVD" (LOS Mitigate)

Method: Circular 212 Planning — Calc On Field Change — Calculate

Cycle Time: 100 — Loss Time: 0 — Optimize — Scenario: 2005-AM Peak(6:00-7:00 AM)

Improvement: — Cost (in millions): 0.000

Approach	Northbound					Southbound					Eastbound					Westbound				
Movement	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Lanes	0	0	1	1	0	1	0	2	1	0	0	0	0	0	0	1	1	0	0	1
LTR			0					0					0					0		

	Northbound			Southbound			Eastbound			Westbound		
Control,RT	Permitted		Inclu	Permit+Pro		Inclu	Split Phase		Inclu	Split Phase		Inclu
Min Green	0	0	0	0	0	0	0	0	0	0	0	0
Base Vol	0	400	40	30	240	0	0	0	0	120	0	120
G/C	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Volume	0	400	40	30	240	0	0	0	0	132	0	120
Sat/Lane	1425	1425	1425	1425	1425	1425	1425	1425	1425	1425	1425	1425
SatAdj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes	0.00	1.82	0.18	1.00	3.00	0.00	0.00	0.00	0.00	2.00	0.00	1.00
Saturation	0	2591	259	1425	4275	0	0	0	0	2850	0	1425
Vol/Sat	0.00	0.15	0.15	0.02	0.06	0.00	0.00	0.00	0.00	0.05	0.00	0.08
CritVolume		220		30								120
CriticalMove		******		******								******

Critical Volume/Capacity: 0.260 — Average Delay: xxxxxx — Level Of Service: A

Calculated Cycle Length: 100 seconds — Optimal Cycle Length: 25 seconds — Error Count: 0

Base Alternative — View Log — View Report — Error Level: Normal

Average Delay — Calc Unentered G/C — Edit Volume — Edit Geometry

Reset — OK — Cancel

Signalized Intersection #17 "La CIENEGA BLVD. @ 111TH STREET" (LOS Mitigate)

Method: Circular 212 Planning | Calc On Field Change | Calculate

Cycle Time: 100 | Loss Time: 0 | Optimize | Scenario: 2005-AM Peak(6:00-7:00 AM)

Improvement: | Cost (in millions): 0.000

Approach	Northbound			Southbound			Eastbound			Westbound		
Movement	L	T	R	L	T	R	L	T	R	L	T	R
Lanes	1 - 0	2 - 0	0	0 - 0	2 - 1	0	2 - 0	0 - 0	1	0 - 0	0 - 0	0
LTR		0			0			0			0	
Control,RT	Permitted		Incl.	Permitted		Incl.	Split Phase		Incl.	Split Phase		Incl.
Min Green	0	0	0	0	0	0	0	0	0	0	0	0
Base Vol	170	350	0	0	210	120	80	0	50	0	0	0
G/C	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Volume	170	350	0	0	210	120	88	0	50	0	0	0
Sat/Lane	1425	1425	1425	1425	1425	1425	1425	1425	1425	1425	1425	1425
SatAdj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes	1.00	2.00	0.00	0.00	2.00	1.00	2.00	0.00	1.00	0.00	0.00	0.00
Saturation	1425	2850	0	0	2850	1425	2850	0	1425	0	0	0
Vol/Sat	0.12	0.12	0.00	0.00	0.07	0.08	0.03	0.00	0.04	0.00	0.00	0.00
CritVolume	170					120			50			
CriticalMove	******					******			******			

Critical Volume/Capacity: 0.239 | Average Delay: xxxxxx | Level Of Service: A

Calculated Cycle Length: 100 seconds | Optimal Cycle Length: 24 seconds | Error Count: 0

Base Alternative | View Log | View Report | Error Level: Normal

Average Delay | Calc Unentered G/C | Edit Volume | Edit Geometry

Φ1 | Φ4

Φ5 | Φ8

Reset | OK | Cancel

Signalized Intersection #18 "La CIENEGA BLVD. @ 405 S/B RAMP" (LOS Mitigate)

Method: Circular 212 Planning | Calc On Field Change | Calculate

Cycle Time: 100 | Loss Time: 0 | Optimize | Scenario: 2005-AM Peak(6:00-7:00 AM)

Improvement: | Cost (in millions): 0.000

Approach	Northbound					Southbound					Eastbound					Westbound				
Movement	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Lanes	1	0	2	0	1	1	0	2	1	0	0	0	0	0	0	2	0	0	0	1
LTR			0					0					0					0		

Approach	Northbound			Southbound			Eastbound			Westbound		
Control,RT	Permitted		Ove	Protected		Inclu	Split Phase		Inclu	Split Phase		Inclu
Movement	L	T	R	L	T	R	L	T	R	L	T	R
Min Green	0	0	0	0	0	0	0	0	0	0	0	0
Base Vol	10	520	80	60	210	0	0	0	0	80	0	60
G/C	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Volume	10	520	80	60	210	0	0	0	0	88	0	60
Sat/Lane	1425	1425	1425	1425	1425	1425	1425	1425	1425	1425	1425	1425
SatAdj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes	1.00	2.00	1.00	1.00	3.00	0.00	0.00	0.00	0.00	2.00	0.00	1.00
Saturation	1425	2850	1425	1425	4275	0	0	0	0	2850	0	1425
Vol/Sat	0.01	0.18	0.06	0.04	0.05	0.00	0.00	0.00	0.00	0.03	0.00	0.04
CritVolume		260		60								60
CriticalMove		******		******								******

Critical Volume/Capacity: 0.267 | Average Delay: xxxxxx | Level Of Service: A

Calculated Cycle Length: 100 seconds | Optimal Cycle Length: 25 seconds | Error Count: 0

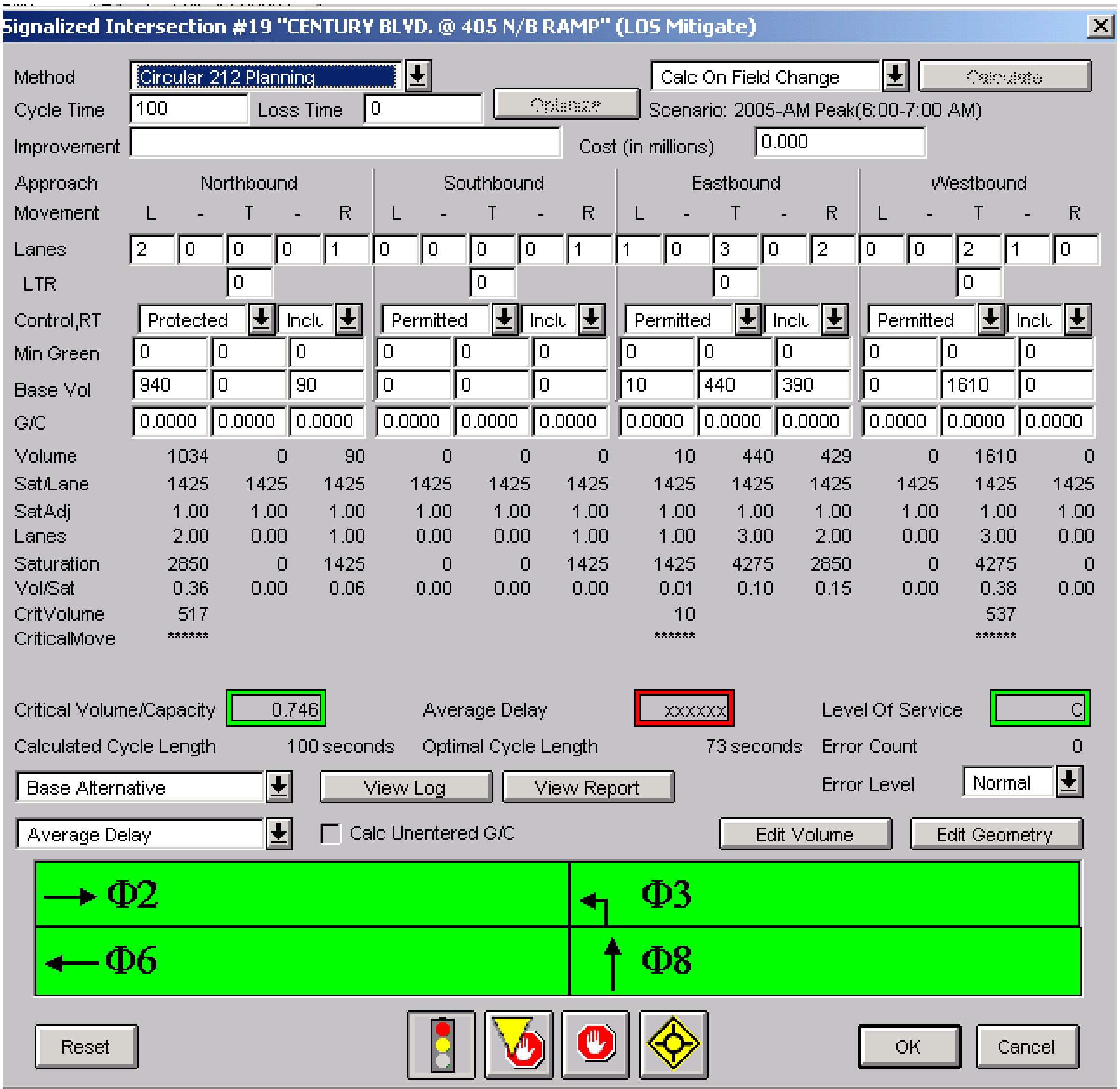
Base Alternative | View Log | View Report | Error Level: Normal

Average Delay | Calc Unentered G/C | Edit Volume | Edit Geometry

Φ1 | Φ4

Φ5 | Φ7 | Φ8

Reset | OK | Cancel



Signalized Intersection #19 "CENTURY BLVD. @ 405 N/B RAMP" (LOS Mitigate)

Method: Circular 212 Planning | Calc On Field Change | Calculate

Cycle Time: 100 | Loss Time: 0 | Optimize | Scenario: 2005-AM Peak(6:00-7:00 AM)

Improvement: | Cost (in millions): 0.000

Approach	Northbound			Southbound			Eastbound			Westbound		
Movement	L	T	R	L	T	R	L	T	R	L	T	R
Lanes	2 0	0 0	1	0 0	0 0	1	1 0	3 0	2	0 0	2 1	0
LTR		0			0			0			0	
Control,RT	Protected		Inclu	Permitted		Inclu	Permitted		Inclu	Permitted		Inclu
Min Green	0	0	0	0	0	0	0	0	0	0	0	0
Base Vol	940	0	90	0	0	0	10	440	390	0	1610	0
G/C	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Volume	1034	0	90	0	0	0	10	440	429	0	1610	0
Sat/Lane	1425	1425	1425	1425	1425	1425	1425	1425	1425	1425	1425	1425
SatAdj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes	2.00	0.00	1.00	0.00	0.00	1.00	1.00	3.00	2.00	0.00	3.00	0.00
Saturation	2850	0	1425	0	0	1425	1425	4275	2850	0	4275	0
Vol/Sat	0.36	0.00	0.06	0.00	0.00	0.00	0.01	0.10	0.15	0.00	0.38	0.00
CritVolume	517						10				537	
CriticalMove	******						******				******	

Critical Volume/Capacity: 0.746 | Average Delay: xxxxxx | Level Of Service: C

Calculated Cycle Length: 100 seconds | Optimal Cycle Length: 73 seconds | Error Count: 0

Base Alternative | View Log | View Report | Error Level: Normal

Average Delay | Calc Unentered G/C | Edit Volume | Edit Geometry

Φ2 Φ3

Φ6 Φ8

Reset | OK | Cancel

TRAFFIX Adjusted Baseline (2005) Analysis Results Report—Delivery Peak Hour

Traffix 7.6.0115 (c) 2003 Dowling Assoc. Licensed to R & A, CHICAGO, IL
2005-Delivery (3:00-4:00 PM)Sun Jan 17, 2005 15:28:38 Page 1-1

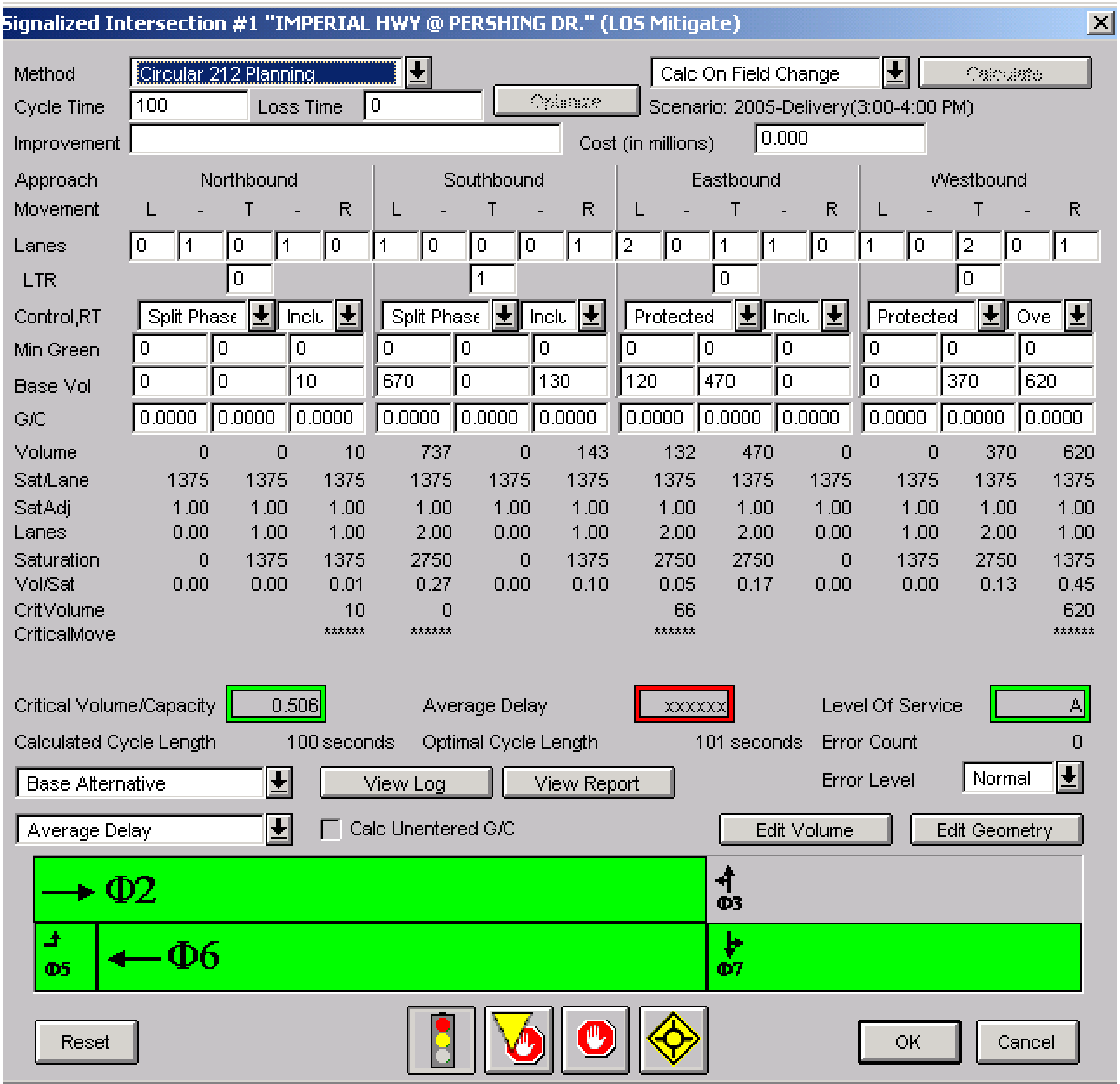
LAX SOUTH AIRFIELD EIR

Impact Analysis Report
Level Of Service

Intersection	LOS	V/C
# 1 IMPERIAL HWY @ PERSHING DR.	A	0.506
# 2 IMPERIAL HWY @MAIN STREET	B	0.609
# 3 IMPERIAL HWY @ SEPULVEDA BL.	F	1.095
# 4 IMPERIAL HWY @ NASH ST.	A	0.377
# 5 IMPERIAL HWY. @ DOUGLAS ST.	A	0.387
# 6 IMPERIAL HWY. @ AVIATION BL.	C	0.729
# 7 IMPERIAL HWY. @ 105 RAMP	C	0.766
# 8 IMPERIAL HWY. @ La CIENEGA BLV	A	0.441
# 9 IMPERIAL HWY. @ 405 NORTH RAMP	A	0.399
# 10 AVIATION BLVD. @ CENTURY BLVD.	F	1.010
# 11 AVIATION BLVD. @ 111TH	B	0.680
# 12 La CIENEGA BLVD. @ 405 S/B RAP	B	0.660
# 13 La CIENEGA BLVD. @ CENTURY BLV	E	0.919
# 14 La CIENEGA BLVD. @ 405 S/B RAM	A	0.568
# 15 La CIENEGA BLVD. @ 104 TH STRE	A	0.510
# 16 La CIENEGA BLVD. @ LENNOX BLVD	A	0.442
# 17 La CIENEGA BLVD. @ 111TH STREE	A	0.473
# 18 La CIENEGA BLVD. @ 405 S/B RAM	A	0.361
# 19 CENTURY BLVD. @ 405 N/B RAMP	A	0.567

Traffix 7.6.0115 (c) 2003 Dowling Assoc. Licensed to R & A, CHICAGO, IL

TRAFFIX Adjusted Baseline (2005) Delivery Peak Hour Intersection Summary Reports



Signalized Intersection #1 "IMPERIAL HWY @ PERSHING DR." (LOS Mitigate)

Method: Circular 212 Planning — Calc On Field Change — Calculate

Cycle Time: 100 — Loss Time: 0 — Optimize — Scenario: 2005-Delivery(3:00-4:00 PM)

Improvement: — Cost (in millions): 0.000

Approach	Northbound					Southbound					Eastbound					Westbound				
Movement	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Lanes	0	1	0	1	0	1	0	0	0	1	2	0	1	1	0	1	0	2	0	1
LTR			0					1					0					0		
Control,RT	Split Phase			Inclu		Split Phase			Inclu		Protected			Inclu		Protected			Ove	

	NB L	NB T	NB R	SB L	SB T	SB R	EB L	EB T	EB R	WB L	WB T	WB R
Min Green	0	0	0	0	0	0	0	0	0	0	0	0
Base Vol	0	0	10	670	0	130	120	470	0	0	370	620
G/C	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Volume	0	0	10	737	0	143	132	470	0	0	370	620
Sat/Lane	1375	1375	1375	1375	1375	1375	1375	1375	1375	1375	1375	1375
SatAdj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes	0.00	1.00	1.00	2.00	0.00	1.00	2.00	2.00	0.00	1.00	2.00	1.00
Saturation	0	1375	1375	2750	0	1375	2750	2750	0	1375	2750	1375
Vol/Sat	0.00	0.00	0.01	0.27	0.00	0.10	0.05	0.17	0.00	0.00	0.13	0.45
CritVolume			10	0			66					620
CriticalMove			******	******			******					******

Critical Volume/Capacity: 0.506 — Average Delay: xxxxxx — Level Of Service: A

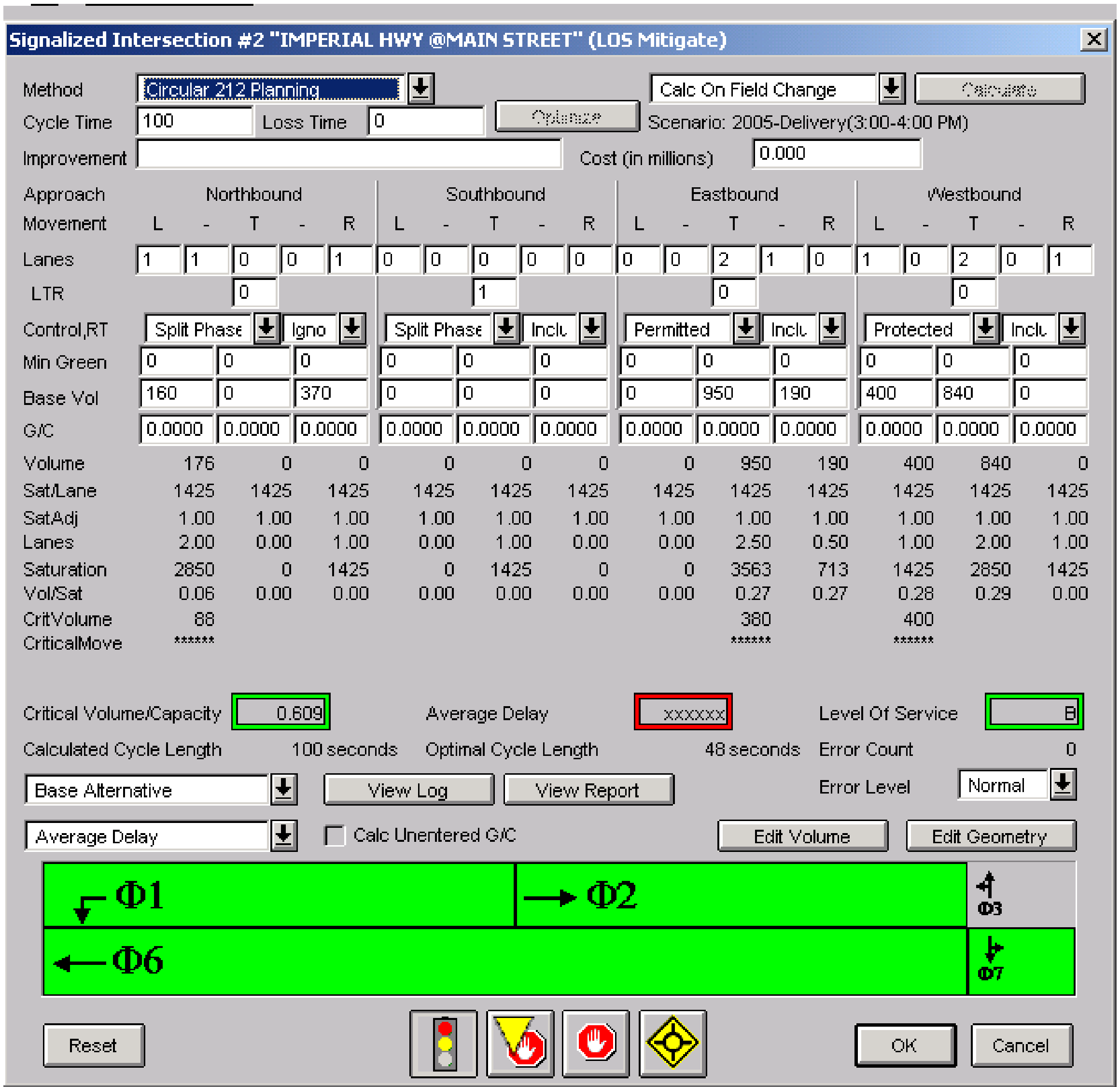
Calculated Cycle Length: 100 seconds — Optimal Cycle Length: 101 seconds — Error Count: 0

Base Alternative — View Log — View Report — Error Level: Normal

Average Delay — Calc Unentered G/C — Edit Volume — Edit Geometry

Φ2 — Φ3 — Φ5 — Φ6 — Φ7

Reset — OK — Cancel



Signalized Intersection #2 "IMPERIAL HWY @MAIN STREET" (LOS Mitigate)

Method: Circular 212 Planning | Calc On Field Change | Calculate

Cycle Time: 100 | Loss Time: 0 | Optimize | Scenario: 2005-Delivery(3:00-4:00 PM)

Improvement: | Cost (in millions): 0.000

Approach	Northbound					Southbound					Eastbound					Westbound				
Movement	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Lanes	1	1	0	0	1	0	0	0	0	0	0	0	2	1	0	1	0	2	0	1
LTR			0					1					0					0		
Control,RT	Split Phase			Igno		Split Phase			Inclu		Permitted			Inclu		Protected			Inclu	

	NB L	NB T	NB R	SB L	SB T	SB R	EB L	EB T	EB R	WB L	WB T	WB R
Min Green	0	0	0	0	0	0	0	0	0	0	0	0
Base Vol	160	0	370	0	0	0	0	950	190	400	840	0
G/C	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Volume	176	0	0	0	0	0	0	950	190	400	840	0
Sat/Lane	1425	1425	1425	1425	1425	1425	1425	1425	1425	1425	1425	1425
SatAdj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes	2.00	0.00	1.00	0.00	1.00	0.00	0.00	2.50	0.50	1.00	2.00	1.00
Saturation	2850	0	1425	0	1425	0	0	3563	713	1425	2850	1425
Vol/Sat	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.27	0.27	0.28	0.29	0.00
CritVolume	88							380		400		
CriticalMove	******							******		******		

Critical Volume/Capacity: 0.609 | Average Delay: xxxxxx | Level Of Service: B

Calculated Cycle Length: 100 seconds | Optimal Cycle Length: 48 seconds | Error Count: 0

Base Alternative | View Log | View Report | Error Level: Normal

Average Delay | Calc Unentered G/C | Edit Volume | Edit Geometry

Reset | OK | Cancel

TRAFFIX Adjusted Baseline (2005) Analysis Results Report—Employee PM Peak Hour

Traffix 7.6.0115 (c) 2003 Dowling Assoc. Licensed to R & A, CHICAGO, IL
2005-PM Peak (3:30-4:30 PM) Tue Jan 17, 2005 21:42:44 Page 1-1

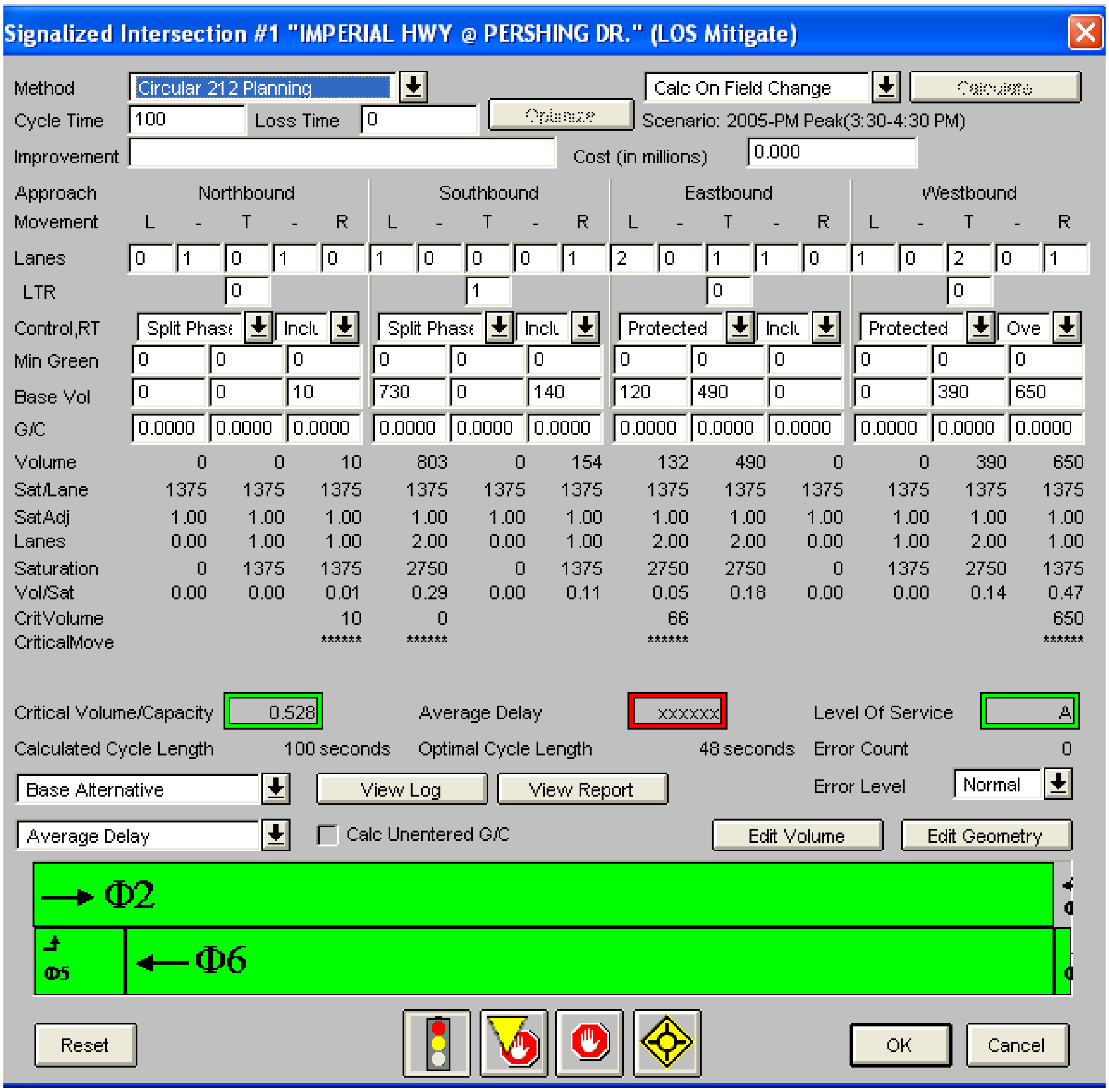
LAX SOUTH AIRFIELD EIR

Impact Analysis Report
Level Of Service

Intersection	LOS	V/C
# 1 IMPERIAL HWY @ PERSHING DR.	A	0.528
# 2 IMPERIAL HWY @MAIN STREET	B	0.657
# 3 IMPERIAL HWY @ SEPULVEDA BL.	F	1.196
# 4 IMPERIAL HWY @ NASH ST.	A	0.387
# 5 IMPERIAL HWY. @ DOUGLAS ST.	A	0.409
# 6 IMPERIAL HWY. @ AVIATION BL.	C	0.780
# 7 IMPERIAL HWY. @ 105 RAMP	D	0.839
# 8 IMPERIAL HWY. @ La CIENEGA BLV	A	0.512
# 9 IMPERIAL HWY. @ 405 NORTH RAMP	A	0.456
# 10 AVIATION BLVD. @ CENTURY BLVD.	F	1.016
# 11 AVIATION BLVD. @ 111TH	C	0.717
# 12 La CIENEGA BLVD. @ 405 S/B RAP	C	0.702
# 13 La CIENEGA BLVD. @ CENTURY BLV	E	0.908
# 14 La CIENEGA BLVD. @ 405 S/B RAM	A	0.567
# 15 La CIENEGA BLVD. @ 104 TH STRE	A	0.526
# 16 La CIENEGA BLVD. @ LENNOX BLVD	A	0.460
# 17 La CIENEGA BLVD. @ 111TH STREE	A	0.580
# 18 La CIENEGA BLVD. @ 405 S/B RAM	A	0.435
# 19 CENTURY BLVD. @ 405 N/B RAMP	A	0.585

Traffix 7.6.0115 (c) 2003 Dowling Assoc. Licensed to R & A, CHICAGO, IL

TRAFFIX Adjusted Baseline (2005) Employee PM Peak Hour Intersection Summary Reports



Signalized Intersection #2 "IMPERIAL HWY @MAIN STREET" (LOS Mitigate)

Method: Circular 212 Planning | Calc On Field Change | Calculate

Cycle Time: 100 | Loss Time: 0 | Optimize | Scenario: 2005-PM Peak(3:30-4:30 PM)

Improvement: | Cost (in millions): 0.000

Approach	Northbound			Southbound			Eastbound			Westbound		
Movement	L	T	R	L	T	R	L	T	R	L	T	R
Lanes	1 1	0 0	1	0 0	0 0	0	0 0	2 1	0	1 0	2 0	1
LTR		0			1			0			0	
Control,RT	Split Phase		Igno	Split Phase		Inclu	Permitted		Inclu	Protected		Inclu
Min Green	0	0	0	0	0	0	0	0	0	0	0	0
Base Vol	170	0	370	0	0	0	0	980	230	440	910	0
G/C	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Volume	187	0	0	0	0	0	0	980	230	440	910	0
Sat/Lane	1425	1425	1425	1425	1425	1425	1425	1425	1425	1425	1425	1425
SatAdj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes	2.00	0.00	1.00	0.00	1.00	0.00	0.00	2.43	0.57	1.00	2.00	1.00
Saturation	2850	0	1425	0	1425	0	0	3462	813	1425	2850	1425
Vol/Sat	0.07	0.00	0.00	0.00	0.00	0.00	0.00	0.28	0.28	0.31	0.32	0.00
CritVolume	94							403		440		
CriticalMove	******							******		******		

Critical Volume/Capacity: 0.657 | Average Delay: xxxxxx | Level Of Service: B

Calculated Cycle Length: 100 seconds | Optimal Cycle Length: 54 seconds | Error Count: 0

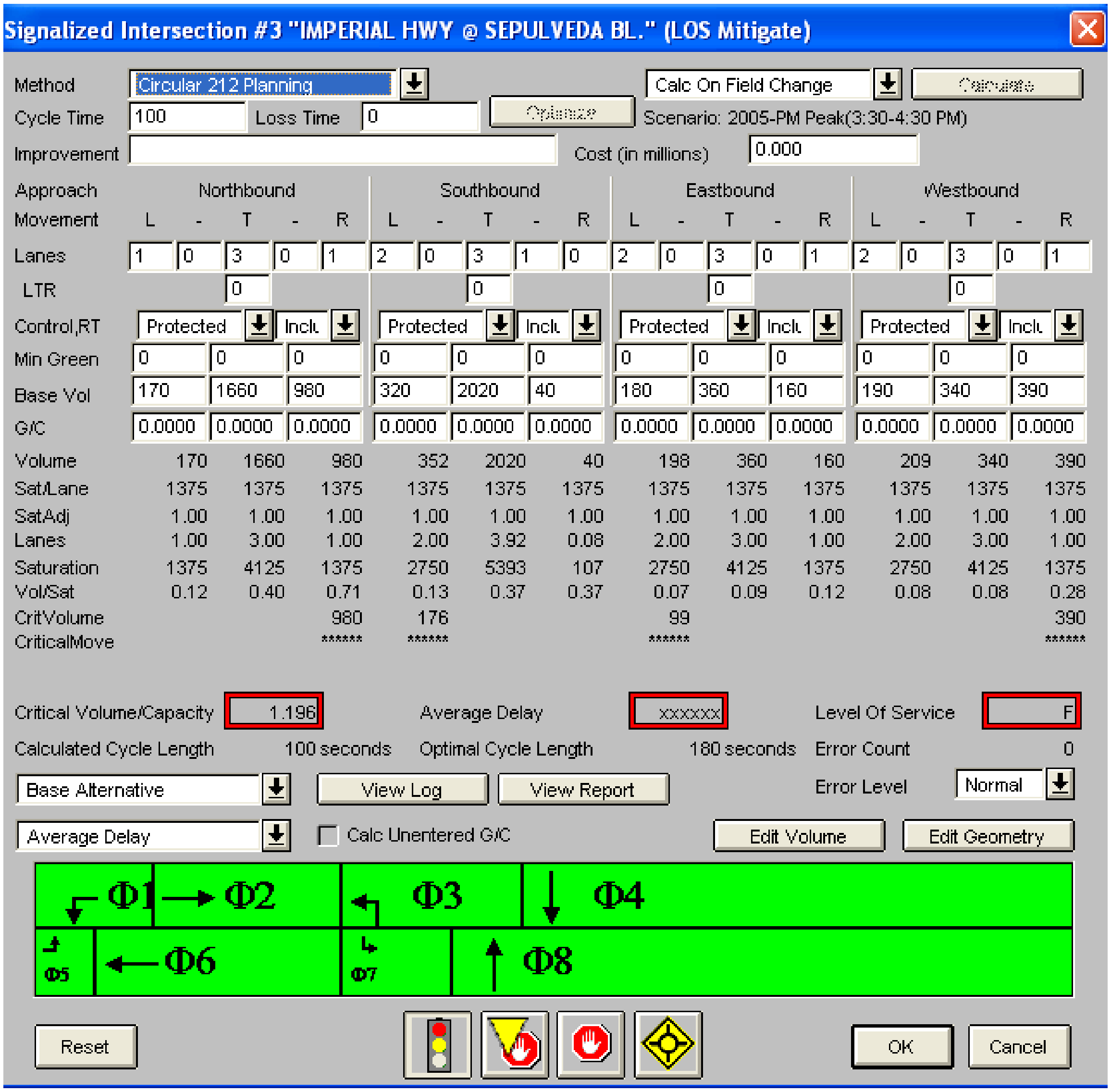
Base Alternative | View Log | View Report | Error Level: Normal

Average Delay | Calc Unentered G/C | Edit Volume | Edit Geometry

Φ1 | Φ2 | Φ3

Φ6 | Φ7

Reset | OK | Cancel



Signalized Intersection #3 "IMPERIAL HWY @ SEPULVEDA BL." (LOS Mitigate)

Method: Circular 212 Planning | Calc On Field Change | Calculate

Cycle Time: 100 | Loss Time: 0 | Optimize | Scenario: 2005-PM Peak(3:30-4:30 PM)

Improvement: | Cost (in millions): 0.000

Approach	Northbound			Southbound			Eastbound			Westbound		
Movement	L	T	R	L	T	R	L	T	R	L	T	R
Lanes	1 - 0	3 - 0	1	2 - 0	3 - 1	0	2 - 0	3 - 0	1	2 - 0	3 - 0	1
LTR		0			0			0			0	
Control,RT	Protected		Inclu	Protected		Inclu	Protected		Inclu	Protected		Inclu
Min Green	0	0	0	0	0	0	0	0	0	0	0	0
Base Vol	170	1660	980	320	2020	40	180	360	160	190	340	390
G/C	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Volume	170	1660	980	352	2020	40	198	360	160	209	340	390
Sat/Lane	1375	1375	1375	1375	1375	1375	1375	1375	1375	1375	1375	1375
SatAdj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes	1.00	3.00	1.00	2.00	3.92	0.08	2.00	3.00	1.00	2.00	3.00	1.00
Saturation	1375	4125	1375	2750	5393	107	2750	4125	1375	2750	4125	1375
Vol/Sat	0.12	0.40	0.71	0.13	0.37	0.37	0.07	0.09	0.12	0.08	0.08	0.28
CritVolume			980	176			99					390
CriticalMove			******	******			******					******

Critical Volume/Capacity: 1.196 | Average Delay: xxxxxx | Level Of Service: F

Calculated Cycle Length: 100 seconds | Optimal Cycle Length: 180 seconds | Error Count: 0

Base Alternative | View Log | View Report | Error Level: Normal

Average Delay | Calc Unentered G/C | Edit Volume | Edit Geometry

Reset | OK | Cancel

Signalized Intersection #4 "IMPERIAL HWY @ NASH ST." (LOS Mitigate)

Method: Circular 212 Planning | Calc On Field Change | Calculate

Cycle Time: 100 | Loss Time: 0 | Optimize | Scenario: 2005-PM Peak(3:30-4:30 PM)

Improvement: | Cost (in millions): 0.000

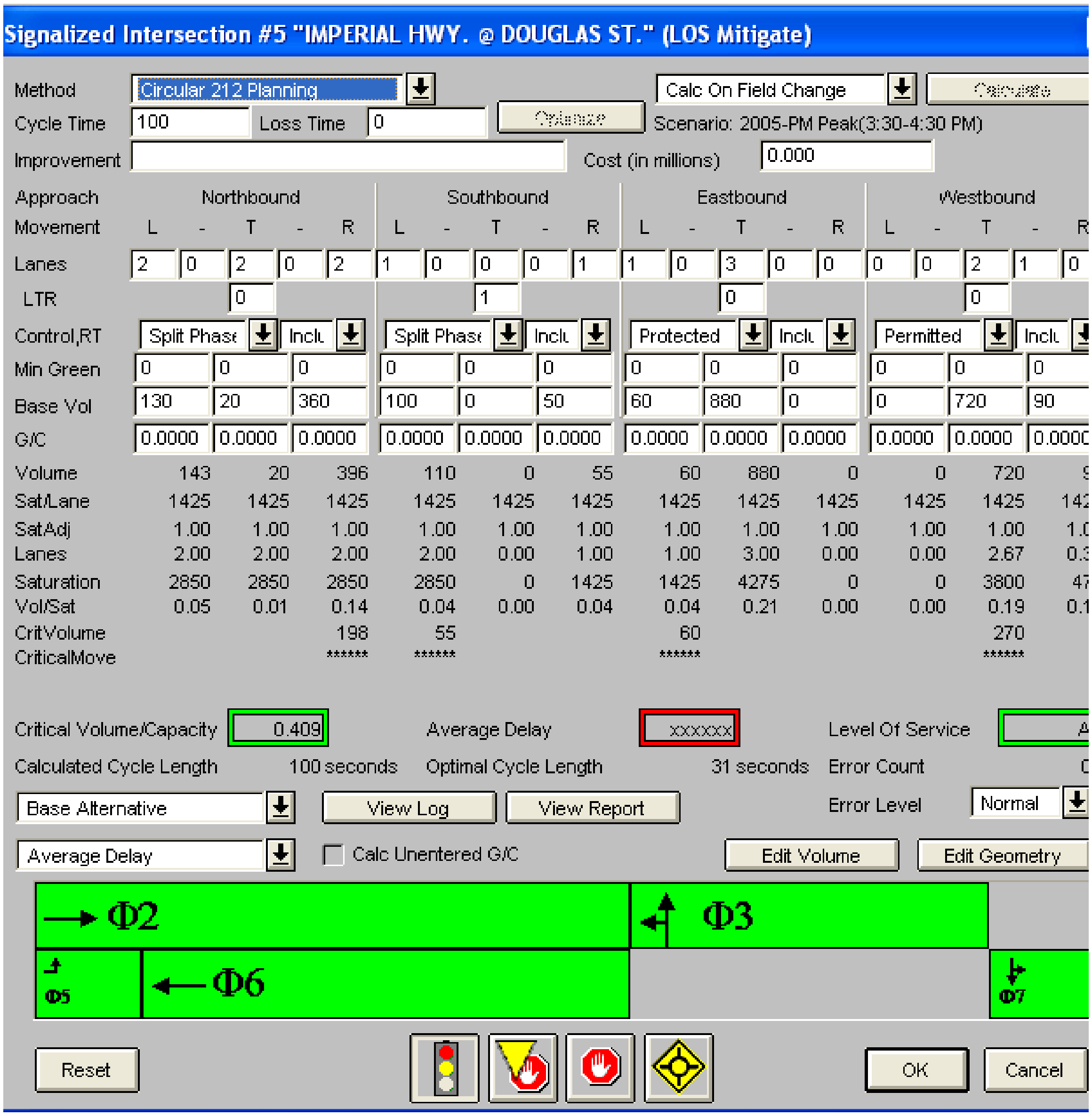
Approach	Northbound			Southbound			Eastbound			Westbound		
Movement	L	T	R	L	T	R	L	T	R	L	T	R
Lanes	0 - 0	0 - 0	0	1 - 1	0 - 1	1	0 - 0	2 - 1	0	2 - 0	3 - 0	0
LTR		0			0			0			0	
Control,RT	Split Phase		Inclu	Split Phase		Inclu	Permitted		Inclu	Protected		Inclu
Min Green	0	0	0	0	0	0	0	0	0	0	0	0
Base Vol	0	0	0	90	160	300	0	910	100	90	890	0
G/C	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Volume	0	0	0	99	160	330	0	910	100	99	890	0
Sat/Lane	1425	1425	1425	1425	1425	1425	1425	1425	1425	1425	1425	1425
SatAdj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes	0.00	0.00	0.00	1.00	1.00	2.00	0.00	2.70	0.30	2.00	3.00	0.00
Saturation	0	0	0	1425	1425	2850	0	3852	423	2850	4275	0
Vol/Sat	0.00	0.00	0.00	0.07	0.11	0.12	0.00	0.24	0.24	0.03	0.21	0.00
CritVolume						165		337		50		
CriticalMove						******		******		******		

Critical Volume/Capacity	0.387	Average Delay	xxxxxx	Level Of Service	A
Calculated Cycle Length	100 seconds	Optimal Cycle Length	30 seconds	Error Count	0
				Error Level	Normal

Base Alternative | View Log | View Report

Average Delay | Calc Unentered G/C | Edit Volume | Edit Geometry

Reset | OK | Cancel



Signalized Intersection #5 "IMPERIAL HWY. @ DOUGLAS ST." (LOS Mitigate)

Method: Circular 212 Planning — Calc On Field Change — Calculate
Cycle Time: 100 — Loss Time: 0 — Optimize — Scenario: 2005-PM Peak(3:30-4:30 PM)
Improvement: — Cost (in millions): 0.000

Approach	Northbound			Southbound			Eastbound			Westbound		
Movement	L	T	R	L	T	R	L	T	R	L	T	R
Lanes	2 0	2 0	2	1 0	0 0	1	1 0	3 0	0	0 0	2 1	0
LTR		0			1			0			0	
Control,RT	Split Phase		Incl.	Split Phase		Incl.	Protected		Incl.	Permitted		Incl.
Min Green	0	0	0	0	0	0	0	0	0	0	0	0
Base Vol	130	20	360	100	0	50	60	880	0	0	720	90
G/C	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Volume	143	20	396	110	0	55	60	880	0	0	720	9
Sat/Lane	1425	1425	1425	1425	1425	1425	1425	1425	1425	1425	1425	142
SatAdj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.0
Lanes	2.00	2.00	2.00	2.00	0.00	1.00	1.00	3.00	0.00	0.00	2.67	0.3
Saturation	2850	2850	2850	2850	0	1425	1425	4275	0	0	3800	47
Vol/Sat	0.05	0.01	0.14	0.04	0.00	0.04	0.04	0.21	0.00	0.00	0.19	0.1
CritVolume			198	55			60				270	
CriticalMove			******	******			******				******	

Critical Volume/Capacity: 0.409 — Average Delay: xxxxxx — Level Of Service: A
Calculated Cycle Length: 100 seconds — Optimal Cycle Length: 31 seconds — Error Count: 0
Base Alternative — View Log — View Report — Error Level: Normal
Average Delay — Calc Unentered G/C — Edit Volume — Edit Geometry

Φ2 Φ3 Φ5 Φ6 Φ7

Reset — OK — Cancel

Signalized Intersection #6 "IMPERIAL HWY. @ AVIATION BL." (LOS Mitigate)

Method: Circular 212 Planning | Calc On Field Change | Calculate
Cycle Time: 100 | Loss Time: 0 | Optimize | Scenario: 2005-PM Peak(3:30-4:30 PM)
Improvement: | Cost (in millions): 0.000

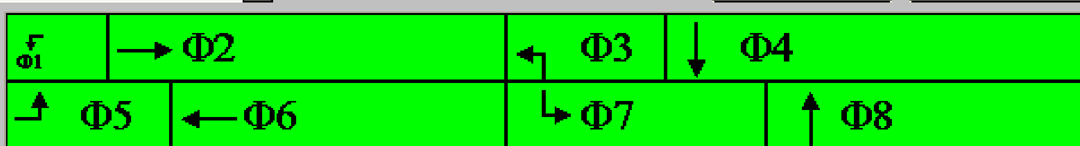
Approach	Northbound					Southbound					Eastbound					Westbound				
Movement	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Lanes	2	0	2	0	1	2	0	1	1	1	2	0	2	1	0	2	0	3	0	1
LTR			0					0					0					0		

Approach	NB L	NB T	NB R	SB L	SB T	SB R	EB L	EB T	EB R	WB L	WB T	WB R
Control,RT	Protected		Ove	Protected		Ove	Protected		Inclu	Protected		Ove
Min Green	0	0	0	0	0	0	0	0	0	0	0	0
Base Vol	180	490	420	470	520	150	240	920	260	190	520	520
G/C	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Volume	198	490	420	517	520	165	264	920	260	209	520	520
Sat/Lane	1375	1375	1375	1375	1375	1375	1375	1375	1375	1375	1375	1375
SatAdj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes	2.00	2.00	1.00	2.00	2.00	1.00	2.00	2.34	0.66	2.00	3.00	1.00
Saturation	2750	2750	1375	2750	2750	1375	2750	3216	909	2750	4125	1375
Vol/Sat	0.07	0.18	0.31	0.19	0.19	0.12	0.10	0.29	0.29	0.08	0.13	0.38
CritVolume			420	259				393		0		
CriticalMove			******	******				******		******		

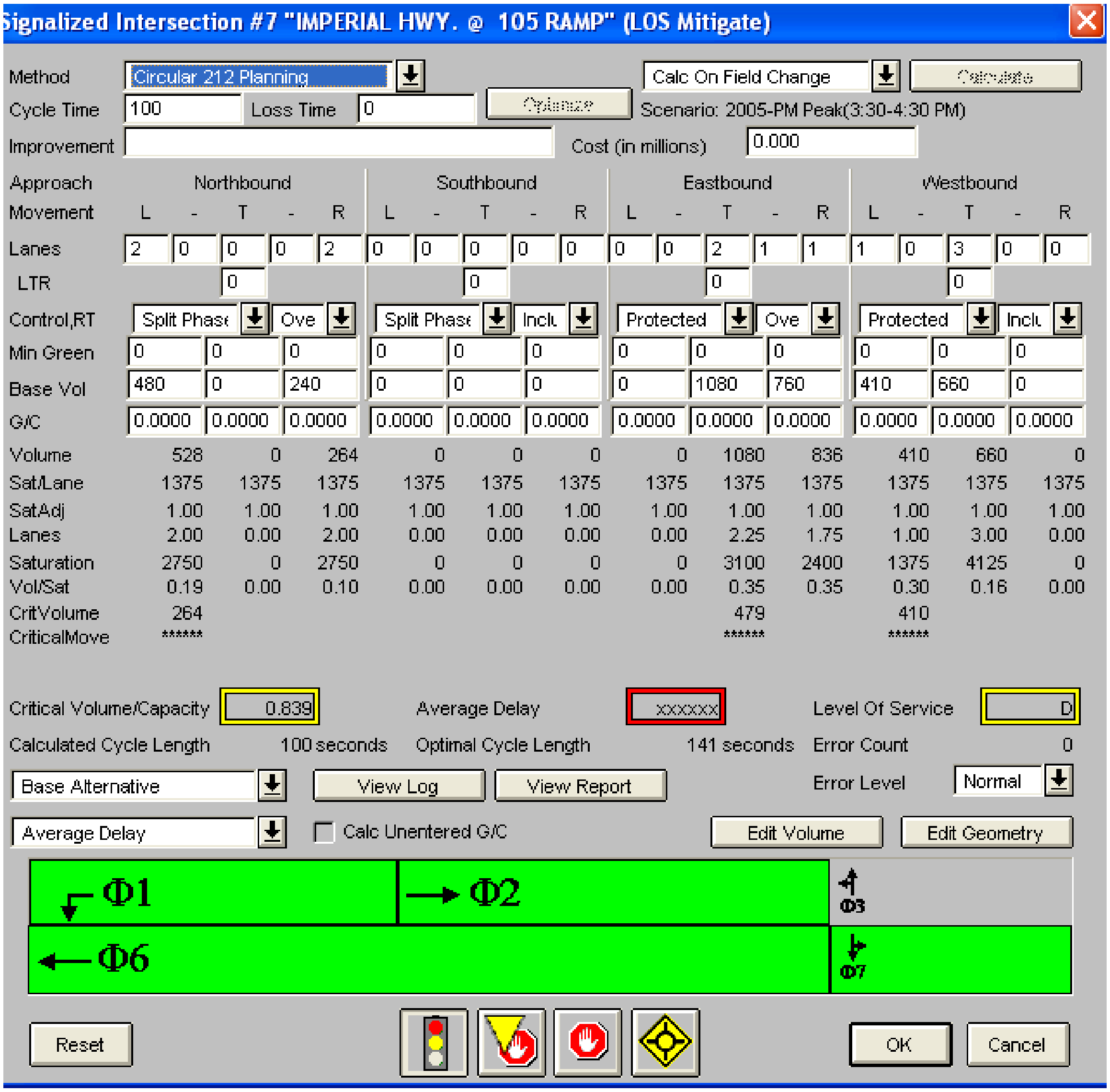
Critical Volume/Capacity: 0.780 | Average Delay: xxxxxx | Level Of Service: C
Calculated Cycle Length: 100 seconds | Optimal Cycle Length: 103 seconds | Error Count: 0

Base Alternative | View Log | View Report | Error Level: Normal

Average Delay | Calc Unentered G/C | Edit Volume | Edit Geometry



Reset | OK | Cancel


Signalized Intersection #7 "IMPERIAL HWY. @ 105 RAMP" (LOS Mitigate)

Method: Circular 212 Planning — Calc On Field Change — Calculate
Cycle Time: 100 — Loss Time: 0 — Optimize — Scenario: 2005-PM Peak(3:30-4:30 PM)
Improvement: — Cost (in millions): 0.000

Approach	Northbound			Southbound			Eastbound			Westbound		
Movement	L	T	R	L	T	R	L	T	R	L	T	R
Lanes	2 / 0	0 / 0	2	0 / 0	0 / 0	0	0 / 0	2 / 1	1	1 / 0	3 / 0	0
LTR		0			0			0			0	
Control,RT	Split Phase		Ove	Split Phase		Inclu	Protected		Ove	Protected		Inclu
Min Green	0	0	0	0	0	0	0	0	0	0	0	0
Base Vol	480	0	240	0	0	0	0	1080	760	410	660	0
G/C	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Volume	528	0	264	0	0	0	0	1080	836	410	660	0
Sat/Lane	1375	1375	1375	1375	1375	1375	1375	1375	1375	1375	1375	1375
SatAdj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes	2.00	0.00	2.00	0.00	0.00	0.00	0.00	2.25	1.75	1.00	3.00	0.00
Saturation	2750	0	2750	0	0	0	0	3100	2400	1375	4125	0
Vol/Sat	0.19	0.00	0.10	0.00	0.00	0.00	0.00	0.35	0.35	0.30	0.16	0.00
CritVolume	264							479		410		
CriticalMove	******							******		******		

Critical Volume/Capacity: 0.839 — Average Delay: xxxxxx — Level Of Service: D
Calculated Cycle Length: 100 seconds — Optimal Cycle Length: 141 seconds — Error Count: 0
Base Alternative — View Log — View Report — Error Level: Normal
Average Delay — Calc Unentered G/C — Edit Volume — Edit Geometry

Φ1 Φ2 Φ3
Φ6 Φ7

Reset — OK — Cancel

Signalized Intersection #8 "IMPERIAL HWY. @ La CIENEGA BLVD." (LOS Mitigate)

Method: Circular 212 Planning | Calc On Field Change | Calculate

Cycle Time: 100 | Loss Time: 0 | Optimize | Scenario: 2005-PM Peak(3:30-4:30 PM)

Improvement: | Cost (in millions): 0.000

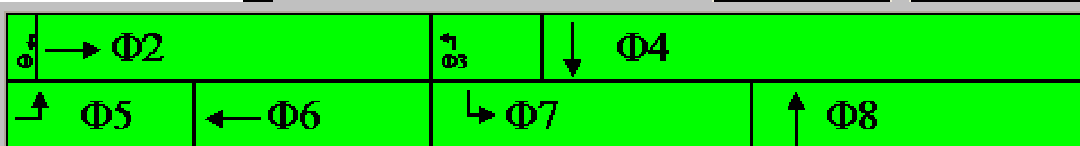
Approach	Northbound			Southbound			Eastbound			Westbound		
Movement	L	T	R	L	T	R	L	T	R	L	T	R
Lanes	2 0	1 1	1	2 0	1 1	1	2 0	3 0	2	2 0	3 0	2
LTR		0			0			0			0	
Control,RT	Protected		Inclu	Protected		Inclu	Protected		Ove	Protected		Ove
Min Green	0	0	0	0	0	0	0	0	0	0	0	0
Base Vol	110	230	380	380	360	480	230	770	190	40	470	280
G/C	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Volume	121	230	418	418	360	528	253	770	209	44	470	308
Sat/Lane	1375	1375	1375	1375	1375	1375	1375	1375	1375	1375	1375	1375
SatAdj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes	2.00	1.06	1.94	2.00	1.22	1.78	2.00	3.00	2.00	2.00	3.00	2.00
Saturation	2750	1464	2661	2750	1672	2453	2750	4125	2750	2750	4125	2750
Vol/Sat	0.04	0.16	0.16	0.15	0.22	0.22	0.09	0.19	0.08	0.02	0.11	0.11
CritVolume		216		209				257		22		
CriticalMove		******		******				******		******		

Critical Volume/Capacity: 0.512 | Average Delay: xxxxxx | Level Of Service: A

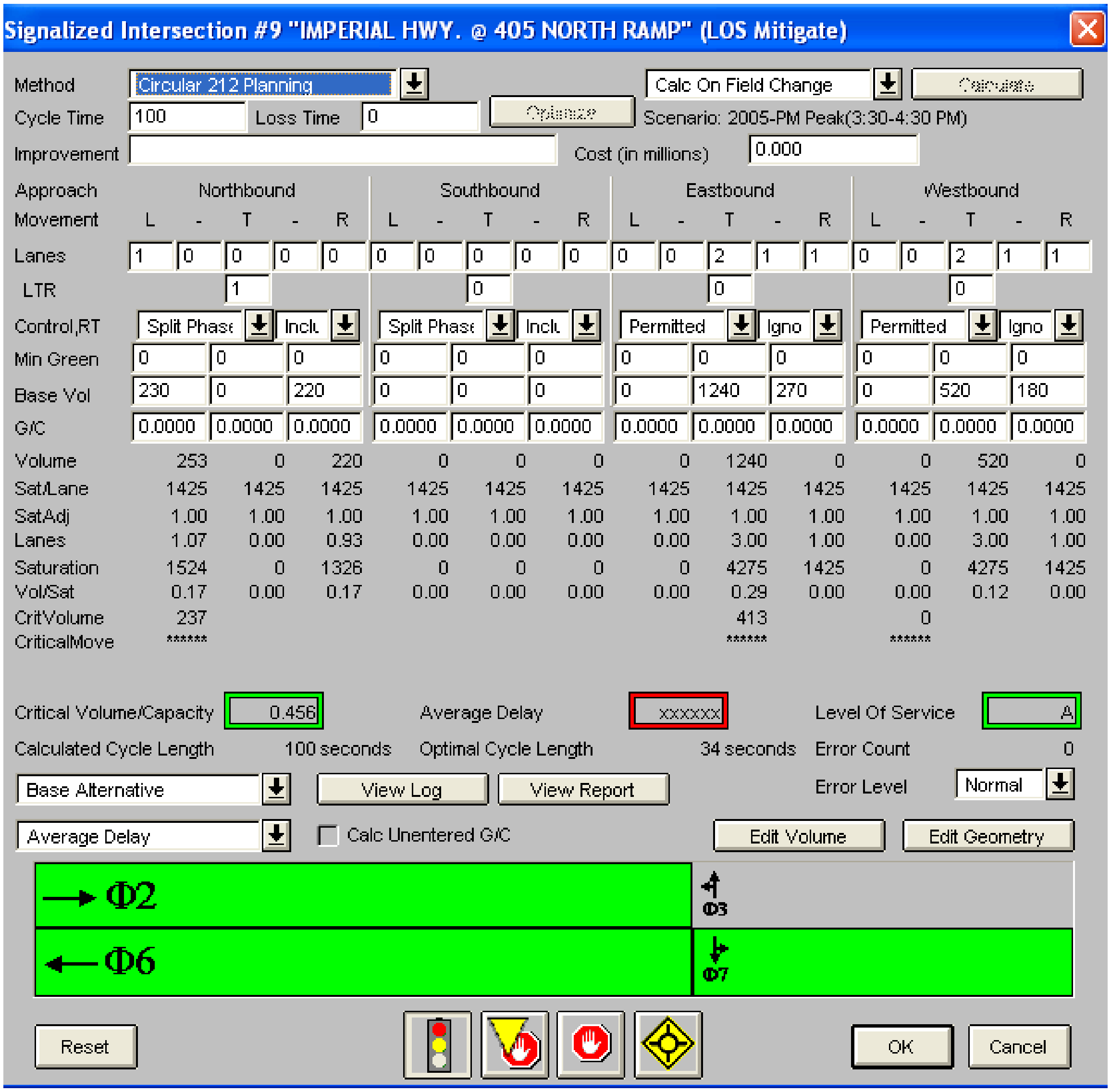
Calculated Cycle Length: 100 seconds | Optimal Cycle Length: 47 seconds | Error Count: 0

Base Alternative | View Log | View Report | Error Level: Normal

Average Delay | Calc Unentered G/C | Edit Volume | Edit Geometry



Reset | OK | Cancel



Signalized Intersection #9 "IMPERIAL HWY. @ 405 NORTH RAMP" (LOS Mitigate)

Method: Circular 212 Planning — Calc On Field Change — Calculate
Cycle Time: 100 — Loss Time: 0 — Optimize — Scenario: 2005-PM Peak(3:30-4:30 PM)
Improvement: — Cost (in millions): 0.000

Approach	Northbound					Southbound					Eastbound					Westbound				
Movement	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Lanes	1	0	0	0	0	0	0	0	0	0	0	0	2	1	1	0	0	2	1	1
LTR			1					0					0					0		

	NB L	NB T	NB R	SB L	SB T	SB R	EB L	EB T	EB R	WB L	WB T	WB R
Control,RT	Split Phase		Inclu	Split Phase		Inclu	Permitted		Igno	Permitted		Igno
Min Green	0	0	0	0	0	0	0	0	0	0	0	0
Base Vol	230	0	220	0	0	0	0	1240	270	0	520	180
G/C	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Volume	253	0	220	0	0	0	0	1240	0	0	520	0
Sat/Lane	1425	1425	1425	1425	1425	1425	1425	1425	1425	1425	1425	1425
SatAdj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes	1.07	0.00	0.93	0.00	0.00	0.00	0.00	3.00	1.00	0.00	3.00	1.00
Saturation	1524	0	1326	0	0	0	0	4275	1425	0	4275	1425
Vol/Sat	0.17	0.00	0.17	0.00	0.00	0.00	0.00	0.29	0.00	0.00	0.12	0.00
CritVolume	237							413		0		
CriticalMove	******							******		******		

Critical Volume/Capacity: 0.456 — Average Delay: xxxxxx — Level Of Service: A
Calculated Cycle Length: 100 seconds — Optimal Cycle Length: 34 seconds — Error Count: 0
Base Alternative — View Log — View Report — Error Level: Normal
Average Delay — Calc Unentered G/C — Edit Volume — Edit Geometry

Φ2 — Φ3
Φ6 — Φ7

Reset — OK — Cancel

Signalized Intersection #10 "AVIATION BLVD. @ CENTURY BLVD." (LOS Mitigate)

Method: Circular 212 Planning | Calc On Field Change | Calculate

Cycle Time: 100 | Loss Time: 0 | Optimize | Scenario: 2005-PM Peak(3:30-4:30 PM)

Improvement: | Cost (in millions): 0.000

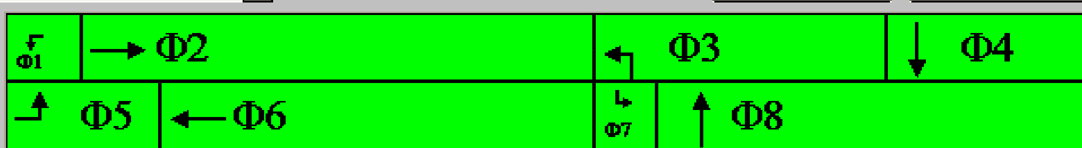
Approach	Northbound					Southbound					Eastbound					Westbound				
Movement	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Lanes	2	0	1	1	0	2	0	2	0	1	1	0	3	1	0	1	0	3	1	0
LTR			0					0					0					0		
Control,RT	Protected			Inclu		Protected			Inclu		Protected			Inclu		Protected			Inclu	
Min Green	0		0		0	0		0		0	0		0		0	0		0		0
Base Vol	690		700		110	110		510		190	160		2260		390	100		1620		150
G/C	0.0000		0.0000		0.0000	0.0000		0.0000		0.0000	0.0000		0.0000		0.0000	0.0000		0.0000		0.0000
Volume	759		700		110	121		510		190	160		2260		390	100		1620		150
Sat/Lane	1375		1375		1375	1375		1375		1375	1375		1375		1375	1375		1375		1375
SatAdj	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00
Lanes	2.00		1.73		0.27	2.00		2.00		1.00	1.00		3.41		0.59	1.00		3.66		0.34
Saturation	2750		2377		373	2750		2750		1375	1375		4691		809	1375		5034		466
Vol/Sat	0.28		0.29		0.29	0.04		0.19		0.14	0.12		0.48		0.48	0.07		0.32		0.32
CritVolume	380							255					662			100				
CriticalMove	******							******					******			******				

Critical Volume/Capacity: 1.016 | Average Delay: xxxxxx | Level Of Service: F

Calculated Cycle Length: 100 seconds | Optimal Cycle Length: 180 seconds | Error Count: 0

Base Alternative | View Log | View Report | Error Level: Normal

Average Delay | Calc Unentered G/C | Edit Volume | Edit Geometry



Reset | OK | Cancel

Signalized Intersection #11 "AVIATION BLVD. @ 111TH" (LOS Mitigate)

Method: Circular 212 Planning | Calc On Field Change | Calculate

Cycle Time: 100 | Loss Time: 0 | Optimize | Scenario: 2005-PM Peak(3:30-4:30 PM)

Improvement: | Cost (in millions): 0.000

Approach	Northbound					Southbound					Eastbound					Westbound				
Movement	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Lanes	1	0	1	1	0	1	0	1	1	0	1	0	0	1	0	1	0	1	1	0
LTR			0					0					0					0		
Control,RT	Permitted			Inclu		Permitted			Inclu		Permitted			Inclu		Permitted			Inclu	

	NB L	NB T	NB R	SB L	SB T	SB R	EB L	EB T	EB R	WB L	WB T	WB R
Min Green	0	0	0	0	0	0	0	0	0	0	0	0
Base Vol	20	1110	120	180	1040	80	110	80	30	90	50	170
G/C	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Volume	20	1110	120	180	1040	80	110	80	30	90	50	170
Sat/Lane	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500
SatAdj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes	1.00	1.80	0.20	1.00	1.86	0.14	1.00	0.73	0.27	1.00	1.00	1.00
Saturation	1500	2707	293	1500	2786	214	1500	1091	409	1500	1500	1500
Vol/Sat	0.01	0.41	0.41	0.12	0.37	0.37	0.07	0.07	0.07	0.06	0.03	0.11
CritVolume		615		180			110					170
CriticalMove		******		******			******					******

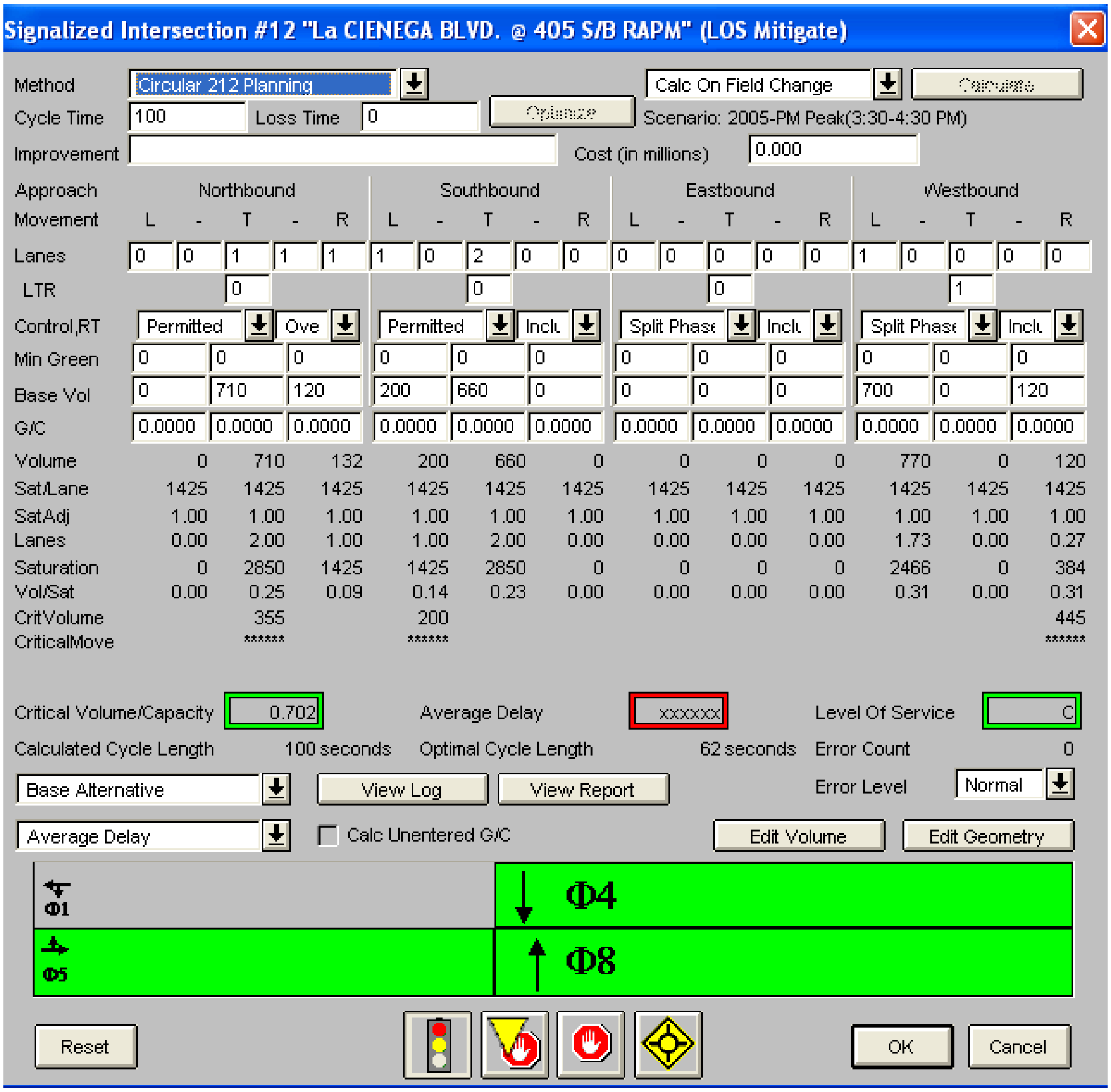
Critical Volume/Capacity: 0.717 | Average Delay: xxxxxx | Level Of Service: C

Calculated Cycle Length: 100 seconds | Optimal Cycle Length: 51 seconds | Error Count: 0

Base Alternative | View Log | View Report | Error Level: Normal

Average Delay | Calc Unentered G/C | Edit Volume | Edit Geometry

Reset | OK | Cancel



Signalized Intersection #12 "La CIENEGA BLVD. @ 405 S/B RAPM" (LOS Mitigate)

Method: Circular 212 Planning — Calc On Field Change — Calculate

Cycle Time: 100 — Loss Time: 0 — Optimize — Scenario: 2005-PM Peak(3:30-4:30 PM)

Improvement: — Cost (in millions): 0.000

Approach	Northbound					Southbound					Eastbound					Westbound				
Movement	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Lanes	0	0	1	1	1	1	0	2	0	0	0	0	0	0	0	1	0	0	0	0
LTR			0					0					0					1		

	Northbound			Southbound			Eastbound			Westbound		
Control,RT	Permitted		Ove	Permitted		Inclu	Split Phase		Inclu	Split Phase		Inclu
Min Green	0	0	0	0	0	0	0	0	0	0	0	0
Base Vol	0	710	120	200	660	0	0	0	0	700	0	120
G/C	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Volume	0	710	132	200	660	0	0	0	0	770	0	120
Sat/Lane	1425	1425	1425	1425	1425	1425	1425	1425	1425	1425	1425	1425
SatAdj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes	0.00	2.00	1.00	1.00	2.00	0.00	0.00	0.00	0.00	1.73	0.00	0.27
Saturation	0	2850	1425	1425	2850	0	0	0	0	2466	0	384
Vol/Sat	0.00	0.25	0.09	0.14	0.23	0.00	0.00	0.00	0.00	0.31	0.00	0.31
CritVolume		355		200								445
CriticalMove		******		******								******

Critical Volume/Capacity: 0.702 — Average Delay: xxxxxx — Level Of Service: C

Calculated Cycle Length: 100 seconds — Optimal Cycle Length: 62 seconds — Error Count: 0

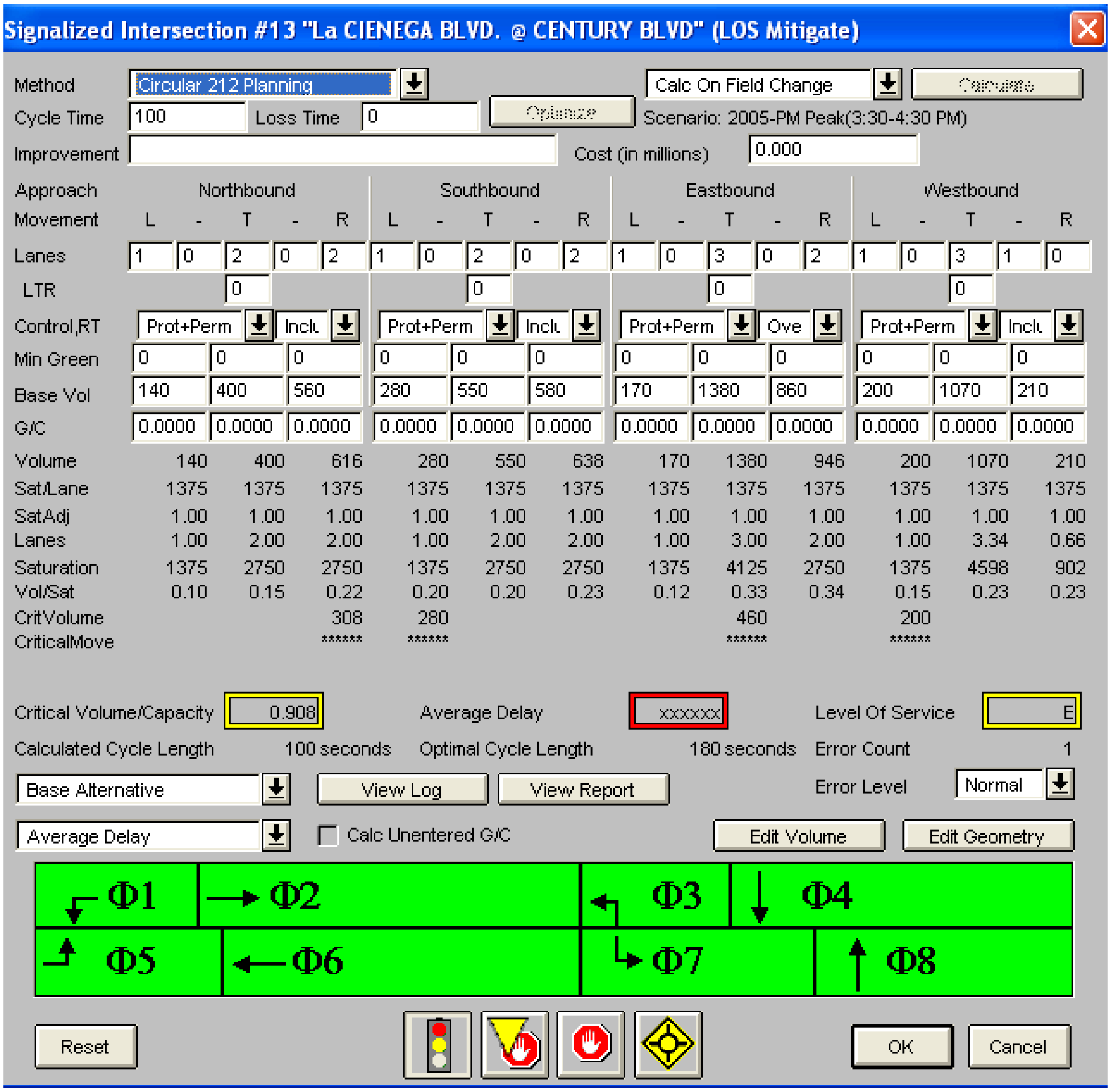
Base Alternative — View Log — View Report — Error Level: Normal

Average Delay — Calc Unentered G/C — Edit Volume — Edit Geometry

Φ1 — Φ4

Φ5 — Φ8

Reset — OK — Cancel



Signalized Intersection #13 "La CIENEGA BLVD. @ CENTURY BLVD" (LOS Mitigate)

Method: Circular 212 Planning — Calc On Field Change — Calculate

Cycle Time: 100 — Loss Time: 0 — Optimize — Scenario: 2005-PM Peak(3:30-4:30 PM)

Improvement: — Cost (in millions): 0.000

Approach	Northbound					Southbound					Eastbound					Westbound				
Movement	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Lanes	1	0	2	0	2	1	0	2	0	2	1	0	3	0	2	1	0	3	1	0
LTR			0					0					0					0		
Control,RT	Prot+Perm			Inclu		Prot+Perm			Inclu		Prot+Perm			Ove		Prot+Perm			Inclu	
Min Green	0		0		0	0		0		0	0		0		0	0		0		0
Base Vol	140		400		560	280		550		580	170		1380		860	200		1070		210
G/C	0.0000		0.0000		0.0000	0.0000		0.0000		0.0000	0.0000		0.0000		0.0000	0.0000		0.0000		0.0000
Volume	140		400		616	280		550		638	170		1380		946	200		1070		210
Sat/Lane	1375		1375		1375	1375		1375		1375	1375		1375		1375	1375		1375		1375
SatAdj	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00
Lanes	1.00		2.00		2.00	1.00		2.00		2.00	1.00		3.00		2.00	1.00		3.34		0.66
Saturation	1375		2750		2750	1375		2750		2750	1375		4125		2750	1375		4598		902
Vol/Sat	0.10		0.15		0.22	0.20		0.20		0.23	0.12		0.33		0.34	0.15		0.23		0.23
CritVolume					308	280							460			200				
CriticalMove					******	******							******			******				

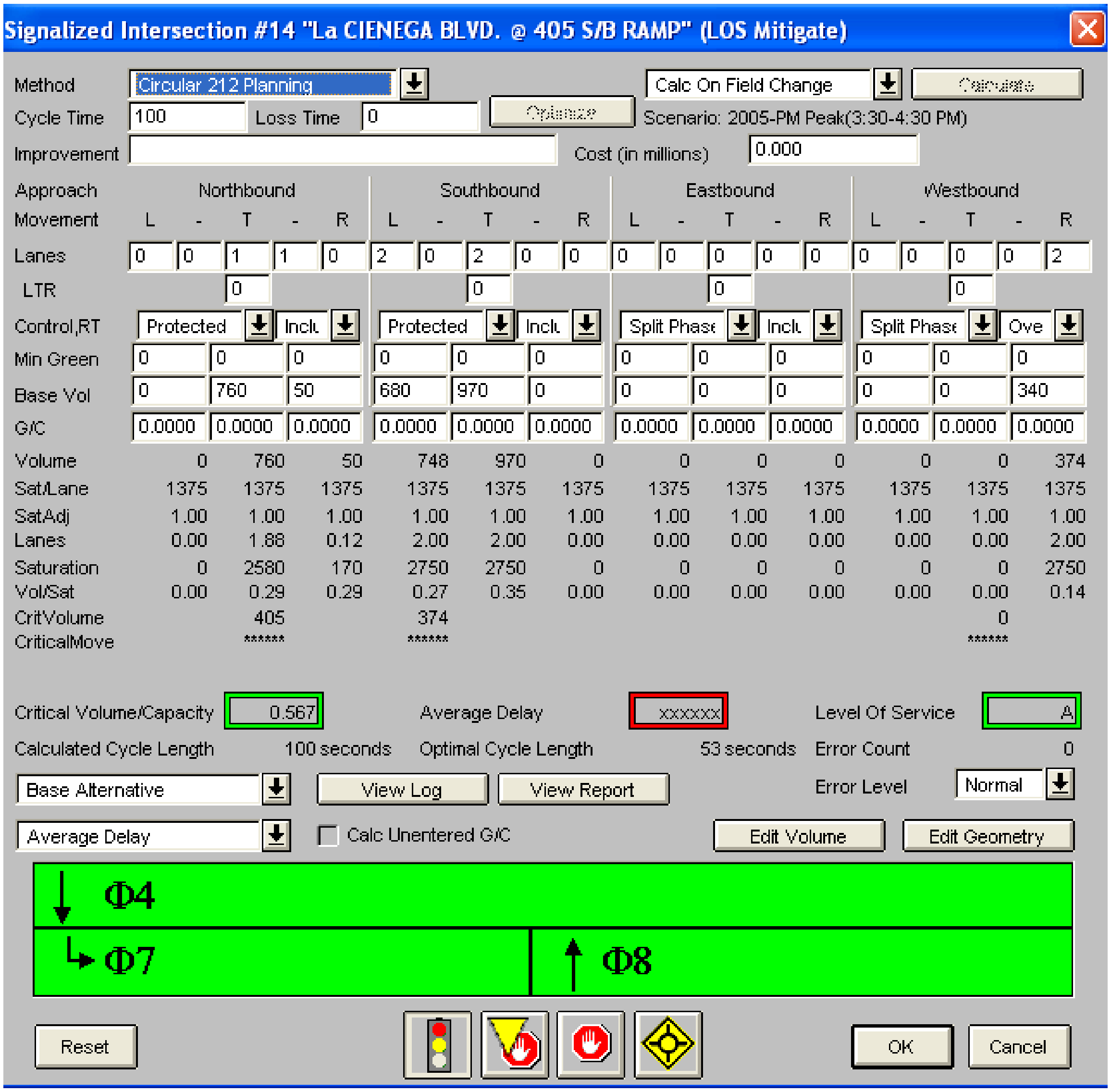
Critical Volume/Capacity: 0.908 — Average Delay: xxxxxx — Level Of Service: E

Calculated Cycle Length: 100 seconds — Optimal Cycle Length: 180 seconds — Error Count: 1

Base Alternative — View Log — View Report — Error Level: Normal

Average Delay — Calc Unentered G/C — Edit Volume — Edit Geometry

Reset — OK — Cancel



Signalized Intersection #14 "La CIENEGA BLVD. @ 405 S/B RAMP" (LOS Mitigate)

Method: Circular 212 Planning — Calc On Field Change — Calculate

Cycle Time: 100 — Loss Time: 0 — Optimize — Scenario: 2005-PM Peak(3:30-4:30 PM)

Improvement: — Cost (in millions): 0.000

Approach	Northbound			Southbound			Eastbound			Westbound		
Movement	L	T	R	L	T	R	L	T	R	L	T	R
Lanes	0 0	1 1	0	2 0	2 0	0	0 0	0 0	0	0 0	0 0	2
LTR		0			0			0			0	
Control,RT	Protected		Inclu	Protected		Inclu	Split Phase		Inclu	Split Phase		Ove
Min Green	0	0	0	0	0	0	0	0	0	0	0	0
Base Vol	0	760	50	680	970	0	0	0	0	0	0	340
G/C	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Volume	0	760	50	748	970	0	0	0	0	0	0	374
Sat/Lane	1375	1375	1375	1375	1375	1375	1375	1375	1375	1375	1375	1375
SatAdj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes	0.00	1.88	0.12	2.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	2.00
Saturation	0	2580	170	2750	2750	0	0	0	0	0	0	2750
Vol/Sat	0.00	0.29	0.29	0.27	0.35	0.00	0.00	0.00	0.00	0.00	0.00	0.14
CritVolume		405		374							0	
CriticalMove		******		******							******	

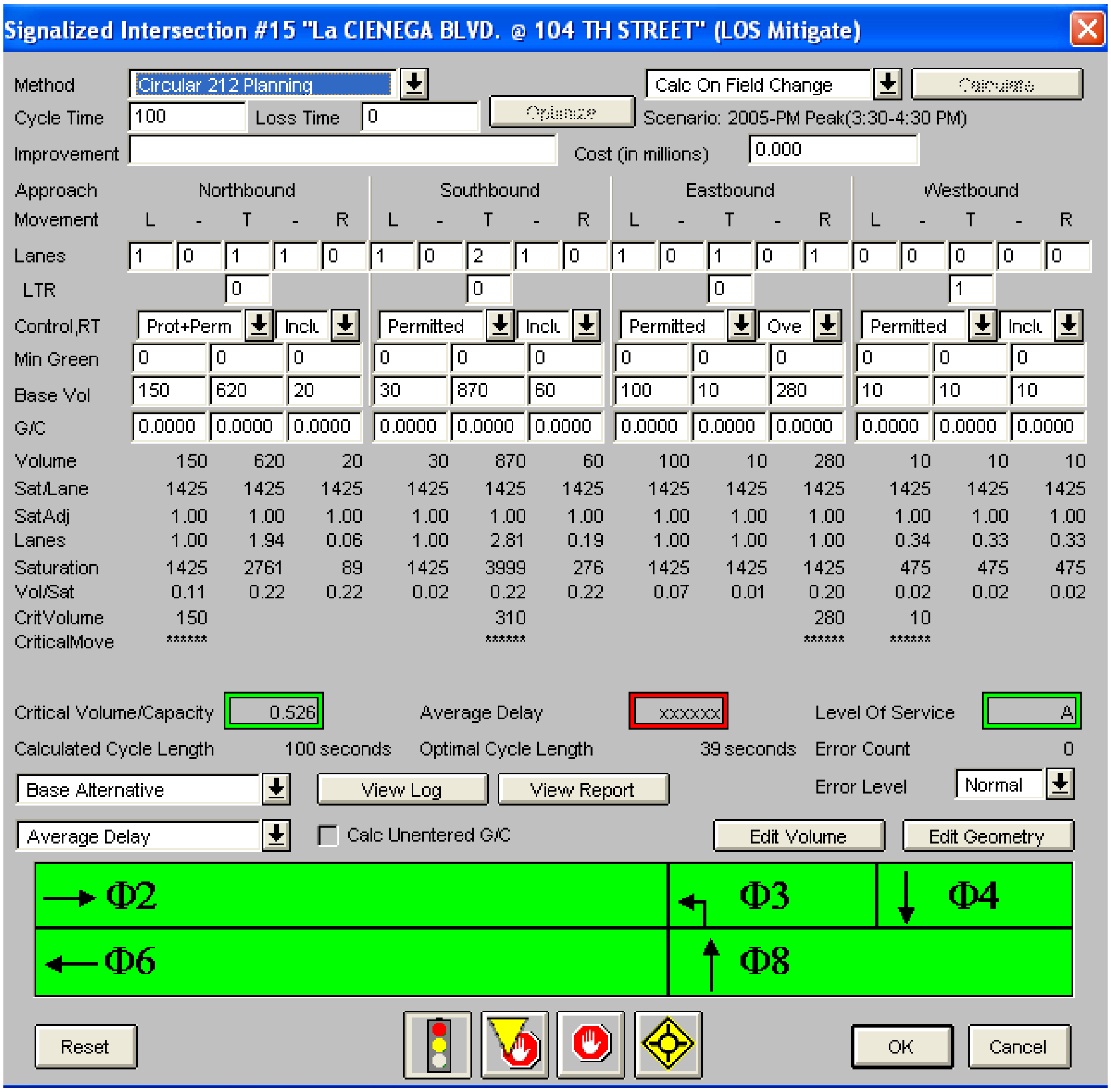
Critical Volume/Capacity: 0.567 — Average Delay: xxxxxx — Level Of Service: A

Calculated Cycle Length: 100 seconds — Optimal Cycle Length: 53 seconds — Error Count: 0

Base Alternative — View Log — View Report — Error Level: Normal

Average Delay — Calc Unentered G/C — Edit Volume — Edit Geometry

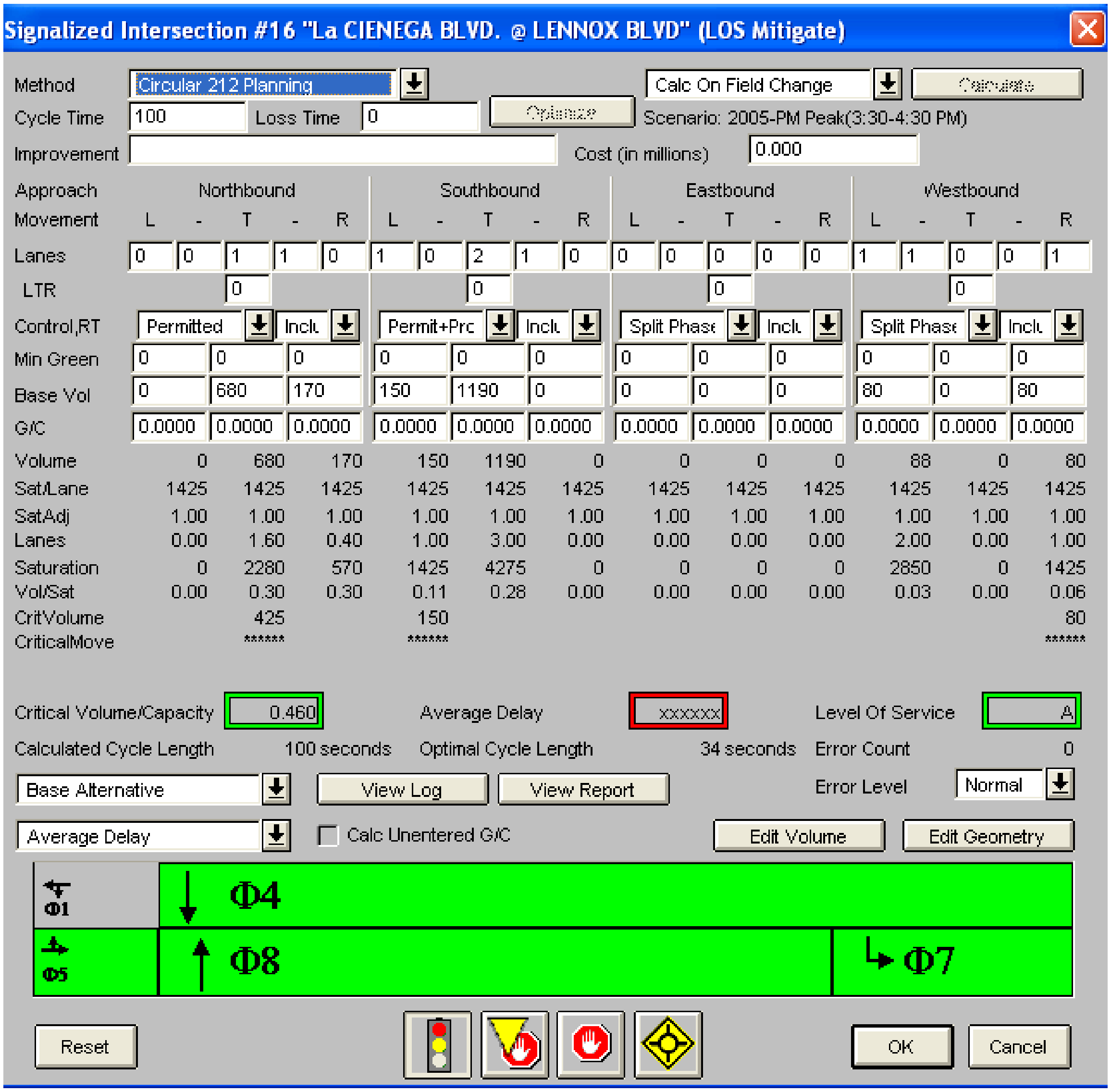
Reset — OK — Cancel


Signalized Intersection #15 "La CIENEGA BLVD. @ 104 TH STREET" (LOS Mitigate)

Method: Circular 212 Planning | Calc On Field Change | Calculate
Cycle Time: 100 | Loss Time: 0 | Optimize | Scenario: 2005-PM Peak(3:30-4:30 PM)
Improvement: | Cost (in millions): 0.000

Approach	Northbound			Southbound			Eastbound			Westbound		
Movement	L	T	R	L	T	R	L	T	R	L	T	R
Lanes	1 - 0	1 - 1	0	1 - 0	2 - 1	0	1 - 0	1 - 0	1	0 - 0	0 - 0	0
LTR		0			0			0			1	
Control,RT	Prot+Perm		Inclu	Permitted		Inclu	Permitted		Ove	Permitted		Inclu
Min Green	0	0	0	0	0	0	0	0	0	0	0	0
Base Vol	150	620	20	30	870	60	100	10	280	10	10	10
G/C	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Volume	150	620	20	30	870	60	100	10	280	10	10	10
Sat/Lane	1425	1425	1425	1425	1425	1425	1425	1425	1425	1425	1425	1425
SatAdj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes	1.00	1.94	0.06	1.00	2.81	0.19	1.00	1.00	1.00	0.34	0.33	0.33
Saturation	1425	2761	89	1425	3999	276	1425	1425	1425	475	475	475
Vol/Sat	0.11	0.22	0.22	0.02	0.22	0.22	0.07	0.01	0.20	0.02	0.02	0.02
CritVolume	150				310				280	10		
CriticalMove	******				******				******	******		

Critical Volume/Capacity: 0.526 | Average Delay: xxxxxx | Level Of Service: A
Calculated Cycle Length: 100 seconds | Optimal Cycle Length: 39 seconds | Error Count: 0
Base Alternative | View Log | View Report | Error Level: Normal
Average Delay | Calc Unentered G/C | Edit Volume | Edit Geometry



Signalized Intersection #16 "La CIENEGA BLVD. @ LENNOX BLVD" (LOS Mitigate)

Method: Circular 212 Planning | Calc On Field Change | Calculate

Cycle Time: 100 | Loss Time: 0 | Optimize | Scenario: 2005-PM Peak(3:30-4:30 PM)

Improvement: | Cost (in millions): 0.000

Approach	Northbound			Southbound			Eastbound			Westbound		
Movement	L	T	R	L	T	R	L	T	R	L	T	R
Control,RT	Permitted		Inclu	Permit+Prot		Inclu	Split Phase		Inclu	Split Phase		Inclu
Min Green	0	0	0	0	0	0	0	0	0	0	0	0
Base Vol	0	680	170	150	1190	0	0	0	0	80	0	80
G/C	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Volume	0	680	170	150	1190	0	0	0	0	88	0	80
Sat/Lane	1425	1425	1425	1425	1425	1425	1425	1425	1425	1425	1425	1425
SatAdj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes	0.00	1.60	0.40	1.00	3.00	0.00	0.00	0.00	0.00	2.00	0.00	1.00
Saturation	0	2280	570	1425	4275	0	0	0	0	2850	0	1425
Vol/Sat	0.00	0.30	0.30	0.11	0.28	0.00	0.00	0.00	0.00	0.03	0.00	0.06
CritVolume		425		150								80
CriticalMove		******		******								******

Approach	Northbound					Southbound					Eastbound					Westbound				
Movement	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Lanes	0	0	1	1	0	1	0	2	1	0	0	0	0	0	0	1	1	0	0	1
LTR			0					0					0					0		

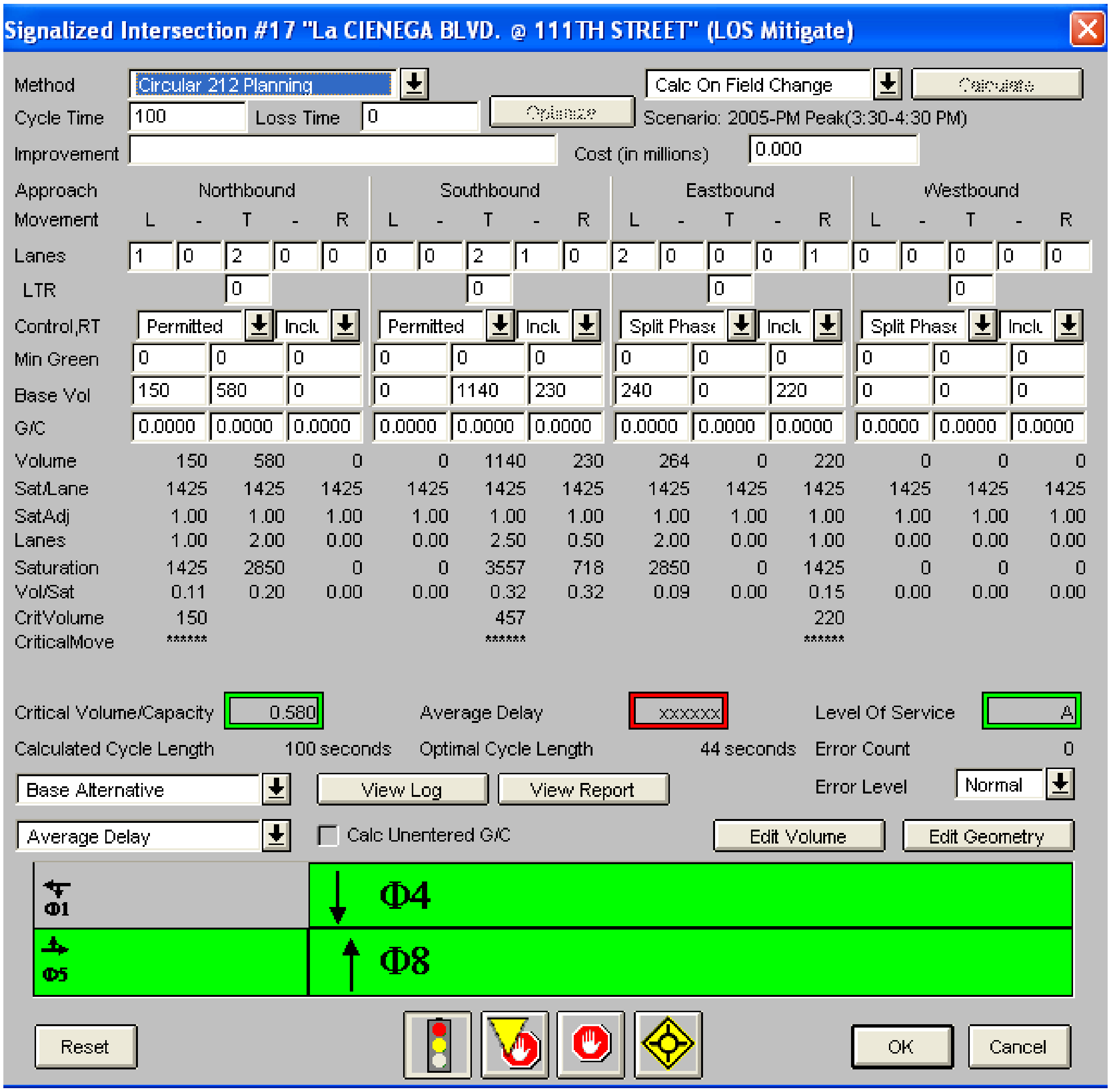
Critical Volume/Capacity: 0.460 | Average Delay: xxxxxx | Level Of Service: A

Calculated Cycle Length: 100 seconds | Optimal Cycle Length: 34 seconds | Error Count: 0

Base Alternative | View Log | View Report | Error Level: Normal

Average Delay | Calc Unentered G/C | Edit Volume | Edit Geometry

Reset | OK | Cancel



Signalized Intersection #17 "La CIENEGA BLVD. @ 111TH STREET" (LOS Mitigate)

Method: Circular 212 Planning | Calc On Field Change | Calculate

Cycle Time: 100 | Loss Time: 0 | Optimize | Scenario: 2005-PM Peak(3:30-4:30 PM)

Improvement: | Cost (in millions): 0.000

Approach	Northbound			Southbound			Eastbound			Westbound		
Movement	L	T	R	L	T	R	L	T	R	L	T	R
Lanes	1 0	2 0	0	0 0	2 1	0	2 0	0 0	1	0 0	0 0	0
LTR		0			0			0			0	
Control,RT	Permitted		Inclu	Permitted		Inclu	Split Phase		Inclu	Split Phase		Inclu
Min Green	0	0	0	0	0	0	0	0	0	0	0	0
Base Vol	150	580	0	0	1140	230	240	0	220	0	0	0
G/C	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Volume	150	580	0	0	1140	230	264	0	220	0	0	0
Sat/Lane	1425	1425	1425	1425	1425	1425	1425	1425	1425	1425	1425	1425
SatAdj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes	1.00	2.00	0.00	0.00	2.50	0.50	2.00	0.00	1.00	0.00	0.00	0.00
Saturation	1425	2850	0	0	3557	718	2850	0	1425	0	0	0
Vol/Sat	0.11	0.20	0.00	0.00	0.32	0.32	0.09	0.00	0.15	0.00	0.00	0.00
CritVolume	150				457				220			
CriticalMove	******				******				******			

Critical Volume/Capacity: 0.580 | Average Delay: xxxxxx | Level Of Service: A

Calculated Cycle Length: 100 seconds | Optimal Cycle Length: 44 seconds | Error Count: 0

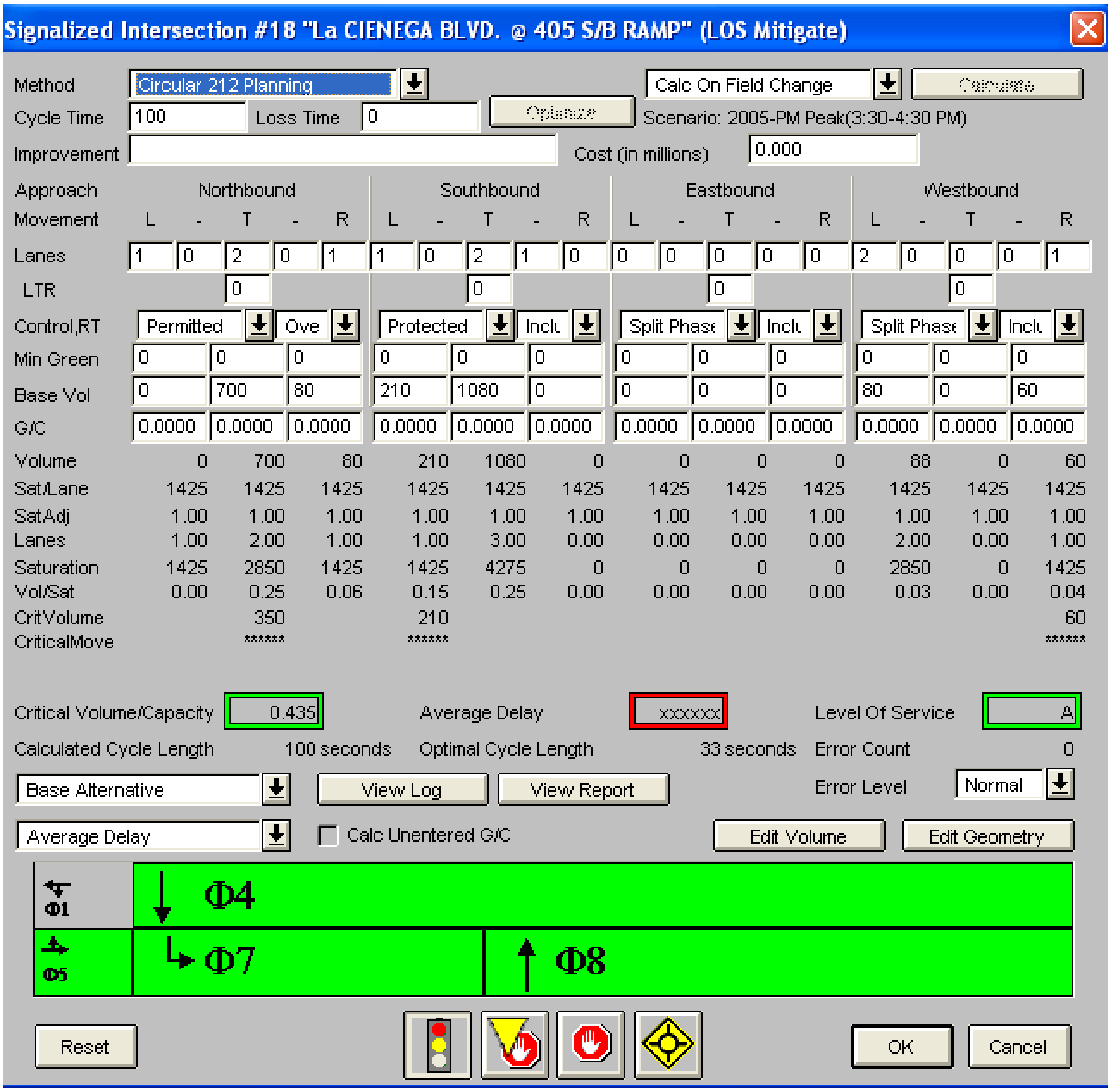
Base Alternative | View Log | View Report | Error Level: Normal

Average Delay | Calc Unentered G/C | Edit Volume | Edit Geometry

Φ1 | Φ4

Φ5 | Φ8

Reset | OK | Cancel



Signalized Intersection #18 "La CIENEGA BLVD. @ 405 S/B RAMP" (LOS Mitigate)

Method: Circular 212 Planning | Calc On Field Change | Calculate
Cycle Time: 100 | Loss Time: 0 | Optimize | Scenario: 2005-PM Peak(3:30-4:30 PM)
Improvement: | Cost (in millions): 0.000

Approach	Northbound					Southbound					Eastbound					Westbound				
Movement	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Lanes	1	0	2	0	1	1	0	2	1	0	0	0	0	0	0	2	0	0	0	1
LTR			0					0					0					0		
Control,RT	Permitted			Ove		Protected			Inclu		Split Phase			Inclu		Split Phase			Inclu	

	NB L	NB T	NB R	SB L	SB T	SB R	EB L	EB T	EB R	WB L	WB T	WB R
Min Green	0	0	0	0	0	0	0	0	0	0	0	0
Base Vol	0	700	80	210	1080	0	0	0	0	80	0	60
G/C	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Volume	0	700	80	210	1080	0	0	0	0	88	0	60
Sat/Lane	1425	1425	1425	1425	1425	1425	1425	1425	1425	1425	1425	1425
SatAdj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes	1.00	2.00	1.00	1.00	3.00	0.00	0.00	0.00	0.00	2.00	0.00	1.00
Saturation	1425	2850	1425	1425	4275	0	0	0	0	2850	0	1425
Vol/Sat	0.00	0.25	0.06	0.15	0.25	0.00	0.00	0.00	0.00	0.03	0.00	0.04
CritVolume		350		210								60
CriticalMove		******		******								******

Critical Volume/Capacity: 0.435 | Average Delay: xxxxxx | Level Of Service: A
Calculated Cycle Length: 100 seconds | Optimal Cycle Length: 33 seconds | Error Count: 0
Base Alternative | View Log | View Report | Error Level: Normal
Average Delay | Calc Unentered G/C | Edit Volume | Edit Geometry

Φ1 Φ4
Φ5 Φ7 Φ8

Reset | OK | Cancel

Signalized Intersection #19 "CENTURY BLVD. @ 405 N/B RAMP" (LOS Mitigate)

Method: Circular 212 Planning | Calc On Field Change | Calculate

Cycle Time: 100 | Loss Time: 0 | Optimize | Scenario: 2005-PM Peak(3:30-4:30 PM)

Improvement: | Cost (in millions): 0.000

Approach	Northbound					Southbound					Eastbound					Westbound				
Movement	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Lanes	2	0	0	0	1	0	0	0	0	1	1	0	3	0	2	0	0	2	1	0
LTR			0					0					0					0		
Control,RT	Protected			Inclu		Permitted			Inclu		Permitted			Inclu		Permitted			Inclu	

Approach	NB L	NB T	NB R	SB L	SB T	SB R	EB L	EB T	EB R	WB L	WB T	WB R
Min Green	0	0	0	0	0	0	0	0	0	0	0	0
Base Vol	620	0	360	0	0	0	20	1420	750	0	1150	0
G/C	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Volume	682	0	360	0	0	0	20	1420	825	0	1150	0
Sat/Lane	1425	1425	1425	1425	1425	1425	1425	1425	1425	1425	1425	1425
SatAdj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes	2.00	0.00	1.00	0.00	0.00	1.00	1.00	3.00	2.00	0.00	3.00	0.00
Saturation	2850	0	1425	0	0	1425	1425	4275	2850	0	4275	0
Vol/Sat	0.24	0.00	0.25	0.00	0.00	0.00	0.01	0.33	0.29	0.00	0.27	0.00
CritVolume			360					473		0		
CriticalMove			******					******		******		

Critical Volume/Capacity: 0.585 | Average Delay: xxxxxx | Level Of Service: A

Calculated Cycle Length: 100 seconds | Optimal Cycle Length: 45 seconds | Error Count: 0

Base Alternative | View Log | View Report | Error Level: Normal

Average Delay | Calc Unentered G/C | Edit Volume | Edit Geometry

Reset | OK | Cancel

TRAFFIX Project (2005) Analysis Results Report—Employee AM Peak Hour

Traffix 7.6.0115 (c) 2003 Dowling Assoc. Licensed to R & A, CHICAGO, IL
2005-AM Peak (6:00-7:00 AM) Sun Jan 17, 2005 15:31:51 Page 1-1

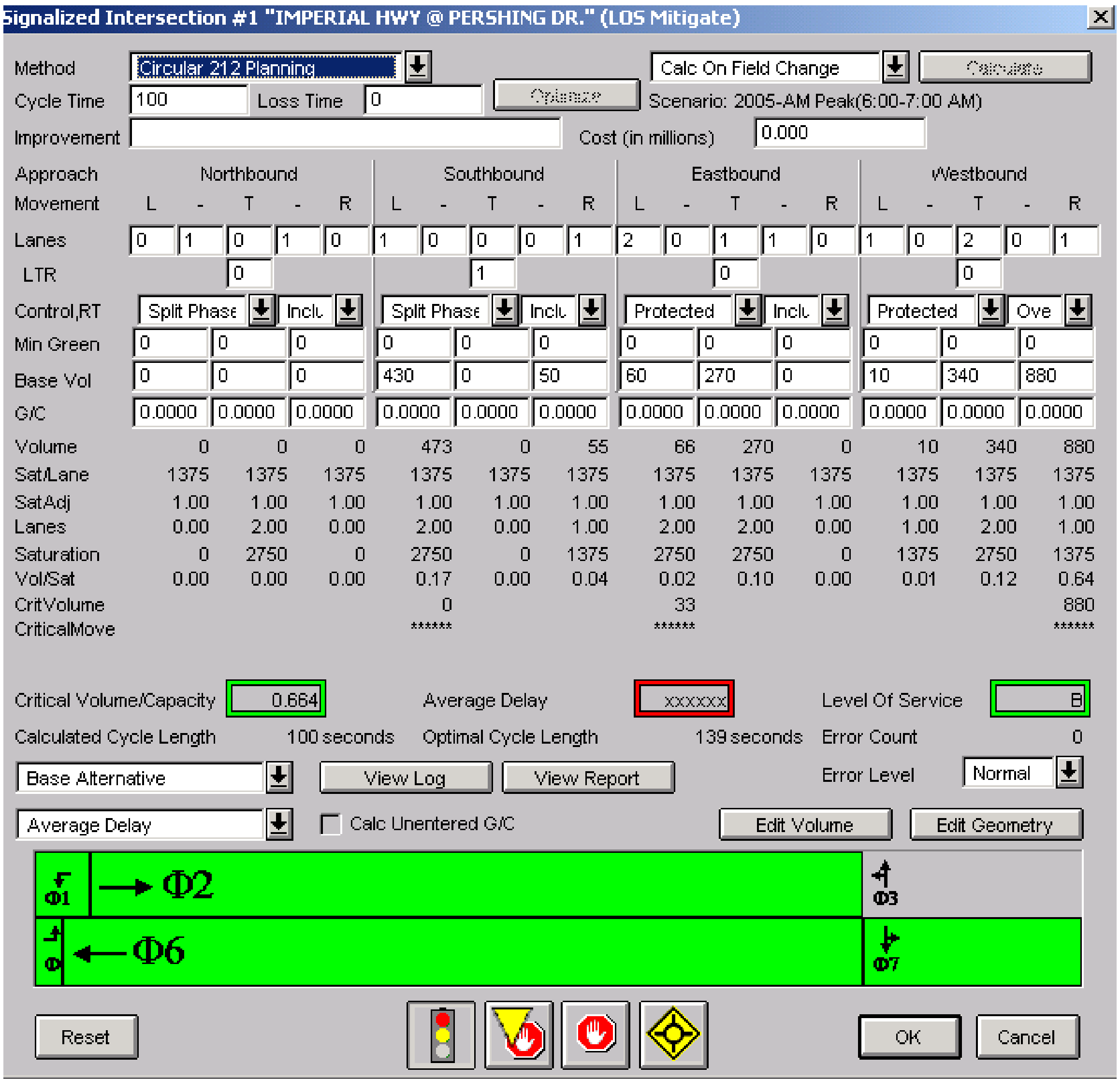
LAX SOUTH AIRFIELD EIR

Impact Analysis Report
Level Of Service

Intersection	LOS	V/C
# 1 IMPERIAL HWY @ PERSHING DR.	B	0.664
# 2 IMPERIAL HWY @MAIN STREET	A	0.444
# 3 IMPERIAL HWY @ SEPULVEDA BL.	D	0.828
# 4 IMPERIAL HWY @ NASH ST.	B	0.638
# 5 IMPERIAL HWY. @ DOUGLAS ST.	A	0.196
# 6 IMPERIAL HWY. @ AVIATION BL.	C	0.750
# 7 IMPERIAL HWY. @ 105 RAMP	A	0.540
# 8 IMPERIAL HWY. @ La CIENEGA BLV	A	0.262
# 9 IMPERIAL HWY. @ 405 NORTH RAMP	A	0.228
# 10 AVIATION BLVD. @ CENTURY BLVD.	C	0.731
# 11 AVIATION BLVD. @ 111TH	A	0.570
# 12 La CIENEGA BLVD. @ 405 S/B RAP	A	0.564
# 13 La CIENEGA BLVD. @ CENTURY BLV	C	0.724
# 14 La CIENEGA BLVD. @ 405 S/B RAM	A	0.275
# 15 La CIENEGA BLVD. @ 104 TH STRE	A	0.454
# 16 La CIENEGA BLVD. @ LENNOX BLVD	A	0.260
# 17 La CIENEGA BLVD. @ 111TH STREE	A	0.232
# 18 La CIENEGA BLVD. @ 405 S/B RAM	A	0.267
# 19 CENTURY BLVD. @ 405 N/B RAMP	C	0.758

Traffix 7.6.0115 (c) 2003 Dowling Assoc. Licensed to R & A, CHICAGO, IL

TRAFFIX Project (2005) Employee AM Peak Hour Intersection Summary Reports



Signalized Intersection #1 "IMPERIAL HWY @ PERSHING DR." (LOS Mitigate)

Method: Circular 212 Planning | Calc On Field Change | Calculate

Cycle Time: 100 | Loss Time: 0 | Optimize | Scenario: 2005-AM Peak(6:00-7:00 AM)

Improvement: | Cost (in millions): 0.000

Approach	Northbound					Southbound					Eastbound					Westbound				
Movement	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Lanes	0	1	0	1	0	1	0	0	0	1	2	0	1	1	0	1	0	2	0	1
LTR			0					1					0					0		

Approach	Northbound			Southbound			Eastbound			Westbound		
Movement	L	T	R	L	T	R	L	T	R	L	T	R
Control,RT	Split Phase		Inclu	Split Phase		Inclu	Protected		Inclu	Protected		Ove
Min Green	0	0	0	0	0	0	0	0	0	0	0	0
Base Vol	0	0	0	430	0	50	60	270	0	10	340	880
G/C	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Volume	0	0	0	473	0	55	66	270	0	10	340	880
Sat/Lane	1375	1375	1375	1375	1375	1375	1375	1375	1375	1375	1375	1375
SatAdj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes	0.00	2.00	0.00	2.00	0.00	1.00	2.00	2.00	0.00	1.00	2.00	1.00
Saturation	0	2750	0	2750	0	1375	2750	2750	0	1375	2750	1375
Vol/Sat	0.00	0.00	0.00	0.17	0.00	0.04	0.02	0.10	0.00	0.01	0.12	0.64
CritVolume				0			33					880
CriticalMove				******			******					******

Critical Volume/Capacity: 0.664 | Average Delay: xxxxxx | Level Of Service: B

Calculated Cycle Length: 100 seconds | Optimal Cycle Length: 139 seconds | Error Count: 0

Base Alternative | View Log | View Report | Error Level: Normal

Average Delay | Calc Unentered G/C | Edit Volume | Edit Geometry

Φ1 Φ2 Φ3 Φ6 Φ7

Reset | OK | Cancel

Signalized Intersection #2 "IMPERIAL HWY @MAIN STREET" (LOS Mitigate)

Method: Circular 212 Planning | Calc On Field Change | Calculate

Cycle Time: 100 | Loss Time: 0 | Optimize | Scenario: 2005-AM Peak(6:00-7:00 AM)

Improvement: | Cost (in millions): 0.000

Approach	Northbound					Southbound					Eastbound					Westbound				
Movement	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Lanes	1	1	0	0	1	0	0	0	0	0	0	0	2	1	0	1	0	2	0	1
LTR			0					1					0					0		

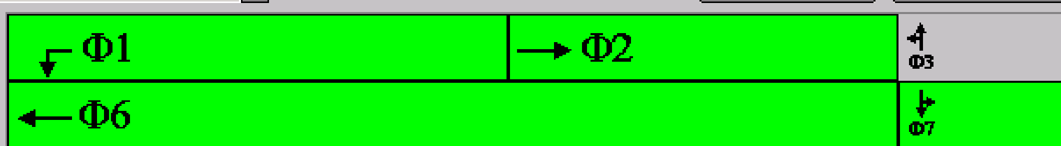
	Northbound			Southbound			Eastbound			Westbound		
Control,RT	Split Phase		Igno	Split Phase		Inclu	Permitted		Inclu	Protected		Inclu
Min Green	0	0	0	0	0	0	0	0	0	0	0	0
Base Vol	180	0	400	0	0	0	0	660	40	300	1060	10
G/C	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Volume	198	0	0	0	0	0	0	660	40	300	1060	10
Sat/Lane	1425	1425	1425	1425	1425	1425	1425	1425	1425	1425	1425	1425
SatAdj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes	2.00	0.00	1.00	0.00	1.00	0.00	0.00	2.83	0.17	1.00	2.00	1.00
Saturation	2850	0	1425	0	1425	0	0	4031	244	1425	2850	1425
Vol/Sat	0.07	0.00	0.00	0.00	0.00	0.00	0.00	0.16	0.16	0.21	0.37	0.01
CritVolume	99							233		300		
CriticalMove	******							******		******		

Critical Volume/Capacity: 0.444 | Average Delay: xxxxxx | Level Of Service: A

Calculated Cycle Length: 100 seconds | Optimal Cycle Length: 33 seconds | Error Count: 0

Base Alternative | View Log | View Report | Error Level: Normal

Average Delay | Calc Unentered G/C | Edit Volume | Edit Geometry



Reset | OK | Cancel

Signalized Intersection #3 "IMPERIAL HWY @ SEPULVEDA BL." (LOS Mitigate)

Method: Circular 212 Planning | Calc On Field Change | Calculate

Cycle Time: 100 | Loss Time: 0 | Optimize | Scenario: 2005-AM Peak(6:00-7:00 AM)

Improvement: | Cost (in millions): 0.000

Approach	Northbound					Southbound					Eastbound					Westbound				
Movement	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Lanes	1	0	3	0	1	2	0	3	1	0	2	0	3	0	1	2	0	3	0	1
LTR			0					0					0					0		

Approach	Northbound		Southbound		Eastbound		Westbound	
Control,RT	Protected	Inclu	Protected	Inclu	Protected	Inclu	Protected	Inclu

Movement	NB L	NB T	NB R	SB L	SB T	SB R	EB L	EB T	EB R	WB L	WB T	WB R
Min Green	0	0	0	0	0	0	0	0	0	0	0	0
Base Vol	60	1190	610	210	1180	20	150	210	80	120	200	330
G/C	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Volume	60	1190	610	231	1180	20	165	210	80	132	200	330
Sat/Lane	1375	1375	1375	1375	1375	1375	1375	1375	1375	1375	1375	1375
SatAdj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes	1.00	3.00	1.00	2.00	3.93	0.07	2.00	3.00	1.00	2.00	3.00	1.00
Saturation	1375	4125	1375	2750	5408	92	2750	4125	1375	2750	4125	1375
Vol/Sat	0.04	0.29	0.44	0.08	0.22	0.22	0.06	0.05	0.06	0.05	0.05	0.24
CritVolume			610	116			83					330
CriticalMove			******	******			******					******

Critical Volume/Capacity: 0.828 | Average Delay: xxxxxx | Level Of Service: D

Calculated Cycle Length: 100 seconds | Optimal Cycle Length: 132 seconds | Error Count: 0

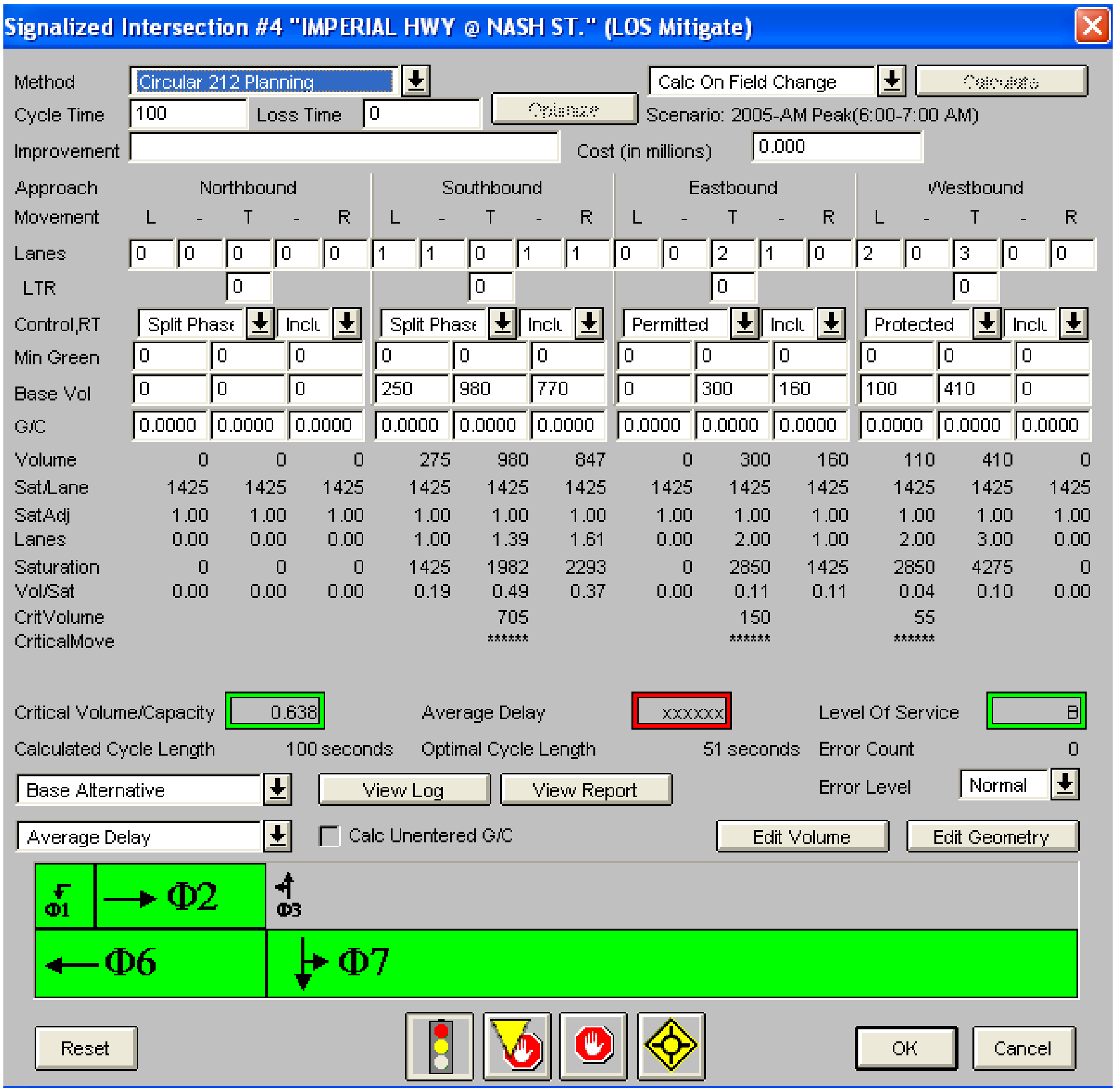
Base Alternative | View Log | View Report | Error Level: Normal

Average Delay | Calc Unentered G/C | Edit Volume | Edit Geometry

Φ1 | Φ2 | Φ3 | Φ4

Φ5 | Φ6 | Φ7 | Φ8

Reset | OK | Cancel



Signalized Intersection #4 "IMPERIAL HWY @ NASH ST." (LOS Mitigate)

Method: Circular 212 Planning | Calc On Field Change | Calculate
Cycle Time: 100 | Loss Time: 0 | Optimize | Scenario: 2005-AM Peak(6:00-7:00 AM)
Improvement: | Cost (in millions): 0.000

Approach	Northbound					Southbound					Eastbound					Westbound				
Movement	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Lanes	0	0	0	0	0	1	1	0	1	1	0	0	2	1	0	2	0	3	0	0
LTR			0					0					0					0		

	NB L	NB T	NB R	SB L	SB T	SB R	EB L	EB T	EB R	WB L	WB T	WB R
Control,RT	Split Phase		Inclu	Split Phase		Inclu	Permitted		Inclu	Protected		Inclu
Min Green	0	0	0	0	0	0	0	0	0	0	0	0
Base Vol	0	0	0	250	980	770	0	300	160	100	410	0
G/C	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Volume	0	0	0	275	980	847	0	300	160	110	410	0
Sat/Lane	1425	1425	1425	1425	1425	1425	1425	1425	1425	1425	1425	1425
SatAdj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes	0.00	0.00	0.00	1.00	1.39	1.61	0.00	2.00	1.00	2.00	3.00	0.00
Saturation	0	0	0	1425	1982	2293	0	2850	1425	2850	4275	0
Vol/Sat	0.00	0.00	0.00	0.19	0.49	0.37	0.00	0.11	0.11	0.04	0.10	0.00
CritVolume					705			150		55		
CriticalMove					******			******		******		

Critical Volume/Capacity: 0.638 | Average Delay: xxxxxx | Level Of Service: B
Calculated Cycle Length: 100 seconds | Optimal Cycle Length: 51 seconds | Error Count: 0
Base Alternative | View Log | View Report | Error Level: Normal
Average Delay | Calc Unentered G/C | Edit Volume | Edit Geometry

Φ1 Φ2 Φ3
Φ6 Φ7

Reset | OK | Cancel

Signalized Intersection #5 "IMPERIAL HWY. @ DOUGLAS ST." (LOS Mitigate)

Method: Circular 212 Planning | Calc On Field Change | Calculate

Cycle Time: 100 | Loss Time: 0 | Optimize | Scenario: 2005-AM Peak(6:00-7:00 AM)

Improvement: | Cost (in millions): 0.000

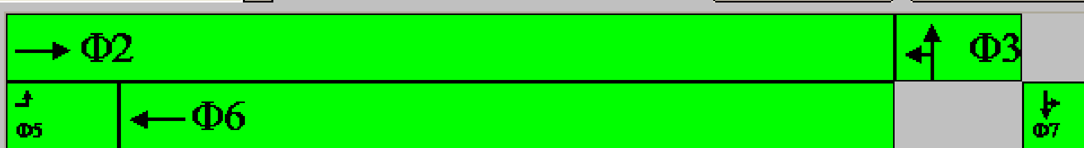
Approach	Northbound			Southbound			Eastbound			Westbound		
Movement	L	T	R	L	T	R	L	T	R	L	T	R
Lanes	2 - 0	2 - 0	2	1 - 0	0 - 0	1	1 - 0	3 - 0	0	0 - 0	2 - 1	0
LTR		0			1			0			0	
Control,RT	Split Phase		Inclu	Split Phase		Inclu	Protected		Inclu	Permitted		Inclu
Min Green	0	0	0	0	0	0	0	0	0	0	0	0
Base Vol	30	10	60	30	0	10	30	330	0	0	530	70
G/C	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Volume	33	10	66	33	0	11	30	330	0	0	530	70
Sat/Lane	1425	1425	1425	1425	1425	1425	1425	1425	1425	1425	1425	1425
SatAdj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes	2.00	2.00	2.00	2.00	0.00	1.00	1.00	3.00	0.00	0.00	2.65	0.35
Saturation	2850	2850	2850	2850	0	1425	1425	4275	0	0	3776	499
Vol/Sat	0.01	0.00	0.02	0.01	0.00	0.01	0.02	0.08	0.00	0.00	0.14	0.14
CritVolume			33	17			30				200	
CriticalMove			******	******			******				******	

Critical Volume/Capacity: 0.196 | Average Delay: xxxxxx | Level Of Service: A

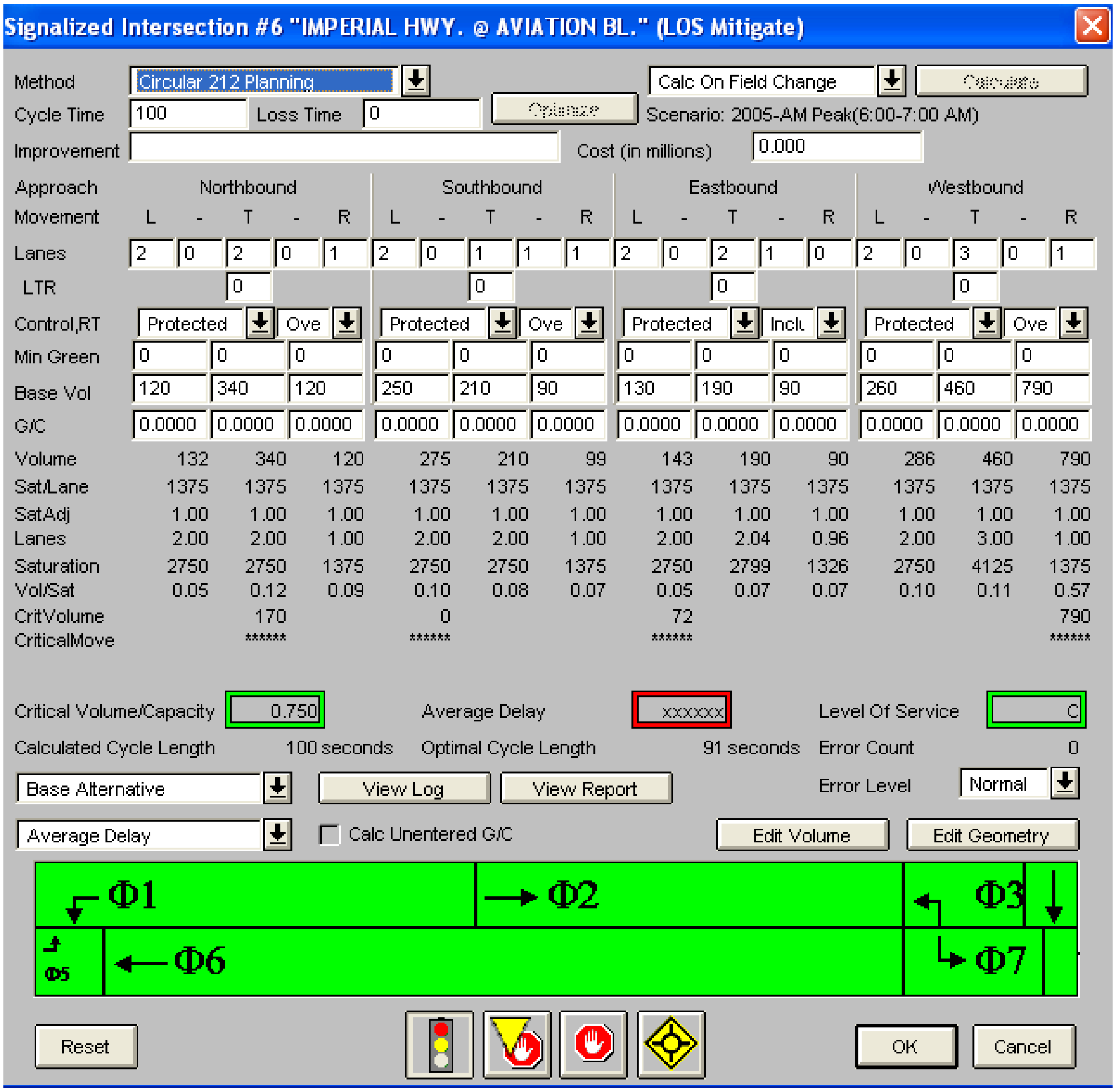
Calculated Cycle Length: 100 seconds | Optimal Cycle Length: 23 seconds | Error Count: 0

Base Alternative | View Log | View Report | Error Level: Normal

Average Delay | Calc Unentered G/C | Edit Volume | Edit Geometry



Reset | OK | Cancel



Signalized Intersection #6 "IMPERIAL HWY. @ AVIATION BL." (LOS Mitigate)

Method: Circular 212 Planning | Calc On Field Change | Calculate

Cycle Time: 100 | Loss Time: 0 | Optimize | Scenario: 2005-AM Peak(6:00-7:00 AM)

Improvement: | Cost (in millions): 0.000

Approach	Northbound					Southbound					Eastbound					Westbound				
Movement	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Lanes	2	0	2	0	1	2	0	1	1	1	2	0	2	1	0	2	0	3	0	1
LTR			0					0					0					0		

	Northbound			Southbound			Eastbound			Westbound		
Control,RT	Protected		Ove	Protected		Ove	Protected		Inclu	Protected		Ove
Min Green	0	0	0	0	0	0	0	0	0	0	0	0
Base Vol	120	340	120	250	210	90	130	190	90	260	460	790
G/C	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Volume	132	340	120	275	210	99	143	190	90	286	460	790
Sat/Lane	1375	1375	1375	1375	1375	1375	1375	1375	1375	1375	1375	1375
SatAdj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes	2.00	2.00	1.00	2.00	2.00	1.00	2.00	2.04	0.96	2.00	3.00	1.00
Saturation	2750	2750	1375	2750	2750	1375	2750	2799	1326	2750	4125	1375
Vol/Sat	0.05	0.12	0.09	0.10	0.08	0.07	0.05	0.07	0.07	0.10	0.11	0.57
CritVolume		170		0			72					790
CriticalMove		******		******			******					******

Critical Volume/Capacity: 0.750 | Average Delay: xxxxxx | Level Of Service: C

Calculated Cycle Length: 100 seconds | Optimal Cycle Length: 91 seconds | Error Count: 0

Base Alternative | View Log | View Report | Error Level: Normal

Average Delay | Calc Unentered G/C | Edit Volume | Edit Geometry

Φ1 Φ2 Φ3

Φ5 Φ6 Φ7

Reset | OK | Cancel

Signalized Intersection #7 "IMPERIAL HWY. @ 105 RAMP" (LOS Mitigate)

Method: Circular 212 Planning | Calc On Field Change | Calculate

Cycle Time: 100 | Loss Time: 0 | Optimize | Scenario: 2005-AM Peak(6:00-7:00 AM)

Improvement: | Cost (in millions): 0.000

Approach	Northbound					Southbound					Eastbound					Westbound				
Movement	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Lanes	2	0	0	0	2	0	0	0	0	0	0	0	2	1	1	1	0	3	0	0
LTR			0					0					0					0		

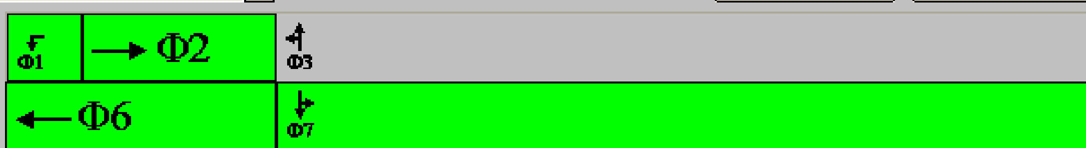
Approach	Northbound			Southbound			Eastbound			Westbound		
Control,RT	Split Phase		Ove	Split Phase		Inclu	Protected		Ove	Protected		Inclu
Min Green	0	0	0	0	0	0	0	0	0	0	0	0
Base Vol	1010	0	330	0	0	0	0	220	320	70	560	0
G/C	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Volume	1111	0	363	0	0	0	0	220	352	70	560	0
Sat/Lane	1375	1375	1375	1375	1375	1375	1375	1375	1375	1375	1375	1375
SatAdj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes	2.00	0.00	2.00	0.00	0.00	0.00	0.00	2.00	2.00	1.00	3.00	0.00
Saturation	2750	0	2750	0	0	0	0	2750	2750	1375	4125	0
Vol/Sat	0.40	0.00	0.13	0.00	0.00	0.00	0.00	0.08	0.13	0.05	0.14	0.00
CritVolume	556						0				187	
CriticalMove	******						******				******	

Critical Volume/Capacity: 0.540 | Average Delay: xxxxxx | Level Of Service: A

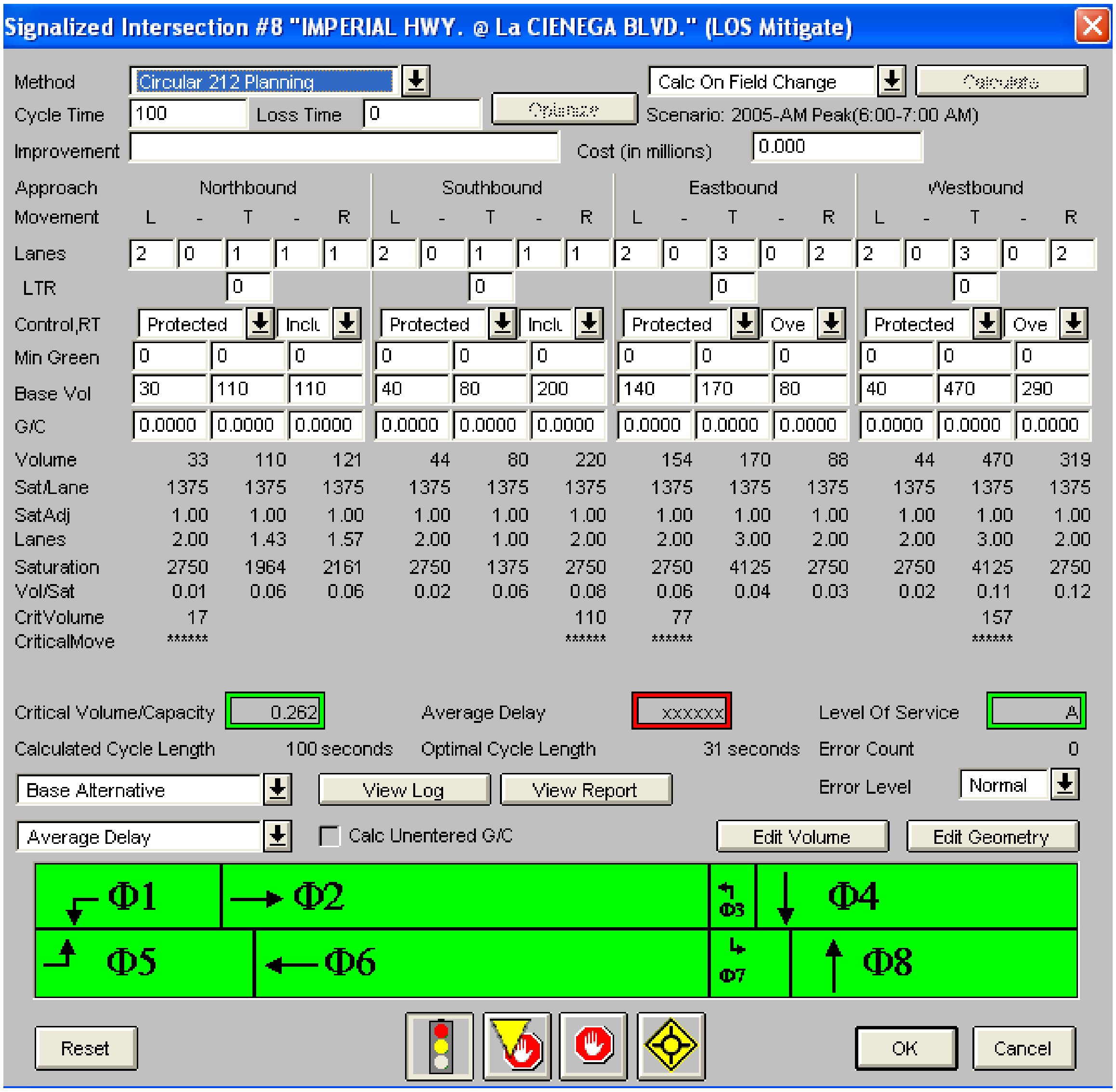
Calculated Cycle Length: 100 seconds | Optimal Cycle Length: 50 seconds | Error Count: 0

Base Alternative | View Log | View Report | Error Level: Normal

Average Delay | Calc Unentered G/C | Edit Volume | Edit Geometry



Reset | OK | Cancel



Signalized Intersection #8 "IMPERIAL HWY. @ La CIENEGA BLVD." (LOS Mitigate)

Method: Circular 212 Planning | Calc On Field Change | Calculate

Cycle Time: 100 | Loss Time: 0 | Optimize | Scenario: 2005-AM Peak(6:00-7:00 AM)

Improvement: | Cost (in millions): 0.000

Approach	Northbound					Southbound					Eastbound					Westbound				
Movement	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Lanes	2	0	1	1	1	2	0	1	1	1	2	0	3	0	2	2	0	3	0	2
LTR			0					0					0					0		

	NB L	NB T	NB R	SB L	SB T	SB R	EB L	EB T	EB R	WB L	WB T	WB R
Control,RT	Protected		Inclu	Protected		Inclu	Protected		Ove	Protected		Ove
Min Green	0	0	0	0	0	0	0	0	0	0	0	0
Base Vol	30	110	110	40	80	200	140	170	80	40	470	290
G/C	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Volume	33	110	121	44	80	220	154	170	88	44	470	319
Sat/Lane	1375	1375	1375	1375	1375	1375	1375	1375	1375	1375	1375	1375
SatAdj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes	2.00	1.43	1.57	2.00	1.00	2.00	2.00	3.00	2.00	2.00	3.00	2.00
Saturation	2750	1964	2161	2750	1375	2750	2750	4125	2750	2750	4125	2750
Vol/Sat	0.01	0.06	0.06	0.02	0.06	0.08	0.06	0.04	0.03	0.02	0.11	0.12
CritVolume	17					110	77				157	
CriticalMove	******					******	******				******	

Critical Volume/Capacity: 0.262 | Average Delay: xxxxxx | Level Of Service: A

Calculated Cycle Length: 100 seconds | Optimal Cycle Length: 31 seconds | Error Count: 0

Base Alternative | View Log | View Report | Error Level: Normal

Average Delay | Calc Unentered G/C | Edit Volume | Edit Geometry

Φ1 Φ2 Φ3 Φ4

Φ5 Φ6 Φ7 Φ8

Reset | OK | Cancel

Signalized Intersection #9 "IMPERIAL HWY. @ 405 NORTH RAMP" (LOS Mitigate)

Method: Circular 212 Planning — Calc On Field Change — Calculate

Cycle Time: 100 — Loss Time: 0 — Optimize — Scenario: 2005-AM Peak(6:00-7:00 AM)

Improvement: — Cost (in millions): 0.000

Approach	Northbound					Southbound					Eastbound					Westbound				
Movement	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Lanes	1	0	0	0	0	0	0	0	0	0	0	0	2	1	1	0	0	2	1	1
LTR			1					0					0					0		
Control,RT	Split Phase			Inclu		Split Phase			Inclu		Permitted			Igno		Permitted			Igno	

	NB L	NB T	NB R	SB L	SB T	SB R	EB L	EB T	EB R	WB L	WB T	WB R
Min Green	0	0	0	0	0	0	0	0	0	0	0	0
Base Vol	220	0	40	0	0	0	0	220	100	0	550	370
G/C	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Volume	242	0	40	0	0	0	0	220	0	0	550	0
Sat/Lane	1425	1425	1425	1425	1425	1425	1425	1425	1425	1425	1425	1425
SatAdj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes	1.72	0.00	0.28	0.00	0.00	0.00	0.00	3.00	1.00	0.00	3.00	1.00
Saturation	2446	0	404	0	0	0	0	4275	1425	0	4275	1425
Vol/Sat	0.10	0.00	0.10	0.00	0.00	0.00	0.00	0.05	0.00	0.00	0.13	0.00
CritVolume	141						0				183	
CriticalMove	******						******				******	

Critical Volume/Capacity: 0.228 — Average Delay: xxxxxx — Level Of Service: A

Calculated Cycle Length: 100 seconds — Optimal Cycle Length: 24 seconds — Error Count: 0

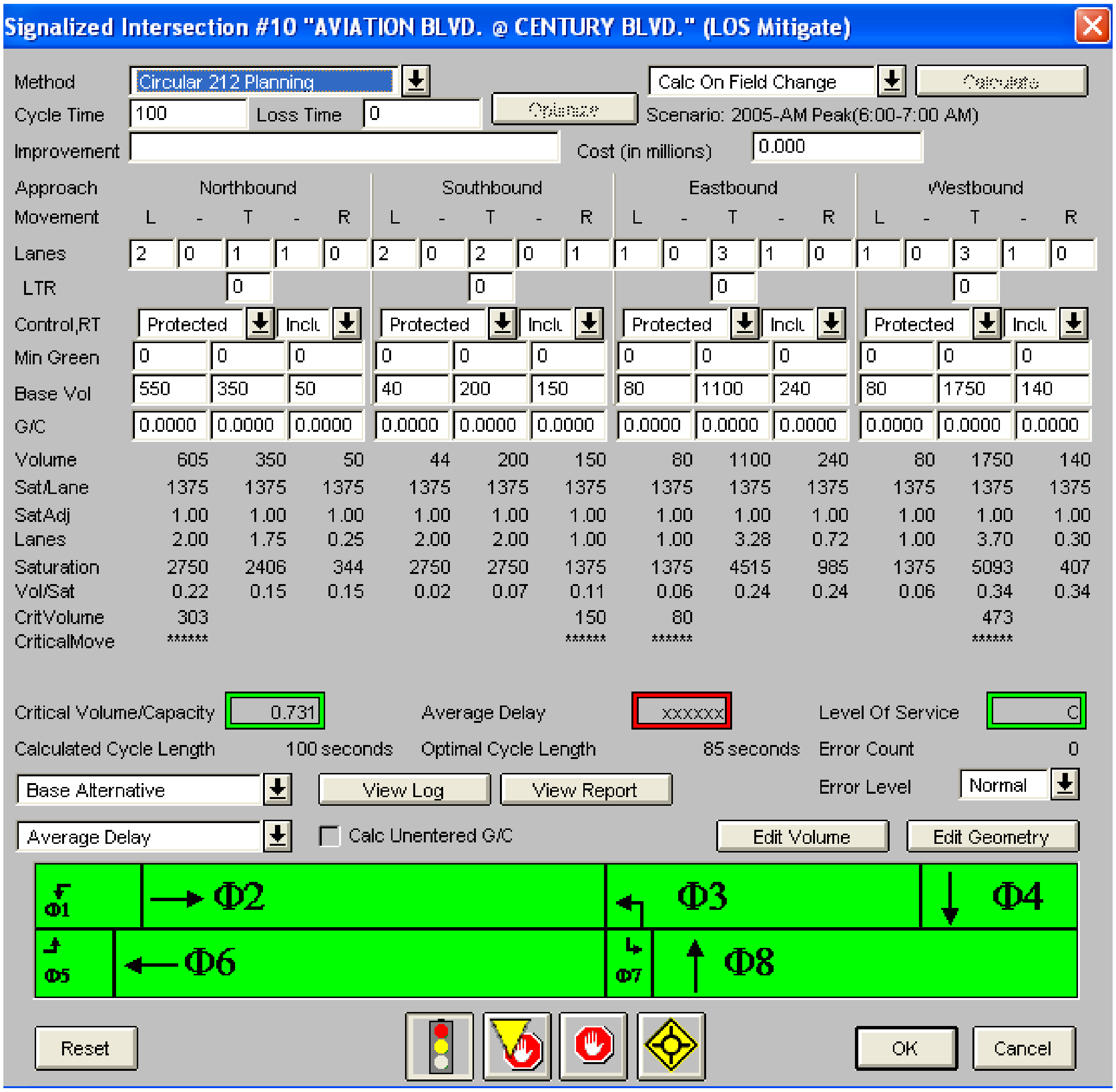
Base Alternative — View Log — View Report — Error Level: Normal

Average Delay — Calc Unentered G/C — Edit Volume — Edit Geometry

Φ2 — Φ3

Φ6 — Φ7

Reset — OK — Cancel



Signalized Intersection #10 "AVIATION BLVD. @ CENTURY BLVD." (LOS Mitigate)

Method: Circular 212 Planning — Calc On Field Change — Calculate

Cycle Time: 100 — Loss Time: 0 — Optimize — Scenario: 2005-AM Peak(6:00-7:00 AM)

Improvement: — Cost (in millions): 0.000

Approach	Northbound			Southbound			Eastbound			Westbound		
Movement	L	T	R	L	T	R	L	T	R	L	T	R
Lanes	2 0	1 1	0	2 0	2 0	1	1 0	3 1	0	1 0	3 1	0
LTR		0			0			0			0	
Control,RT	Protected		Inclu	Protected		Inclu	Protected		Inclu	Protected		Inclu
Min Green	0	0	0	0	0	0	0	0	0	0	0	0
Base Vol	550	350	50	40	200	150	80	1100	240	80	1750	140
G/C	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Volume	605	350	50	44	200	150	80	1100	240	80	1750	140
Sat/Lane	1375	1375	1375	1375	1375	1375	1375	1375	1375	1375	1375	1375
SatAdj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes	2.00	1.75	0.25	2.00	2.00	1.00	1.00	3.28	0.72	1.00	3.70	0.30
Saturation	2750	2406	344	2750	2750	1375	1375	4515	985	1375	5093	407
Vol/Sat	0.22	0.15	0.15	0.02	0.07	0.11	0.06	0.24	0.24	0.06	0.34	0.34
CritVolume	303					150	80				473	
CriticalMove	******					******	******				******	

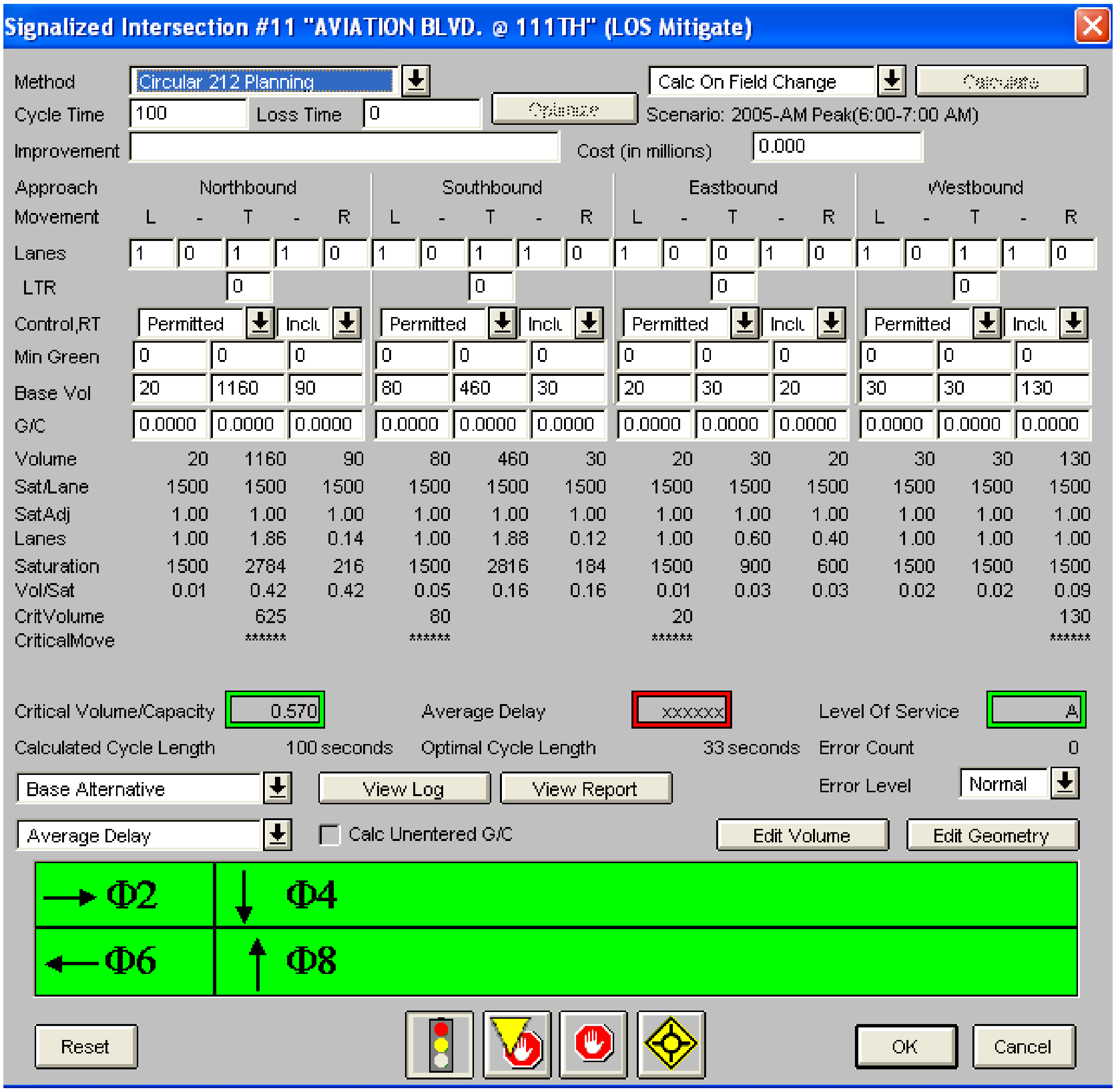
Critical Volume/Capacity: 0.731 — Average Delay: xxxxxx — Level Of Service: C

Calculated Cycle Length: 100 seconds — Optimal Cycle Length: 85 seconds — Error Count: 0

Base Alternative — View Log — View Report — Error Level: Normal

Average Delay — Calc Unentered G/C — Edit Volume — Edit Geometry

Reset — OK — Cancel



Signalized Intersection #11 "AVIATION BLVD. @ 111TH" (LOS Mitigate)

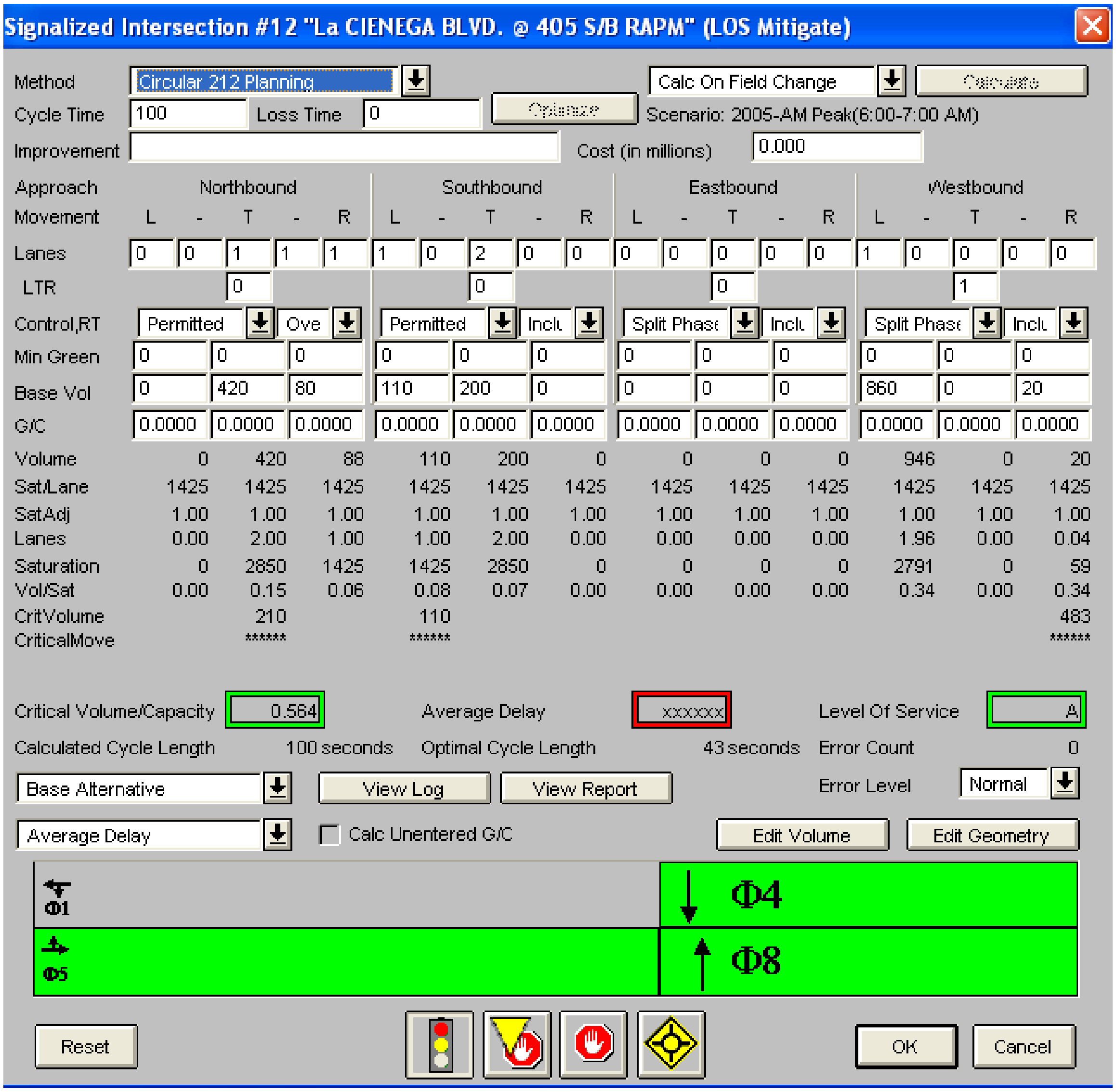
Method: Circular 212 Planning | Calc On Field Change | Calculate
Cycle Time: 100 | Loss Time: 0 | Optimize | Scenario: 2005-AM Peak(6:00-7:00 AM)
Improvement: | Cost (in millions): 0.000

Approach	Northbound			Southbound			Eastbound			Westbound		
Movement	L	T	R	L	T	R	L	T	R	L	T	R
Lanes	1 - 0	1 - 1	0	1 - 0	1 - 1	0	1 - 0	0 - 1	0	1 - 0	1 - 1	0
LTR		0			0			0			0	
Control,RT	Permitted		Inclu	Permitted		Inclu	Permitted		Inclu	Permitted		Inclu
Min Green	0	0	0	0	0	0	0	0	0	0	0	0
Base Vol	20	1160	90	80	460	30	20	30	20	30	30	130
G/C	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Volume	20	1160	90	80	460	30	20	30	20	30	30	130
Sat/Lane	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500
SatAdj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes	1.00	1.86	0.14	1.00	1.88	0.12	1.00	0.60	0.40	1.00	1.00	1.00
Saturation	1500	2784	216	1500	2816	184	1500	900	600	1500	1500	1500
Vol/Sat	0.01	0.42	0.42	0.05	0.16	0.16	0.01	0.03	0.03	0.02	0.02	0.09
CritVolume		625		80			20					130
CriticalMove		******		******			******					******

Critical Volume/Capacity: 0.570 | Average Delay: xxxxxx | Level Of Service: A
Calculated Cycle Length: 100 seconds | Optimal Cycle Length: 33 seconds | Error Count: 0
Base Alternative | View Log | View Report | Error Level: Normal
Average Delay | Calc Unentered G/C | Edit Volume | Edit Geometry

Φ2 Φ4
Φ6 Φ8

Reset | OK | Cancel



Signalized Intersection #12 "La CIENEGA BLVD. @ 405 S/B RAPM" (LOS Mitigate)

Method: Circular 212 Planning | Calc On Field Change | Calculate

Cycle Time: 100 | Loss Time: 0 | Optimize | Scenario: 2005-AM Peak(6:00-7:00 AM)

Improvement: | Cost (in millions): 0.000

Approach	Northbound			Southbound			Eastbound			Westbound		
Movement	L	T	R	L	T	R	L	T	R	L	T	R
Lanes	0 0	1 1	1	1 0	2 0	0	0 0	0 0	0	1 0	0 0	0
LTR		0			0			0			1	
Control,RT	Permitted		Ove	Permitted		Inclu	Split Phase		Inclu	Split Phase		Inclu
Min Green	0	0	0	0	0	0	0	0	0	0	0	0
Base Vol	0	420	80	110	200	0	0	0	0	860	0	20
G/C	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Volume	0	420	88	110	200	0	0	0	0	946	0	20
Sat/Lane	1425	1425	1425	1425	1425	1425	1425	1425	1425	1425	1425	1425
SatAdj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes	0.00	2.00	1.00	1.00	2.00	0.00	0.00	0.00	0.00	1.96	0.00	0.04
Saturation	0	2850	1425	1425	2850	0	0	0	0	2791	0	59
Vol/Sat	0.00	0.15	0.06	0.08	0.07	0.00	0.00	0.00	0.00	0.34	0.00	0.34
CritVolume		210		110								483
CriticalMove		******		******								******

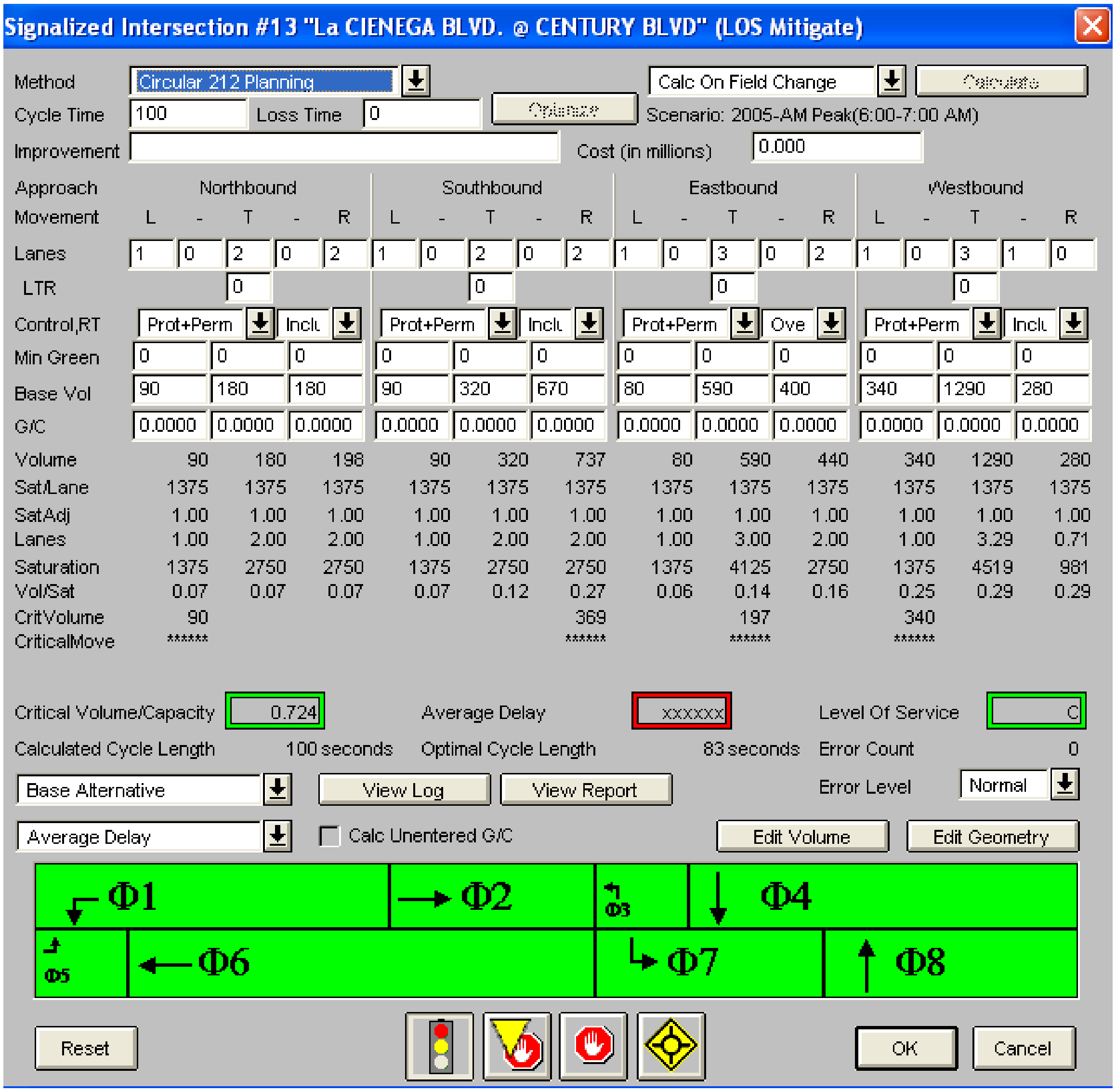
Critical Volume/Capacity: 0.564 | Average Delay: xxxxxx | Level Of Service: A

Calculated Cycle Length: 100 seconds | Optimal Cycle Length: 43 seconds | Error Count: 0

Base Alternative | View Log | View Report | Error Level: Normal

Average Delay | Calc Unentered G/C | Edit Volume | Edit Geometry

Reset | OK | Cancel



Signalized Intersection #13 "La CIENEGA BLVD. @ CENTURY BLVD" (LOS Mitigate)

Method: Circular 212 Planning | Calc On Field Change | Calculate

Cycle Time: 100 | Loss Time: 0 | Optimize | Scenario: 2005-AM Peak(6:00-7:00 AM)

Improvement: | Cost (in millions): 0.000

Approach	Northbound					Southbound					Eastbound					Westbound				
Movement	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Lanes	1	0	2	0	2	1	0	2	0	2	1	0	3	0	2	1	0	3	1	0
LTR			0					0					0					0		
Control,RT	Prot+Perm				Inclu	Prot+Perm				Inclu	Prot+Perm				Ove	Prot+Perm				Inclu
Min Green	0		0		0	0		0		0	0		0		0	0		0		0
Base Vol	90		180		180	90		320		670	80		590		400	340		1290		280
G/C	0.0000		0.0000		0.0000	0.0000		0.0000		0.0000	0.0000		0.0000		0.0000	0.0000		0.0000		0.0000
Volume	90		180		198	90		320		737	80		590		440	340		1290		280
Sat/Lane	1375		1375		1375	1375		1375		1375	1375		1375		1375	1375		1375		1375
SatAdj	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00
Lanes	1.00		2.00		2.00	1.00		2.00		2.00	1.00		3.00		2.00	1.00		3.29		0.71
Saturation	1375		2750		2750	1375		2750		2750	1375		4125		2750	1375		4519		981
Vol/Sat	0.07		0.07		0.07	0.07		0.12		0.27	0.06		0.14		0.16	0.25		0.29		0.29
CritVolume	90									369			197			340				
CriticalMove	******									******			******			******				

Critical Volume/Capacity: 0.724 | Average Delay: xxxxxx | Level Of Service: C

Calculated Cycle Length: 100 seconds | Optimal Cycle Length: 83 seconds | Error Count: 0

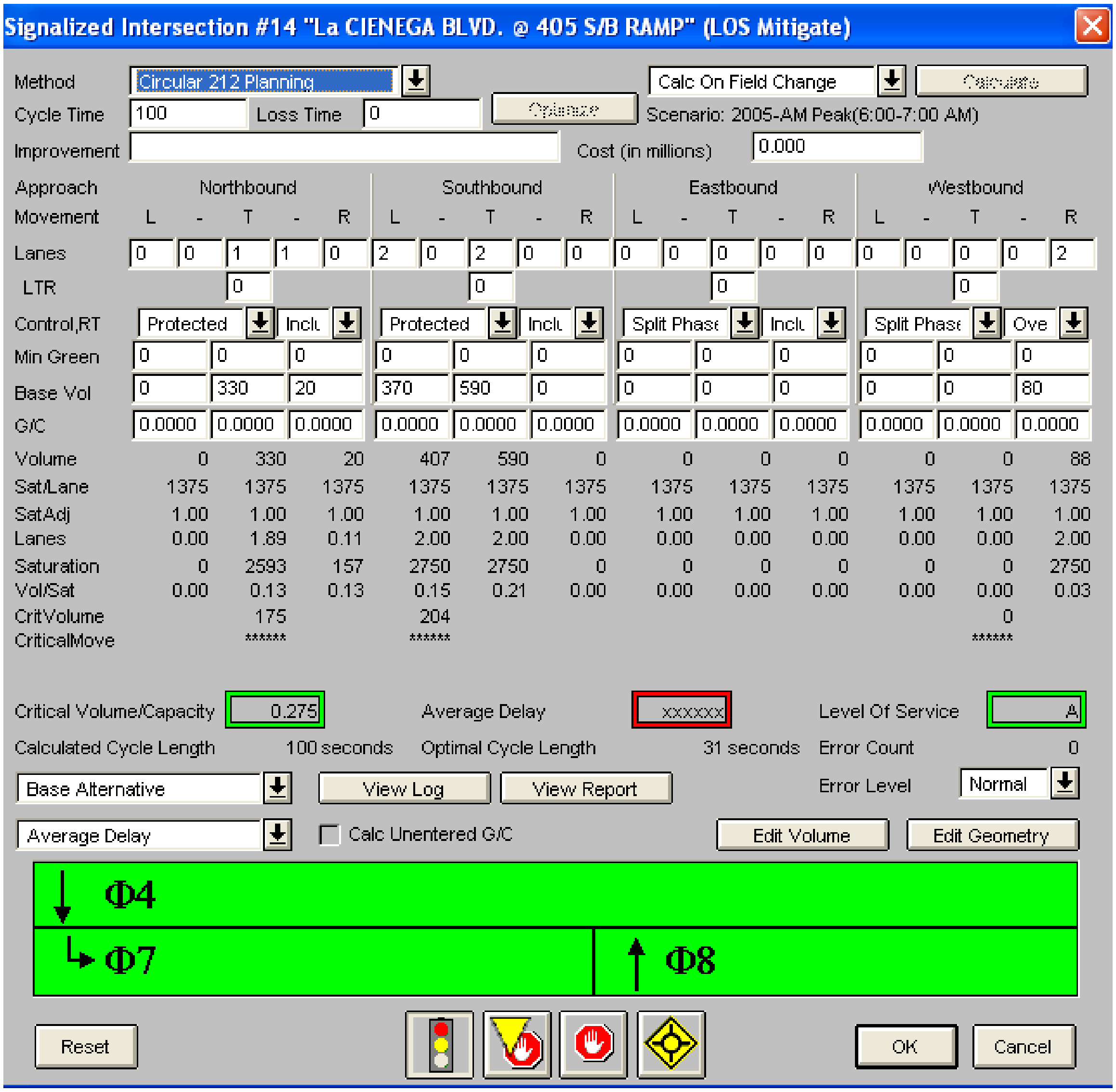
Base Alternative | View Log | View Report | Error Level: Normal

Average Delay | Calc Unentered G/C | Edit Volume | Edit Geometry

Φ1 Φ2 Φ3 Φ4

Φ5 Φ6 Φ7 Φ8

Reset | OK | Cancel



Signalized Intersection #14 "La CIENEGA BLVD. @ 405 S/B RAMP" (LOS Mitigate)

Method: Circular 212 Planning — Calc On Field Change — Calculate

Cycle Time: 100 — Loss Time: 0 — Optimize — Scenario: 2005-AM Peak(6:00-7:00 AM)

Improvement: — Cost (in millions): 0.000

Approach	Northbound					Southbound					Eastbound					Westbound				
Movement	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Lanes	0	0	1	1	0	2	0	2	0	0	0	0	0	0	0	0	0	0	0	2
LTR			0					0					0					0		

	Northbound			Southbound			Eastbound			Westbound		
Control,RT	Protected		Inclu	Protected		Inclu	Split Phase		Inclu	Split Phase		Ove
Min Green	0	0	0	0	0	0	0	0	0	0	0	0
Base Vol	0	330	20	370	590	0	0	0	0	0	0	80
G/C	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Volume	0	330	20	407	590	0	0	0	0	0	0	88
Sat/Lane	1375	1375	1375	1375	1375	1375	1375	1375	1375	1375	1375	1375
SatAdj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes	0.00	1.89	0.11	2.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	2.00
Saturation	0	2593	157	2750	2750	0	0	0	0	0	0	2750
Vol/Sat	0.00	0.13	0.13	0.15	0.21	0.00	0.00	0.00	0.00	0.00	0.00	0.03
CritVolume		175		204							0	
CriticalMove		******		******							******	

Critical Volume/Capacity: 0.275 — Average Delay: xxxxxx — Level Of Service: A

Calculated Cycle Length: 100 seconds — Optimal Cycle Length: 31 seconds — Error Count: 0

Base Alternative — View Log — View Report — Error Level: Normal

Average Delay — Calc Unentered G/C — Edit Volume — Edit Geometry

Reset — OK — Cancel

Signalized Intersection #15 "La CIENEGA BLVD. @ 104 TH STREET" (LOS Mitigate)

Method: Circular 212 Planning — Calc On Field Change — Calculate

Cycle Time: 100 — Loss Time: 0 — Optimize — Scenario: 2005-AM Peak(6:00-7:00 AM)

Improvement: — Cost (in millions): 0.000

Approach	Northbound			Southbound			Eastbound			Westbound		
Movement	L	T	R	L	T	R	L	T	R	L	T	R
Lanes	1 - 0	1 - 1	0	1 - 0	2 - 1	0	1 - 0	1 - 0	1	0 - 0	0 - 0	0
LTR		0			0			0			1	
Control,RT	Prot+Perm		Inclu	Permitted		Inclu	Permitted		Ove	Permitted		Inclu
Min Green	0	0	0	0	0	0	0	0	0	0	0	0
Base Vol	170	320	10	10	520	70	20	0	280	0	0	0
G/C	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Volume	170	320	10	10	520	70	20	0	280	0	0	0
Sat/Lane	1425	1425	1425	1425	1425	1425	1425	1425	1425	1425	1425	1425
SatAdj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes	1.00	1.94	0.06	1.00	2.64	0.36	1.00	1.00	1.00	0.00	1.00	0.00
Saturation	1425	2764	86	1425	3768	507	1425	1425	1425	0	1425	0
Vol/Sat	0.12	0.12	0.12	0.01	0.14	0.14	0.01	0.00	0.20	0.00	0.00	0.00
CritVolume	170				197				280			
CriticalMove	******				******				******			

Critical Volume/Capacity: 0.454 — Average Delay: xxxxxx — Level Of Service: A

Calculated Cycle Length: 100 seconds — Optimal Cycle Length: 34 seconds — Error Count: 0

Base Alternative — View Log — View Report — Error Level: Normal

Average Delay — Calc Unentered G/C — Edit Volume — Edit Geometry

Φ2 — Φ3 — Φ8

Reset — OK — Cancel

Signalized Intersection #16 "La CIENEGA BLVD. @ LENNOX BLVD" (LOS Mitigate)

Method: Circular 212 Planning | Calc On Field Change | Calculate

Cycle Time: 100 | Loss Time: 0 | Optimize | Scenario: 2005-AM Peak(6:00-7:00 AM)

Improvement: | Cost (in millions): 0.000

Approach	Northbound					Southbound					Eastbound					Westbound				
Movement	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Lanes	0	0	1	1	0	1	0	2	1	0	0	0	0	0	0	1	1	0	0	1
LTR			0					0					0					0		
Control,RT	Permitted			Inclu		Permit+Prot			Inclu		Split Phase			Inclu		Split Phase			Inclu	

	NB L	NB T	NB R	SB L	SB T	SB R	EB L	EB T	EB R	WB L	WB T	WB R
Min Green	0	0	0	0	0	0	0	0	0	0	0	0
Base Vol	0	400	40	30	250	0	0	0	0	120	0	120
G/C	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Volume	0	400	40	30	250	0	0	0	0	132	0	120
Sat/Lane	1425	1425	1425	1425	1425	1425	1425	1425	1425	1425	1425	1425
SatAdj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes	0.00	1.82	0.18	1.00	3.00	0.00	0.00	0.00	0.00	2.00	0.00	1.00
Saturation	0	2591	259	1425	4275	0	0	0	0	2850	0	1425
Vol/Sat	0.00	0.15	0.15	0.02	0.06	0.00	0.00	0.00	0.00	0.05	0.00	0.08
CritVolume		220		30								120
CriticalMove		******		******								******

Critical Volume/Capacity: 0.260 | Average Delay: xxxxxx | Level Of Service: A

Calculated Cycle Length: 100 seconds | Optimal Cycle Length: 25 seconds | Error Count: 0

Base Alternative | View Log | View Report | Error Level: Normal

Average Delay | Calc Unentered G/C | Edit Volume | Edit Geometry

Φ1 | Φ4

Φ5 | Φ8 | Φ7

Reset | OK | Cancel

Signalized Intersection #17 "La CIENEGA BLVD. @ 111TH STREET" (LOS Mitigate)

Method: Circular 212 Planning | Calc On Field Change | Calculate

Cycle Time: 100 | Loss Time: 0 | Optimize | Scenario: 2005-AM Peak(6:00-7:00 AM)

Improvement: | Cost (in millions): 0.000

Approach	Northbound			Southbound			Eastbound			Westbound		
Movement	L	T	R	L	T	R	L	T	R	L	T	R
Lanes	1 0	2 0	0	0 0	2 1	0	2 0	0 0	1	0 0	0 0	0
LTR		0			0			0			0	
Control,RT	Permitted		Inclu	Permitted		Inclu	Split Phase		Inclu	Split Phase		Inclu
Min Green	0	0	0	0	0	0	0	0	0	0	0	0
Base Vol	170	350	0	0	220	120	80	0	50	0	0	0
G/C	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Volume	170	350	0	0	220	120	88	0	50	0	0	0
Sat/Lane	1425	1425	1425	1425	1425	1425	1425	1425	1425	1425	1425	1425
SatAdj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes	1.00	2.00	0.00	0.00	2.00	1.00	2.00	0.00	1.00	0.00	0.00	0.00
Saturation	1425	2850	0	0	2850	1425	2850	0	1425	0	0	0
Vol/Sat	0.12	0.12	0.00	0.00	0.08	0.08	0.03	0.00	0.04	0.00	0.00	0.00
CritVolume	170				110				50			
CriticalMove	******				******				******			

Critical Volume/Capacity: 0.232 | Average Delay: xxxxxx | Level Of Service: A

Calculated Cycle Length: 100 seconds | Optimal Cycle Length: 24 seconds | Error Count: 0

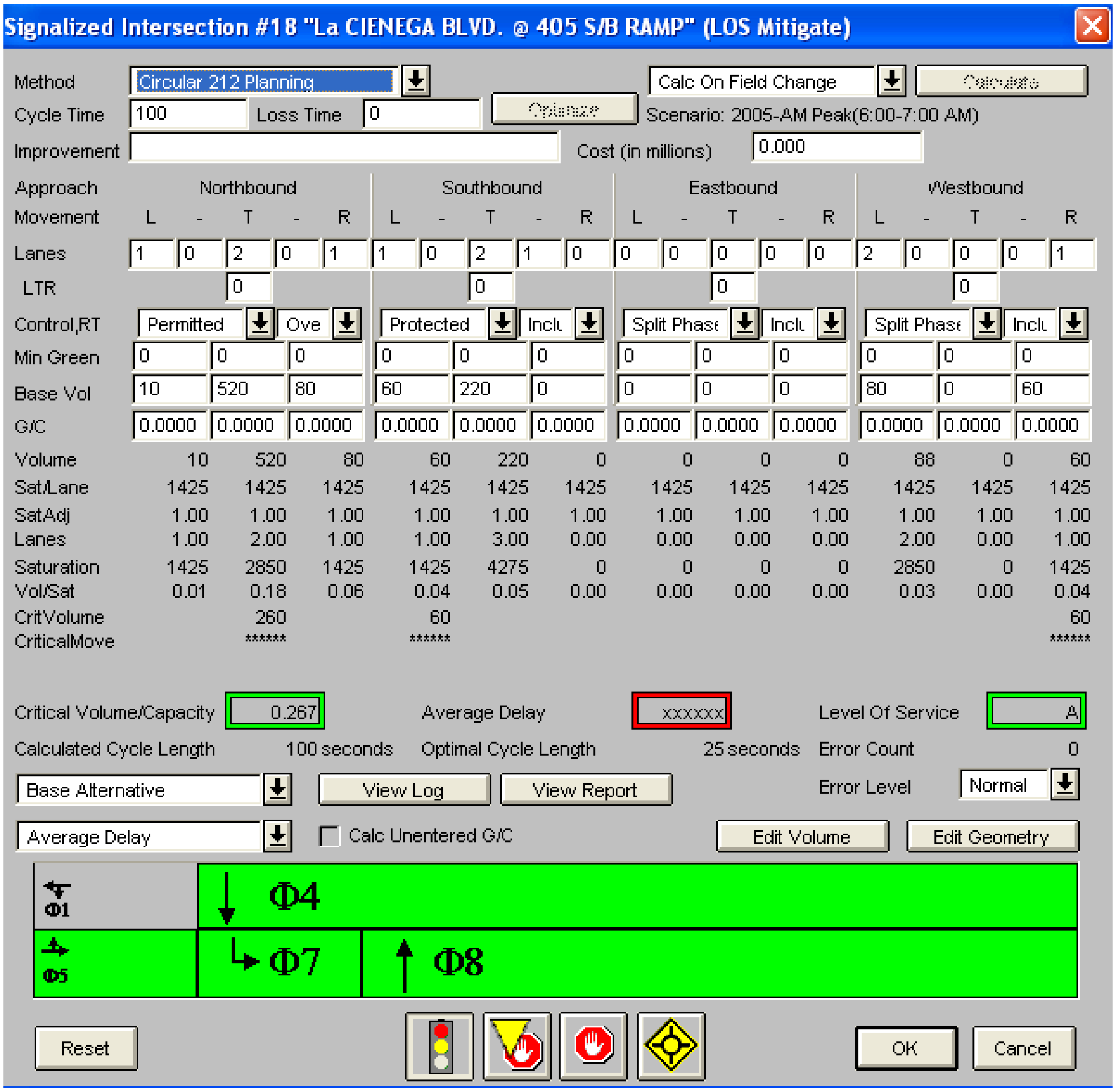
Base Alternative | View Log | View Report | Error Level: Normal

Average Delay | Calc Unentered G/C | Edit Volume | Edit Geometry

Φ1 | Φ4

Φ5 | Φ8

Reset | OK | Cancel



Signalized Intersection #18 "La CIENEGA BLVD. @ 405 S/B RAMP" (LOS Mitigate)

Method: Circular 212 Planning | Calc On Field Change | Calculate
Cycle Time: 100 | Loss Time: 0 | Optimize | Scenario: 2005-AM Peak(6:00-7:00 AM)
Improvement: | Cost (in millions): 0.000

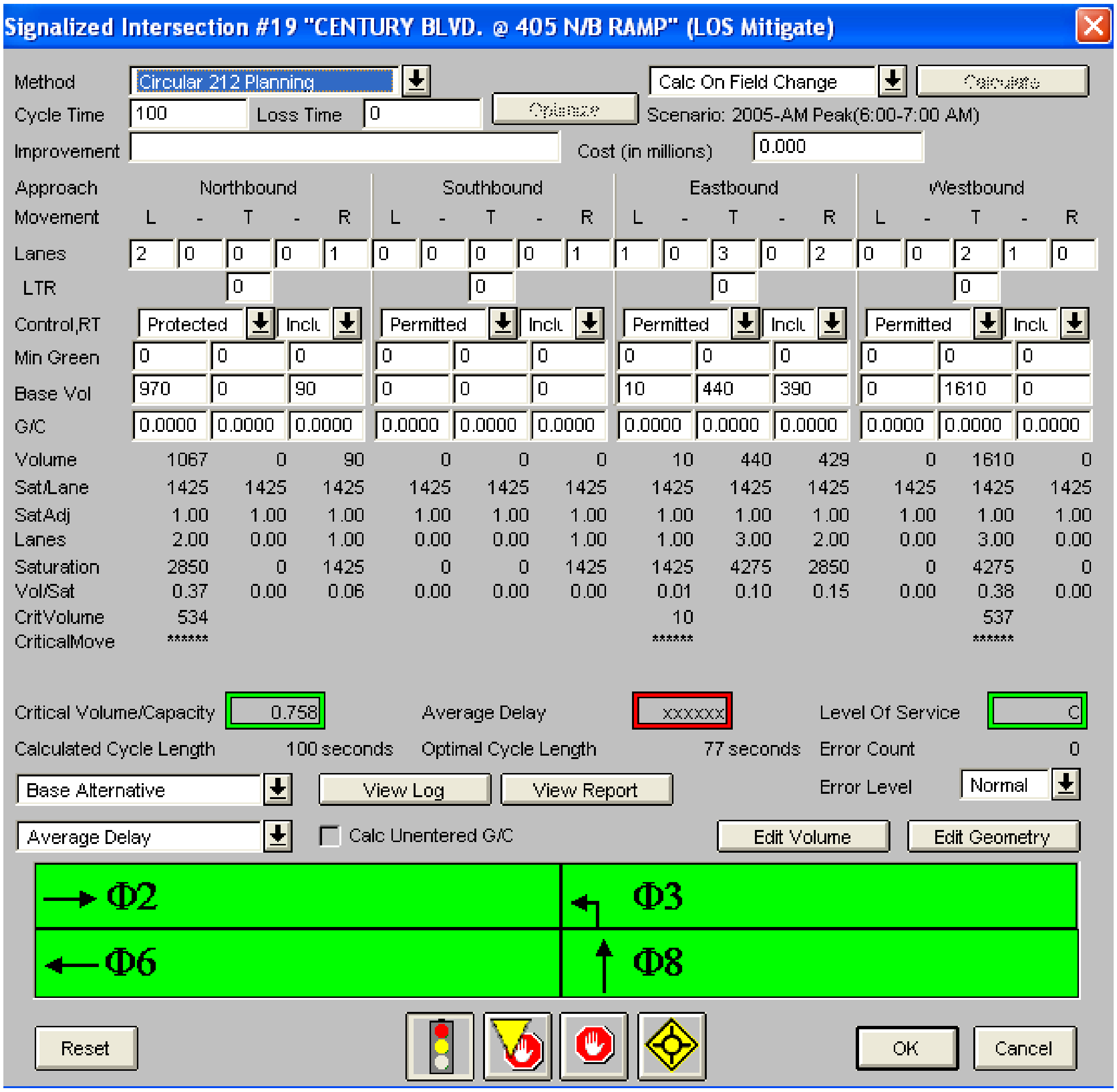
Approach	Northbound					Southbound					Eastbound					Westbound				
Movement	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Lanes	1	0	2	0	1	1	0	2	1	0	0	0	0	0	0	2	0	0	0	1
LTR			0					0					0					0		

Approach	Northbound			Southbound			Eastbound			Westbound		
Control,RT	Permitted		Ove	Protected		Inclu	Split Phase		Inclu	Split Phase		Inclu
Min Green	0	0	0	0	0	0	0	0	0	0	0	0
Base Vol	10	520	80	60	220	0	0	0	0	80	0	60
G/C	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Volume	10	520	80	60	220	0	0	0	0	88	0	60
Sat/Lane	1425	1425	1425	1425	1425	1425	1425	1425	1425	1425	1425	1425
SatAdj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes	1.00	2.00	1.00	1.00	3.00	0.00	0.00	0.00	0.00	2.00	0.00	1.00
Saturation	1425	2850	1425	1425	4275	0	0	0	0	2850	0	1425
Vol/Sat	0.01	0.18	0.06	0.04	0.05	0.00	0.00	0.00	0.00	0.03	0.00	0.04
CritVolume		260		60								60
CriticalMove		******		******								******

Critical Volume/Capacity: 0.267 | Average Delay: xxxxxx | Level Of Service: A
Calculated Cycle Length: 100 seconds | Optimal Cycle Length: 25 seconds | Error Count: 0
Base Alternative | View Log | View Report | Error Level: Normal
Average Delay | Calc Unentered G/C | Edit Volume | Edit Geometry

Φ1 | Φ4
Φ5 | Φ7 | Φ8

Reset | OK | Cancel



Signalized Intersection #19 "CENTURY BLVD. @ 405 N/B RAMP" (LOS Mitigate)

Method: Circular 212 Planning | Calc On Field Change | Calculate

Cycle Time: 100 | Loss Time: 0 | Optimize | Scenario: 2005-AM Peak(6:00-7:00 AM)

Improvement: | Cost (in millions): 0.000

Approach	Northbound					Southbound					Eastbound					Westbound				
Movement	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Lanes	2	0	0	0	1	0	0	0	0	1	1	0	3	0	2	0	0	2	1	0
LTR			0					0					0					0		

	Northbound			Southbound			Eastbound			Westbound		
Control,RT	Protected	Inclu		Permitted	Inclu		Permitted	Inclu		Permitted	Inclu	
Min Green	0	0	0	0	0	0	0	0	0	0	0	0
Base Vol	970	0	90	0	0	0	10	440	390	0	1610	0
G/C	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Volume	1067	0	90	0	0	0	10	440	429	0	1610	0
Sat/Lane	1425	1425	1425	1425	1425	1425	1425	1425	1425	1425	1425	1425
SatAdj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes	2.00	0.00	1.00	0.00	0.00	1.00	1.00	3.00	2.00	0.00	3.00	0.00
Saturation	2850	0	1425	0	0	1425	1425	4275	2850	0	4275	0
Vol/Sat	0.37	0.00	0.06	0.00	0.00	0.00	0.01	0.10	0.15	0.00	0.38	0.00
CritVolume	534						10				537	
CriticalMove	******						******				******	

Critical Volume/Capacity: 0.758 | Average Delay: xxxxxx | Level Of Service: C

Calculated Cycle Length: 100 seconds | Optimal Cycle Length: 77 seconds | Error Count: 0

Base Alternative | View Log | View Report | Error Level: Normal

Average Delay | Calc Unentered G/C | Edit Volume | Edit Geometry

Φ2 | Φ3

Φ6 | Φ8

Reset | OK | Cancel

TRAFFIX Project (2005) Analysis Results Report—Delivery Peak Hour

Traffix 7.6.0115 (c) 2003 Dowling Assoc. Licensed to R & A, CHICAGO, IL
2005-Delivery (3:00-4:00 PM)Sun Jan 17, 2005 15:32:24 Page 1-1

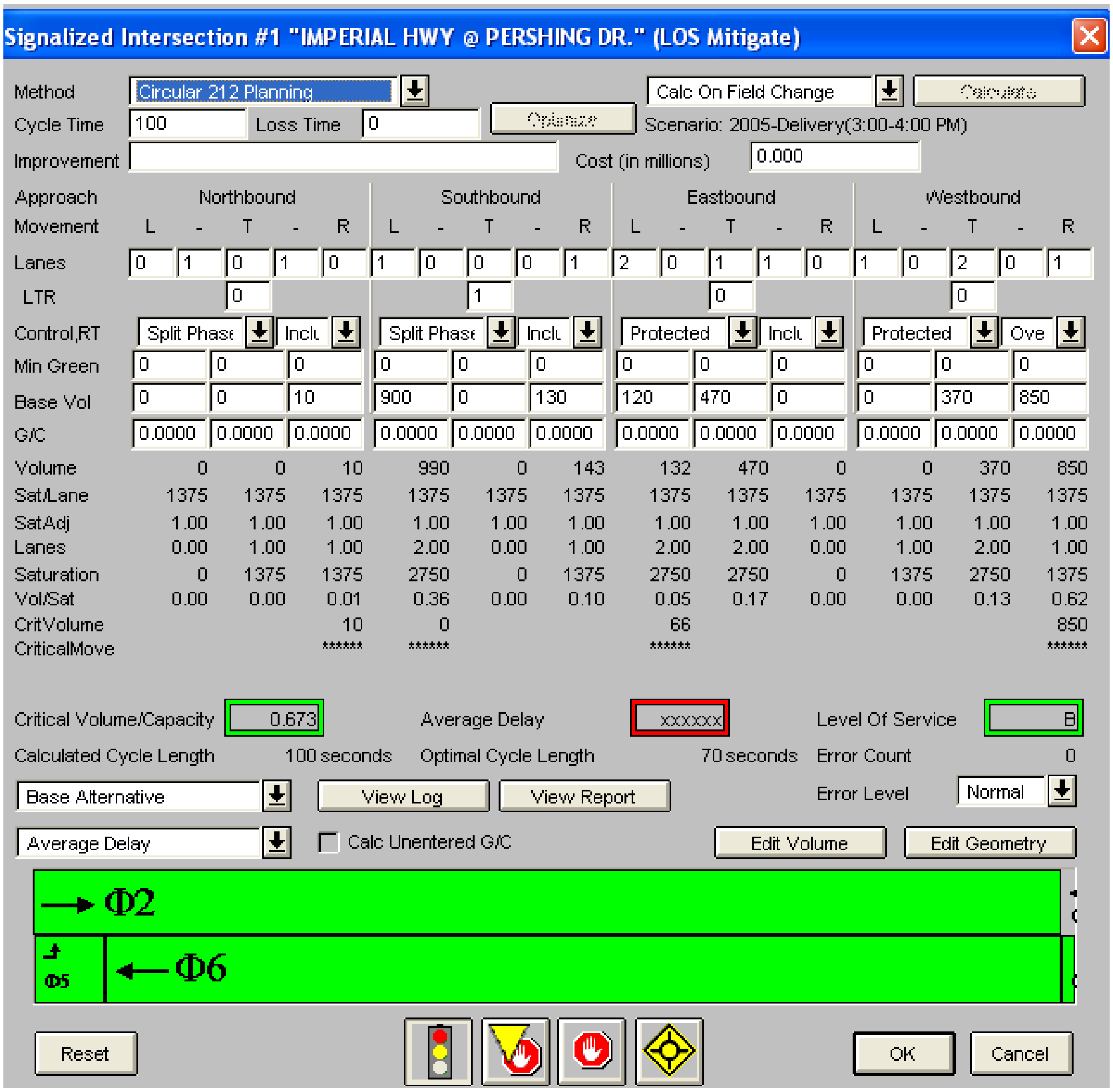
LAX SOUTH AIRFIELD EIR

Impact Analysis Report
Level Of Service

Intersection	LOS	V/C
# 1 IMPERIAL HWY @ PERSHING DR.	B	0.673
# 2 IMPERIAL HWY @MAIN STREET	B	0.663
# 3 IMPERIAL HWY @ SEPULVEDA BL.	F	1.095
# 4 IMPERIAL HWY @ NASH ST.	A	0.382
# 5 IMPERIAL HWY. @ DOUGLAS ST.	A	0.390
# 6 IMPERIAL HWY. @ AVIATION BL.	C	0.745
# 7 IMPERIAL HWY. @ 105 RAMP	C	0.774
# 8 IMPERIAL HWY. @ La CIENEGA BLV	A	0.441
# 9 IMPERIAL HWY. @ 405 NORTH RAMP	A	0.399
# 10 AVIATION BLVD. @ CENTURY BLVD.	F	1.010
# 11 AVIATION BLVD. @ 111TH	B	0.693
# 12 La CIENEGA BLVD. @ 405 S/B RAP	B	0.664
# 13 La CIENEGA BLVD. @ CENTURY BLV	E	0.934
# 14 La CIENEGA BLVD. @ 405 S/B RAM	A	0.568
# 15 La CIENEGA BLVD. @ 104 TH STRE	A	0.547
# 16 La CIENEGA BLVD. @ LENNOX BLVD	A	0.442
# 17 La CIENEGA BLVD. @ 111TH STREE	A	0.475
# 18 La CIENEGA BLVD. @ 405 S/B RAM	A	0.361
# 19 CENTURY BLVD. @ 405 N/B RAMP	A	0.575

Traffix 7.6.0115 (c) 2003 Dowling Assoc. Licensed to R & A, CHICAGO, IL

TRAFFIX Project (2005) Delivery Peak Hour Intersection Summary Reports



Signalized Intersection #1 "IMPERIAL HWY @ PERSHING DR." (LOS Mitigate)

Method: Circular 212 Planning | Calc On Field Change | Calculate

Cycle Time: 100 | Loss Time: 0 | Optimize | Scenario: 2005-Delivery(3:00-4:00 PM)

Improvement: | Cost (in millions): 0.000

Approach	Northbound					Southbound					Eastbound					Westbound				
Movement	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Lanes	0	1	0	1	0	1	0	0	0	1	2	0	1	1	0	1	0	2	0	1
LTR			0					1					0					0		
Control,RT	Split Phase				Inclu	Split Phase				Inclu	Protected				Inclu	Protected				Ove
Min Green	0		0		0	0		0		0	0		0		0	0		0		0
Base Vol	0		0		10	900		0		130	120		470		0	0		370		850
G/C	0.0000		0.0000		0.0000	0.0000		0.0000		0.0000	0.0000		0.0000		0.0000	0.0000		0.0000		0.0000
Volume	0		0		10	990		0		143	132		470		0	0		370		850
Sat/Lane	1375		1375		1375	1375		1375		1375	1375		1375		1375	1375		1375		1375
SatAdj	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00
Lanes	0.00		1.00		1.00	2.00		0.00		1.00	2.00		2.00		0.00	1.00		2.00		1.00
Saturation	0		1375		1375	2750		0		1375	2750		2750		0	1375		2750		1375
Vol/Sat	0.00		0.00		0.01	0.36		0.00		0.10	0.05		0.17		0.00	0.00		0.13		0.62
CritVolume					10	0					66									850
CriticalMove					******	******					******									******

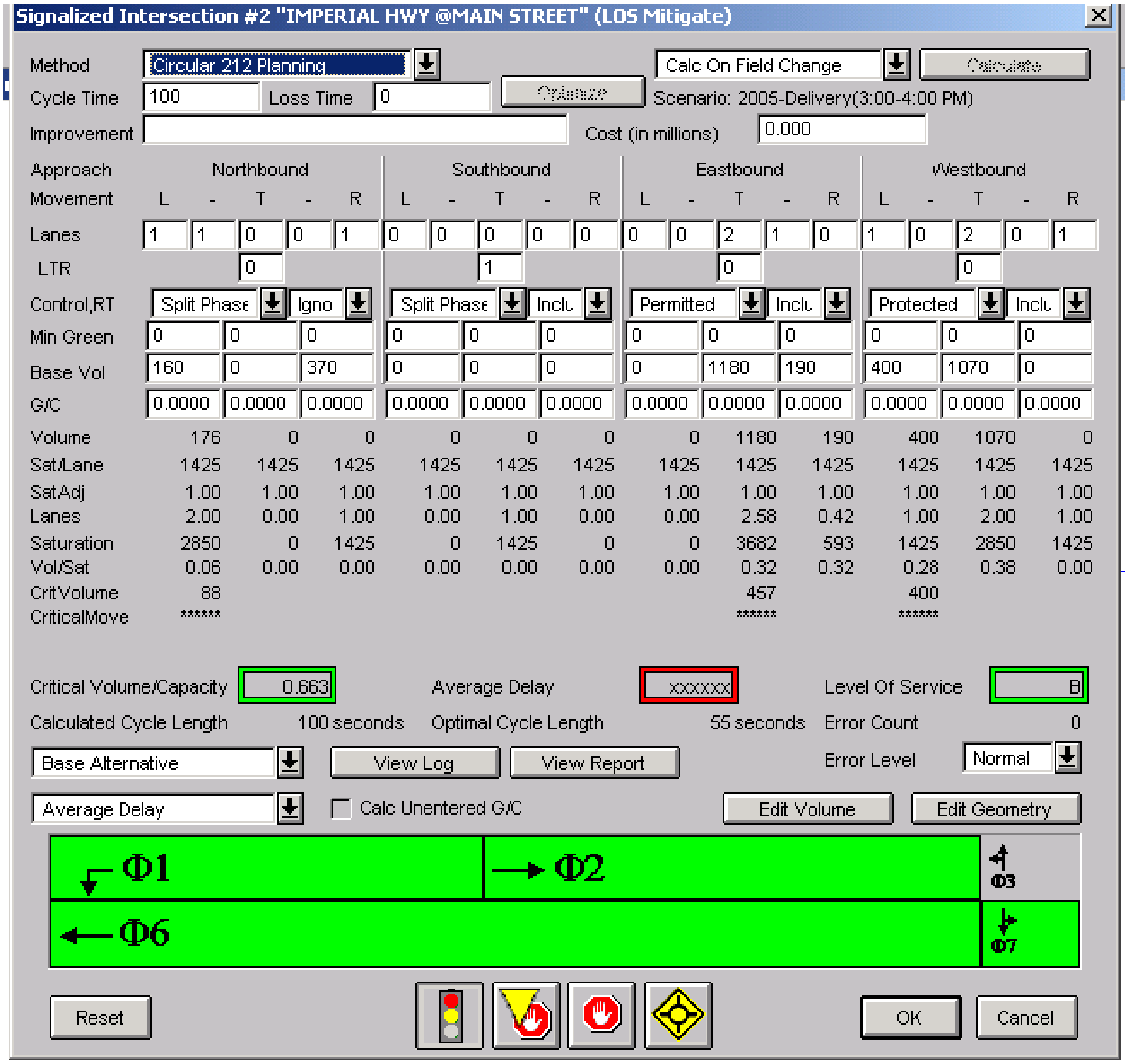
Critical Volume/Capacity: 0.673 | Average Delay: xxxxxx | Level Of Service: B

Calculated Cycle Length: 100 seconds | Optimal Cycle Length: 70 seconds | Error Count: 0

Base Alternative | View Log | View Report | Error Level: Normal

Average Delay | Calc Unentered G/C | Edit Volume | Edit Geometry

Reset | OK | Cancel



Signalized Intersection #2 "IMPERIAL HWY @MAIN STREET" (LOS Mitigate)

Method: Circular 212 Planning | Calc On Field Change | Calculate

Cycle Time: 100 | Loss Time: 0 | Optimize | Scenario: 2005-Delivery(3:00-4:00 PM)

Improvement: | Cost (in millions): 0.000

Approach	Northbound					Southbound					Eastbound					Westbound				
Movement	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Lanes	1	1	0	0	1	0	0	0	0	0	0	0	2	1	0	1	0	2	0	1
LTR			0					1					0					0		
Control,RT	Split Phase			Igno		Split Phase			Inclu		Permitted			Inclu		Protected			Inclu	
Min Green	0		0		0	0		0		0	0		0		0	0		0		0
Base Vol	160		0		370	0		0		0	0		1180		190	400		1070		0
G/C	0.0000		0.0000		0.0000	0.0000		0.0000		0.0000	0.0000		0.0000		0.0000	0.0000		0.0000		0.0000
Volume	176		0		0	0		0		0	0		1180		190	400		1070		0
Sat/Lane	1425		1425		1425	1425		1425		1425	1425		1425		1425	1425		1425		1425
SatAdj	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00
Lanes	2.00		0.00		1.00	0.00		1.00		0.00	0.00		2.58		0.42	1.00		2.00		1.00
Saturation	2850		0		1425	0		1425		0	0		3682		593	1425		2850		1425
Vol/Sat	0.06		0.00		0.00	0.00		0.00		0.00	0.00		0.32		0.32	0.28		0.38		0.00
CritVolume	88												457			400				
CriticalMove	******												******			******				

Critical Volume/Capacity: 0.663 | Average Delay: xxxxxx | Level Of Service: B

Calculated Cycle Length: 100 seconds | Optimal Cycle Length: 55 seconds | Error Count: 0

Base Alternative | View Log | View Report | Error Level: Normal

Average Delay | Calc Unentered G/C | Edit Volume | Edit Geometry

Φ1 | Φ2 | Φ3

Φ6 | Φ7

Reset | OK | Cancel

TRAFFIX Project (2005) Analysis Results Report—Employee PM Peak Hour

Traffix 7.6.0115 (c) 2003 Dowling Assoc. Licensed to R & A, CHICAGO, IL
2005-PM Peak (3:30-4:30 PM) Tue Jan 17, 2005 21:37:15 Page 1-1

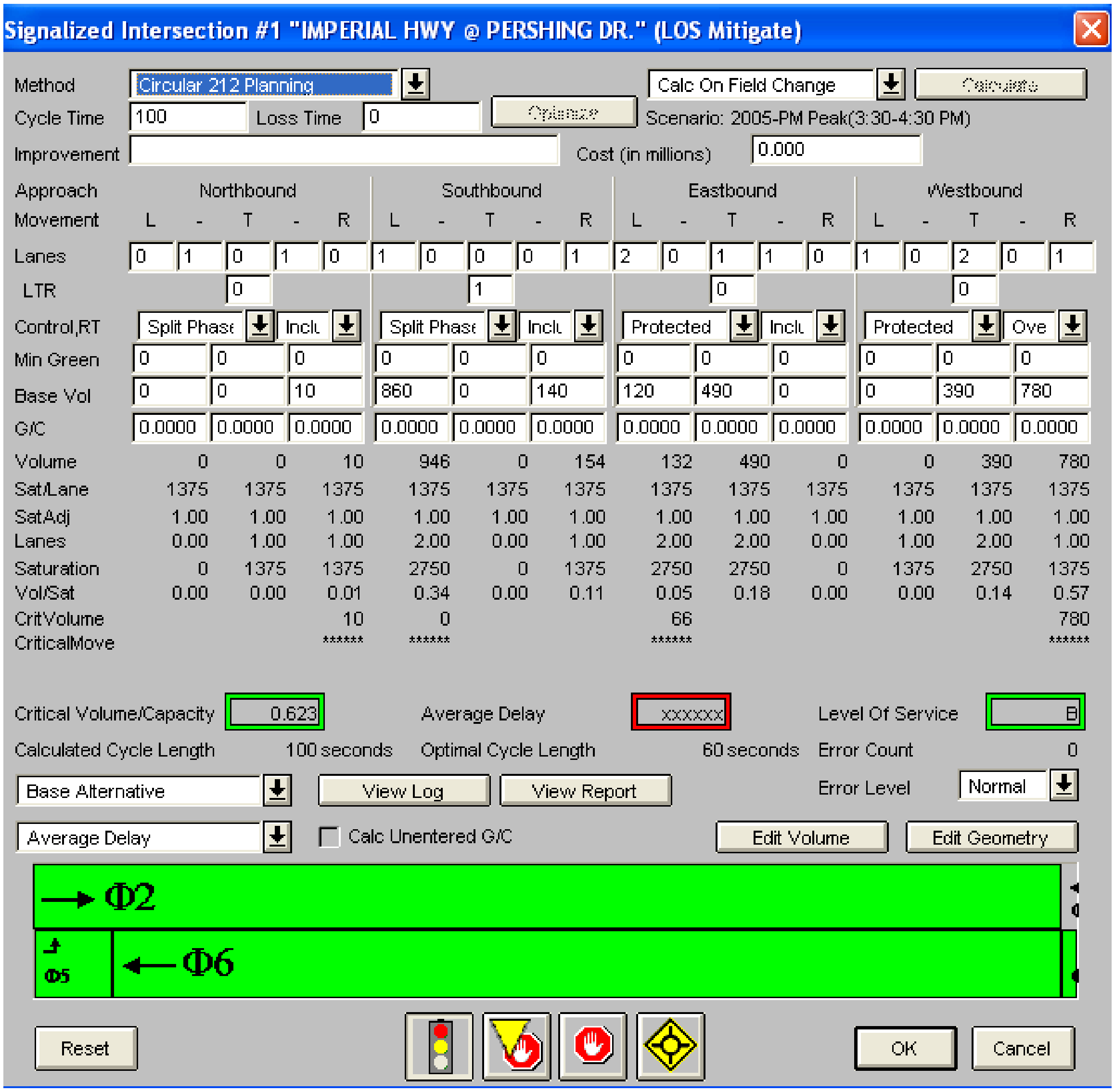
LAX SOUTH AIRFIELD EIR

Impact Analysis Report
Level Of Service

Intersection	LOS	V/C
# 1 IMPERIAL HWY @ PERSHING DR.	B	0.623
# 2 IMPERIAL HWY @MAIN STREET	B	0.688
# 3 IMPERIAL HWY @ SEPULVEDA BL.	F	1.196
# 4 IMPERIAL HWY @ NASH ST.	A	0.394
# 5 IMPERIAL HWY. @ DOUGLAS ST.	A	0.414
# 6 IMPERIAL HWY. @ AVIATION BL.	C	0.780
# 7 IMPERIAL HWY. @ 105 RAMP	D	0.883
# 8 IMPERIAL HWY. @ La CIENEGA BLV	A	0.528
# 9 IMPERIAL HWY. @ 405 NORTH RAMP	A	0.458
# 10 AVIATION BLVD. @ CENTURY BLVD.	F	1.020
# 11 AVIATION BLVD. @ 111TH	C	0.740
# 12 La CIENEGA BLVD. @ 405 S/B RAP	C	0.706
# 13 La CIENEGA BLVD. @ CENTURY BLV	E	0.922
# 14 La CIENEGA BLVD. @ 405 S/B RAM	A	0.567
# 15 La CIENEGA BLVD. @ 104 TH STRE	A	0.564
# 16 La CIENEGA BLVD. @ LENNOX BLVD	A	0.460
# 17 La CIENEGA BLVD. @ 111TH STREE	B	0.622
# 18 La CIENEGA BLVD. @ 405 S/B RAM	A	0.456
# 19 CENTURY BLVD. @ 405 N/B RAMP	A	0.579

Traffix 7.6.0115 (c) 2003 Dowling Assoc. Licensed to R & A, CHICAGO, IL

TRAFFIX Project (2005) Employee PM Peak Hour Intersection Summary Reports



Signalized Intersection #1 "IMPERIAL HWY @ PERSHING DR." (LOS Mitigate)

Method: Circular 212 Planning | Calc On Field Change | Calculate
Cycle Time: 100 | Loss Time: 0 | Optimize | Scenario: 2005-PM Peak(3:30-4:30 PM)
Improvement: | Cost (in millions): 0.000

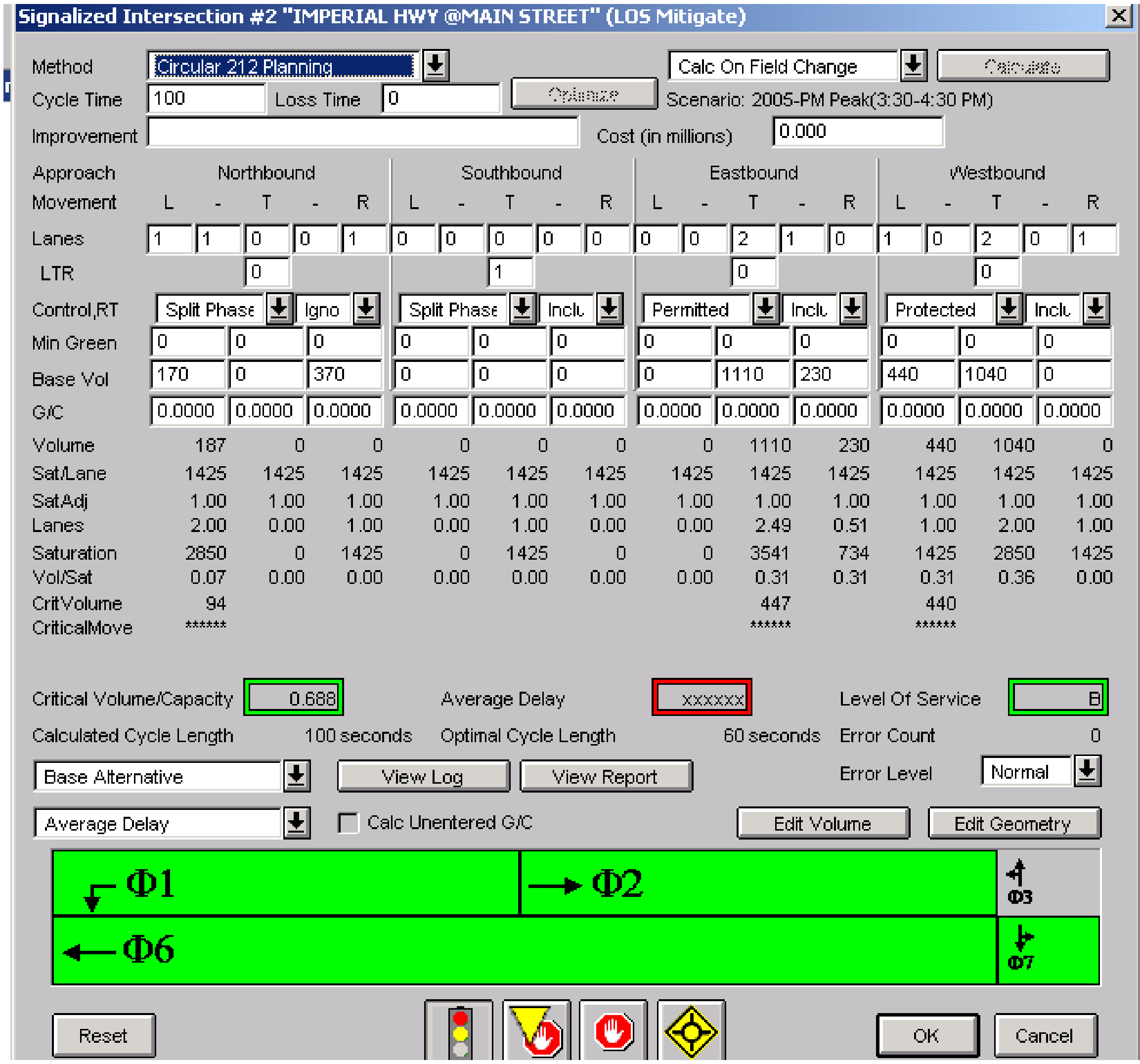
Approach	Northbound					Southbound					Eastbound					Westbound				
Movement	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Lanes	0	1	0	1	0	1	0	0	0	1	2	0	1	1	0	1	0	2	0	1
LTR			0					1					0					0		

	Northbound			Southbound			Eastbound			Westbound		
Control,RT	Split Phase		Inclu	Split Phase		Inclu	Protected		Inclu	Protected		Ove
Min Green	0	0	0	0	0	0	0	0	0	0	0	0
Base Vol	0	0	10	860	0	140	120	490	0	0	390	780
G/C	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Volume	0	0	10	946	0	154	132	490	0	0	390	780
Sat/Lane	1375	1375	1375	1375	1375	1375	1375	1375	1375	1375	1375	1375
SatAdj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes	0.00	1.00	1.00	2.00	0.00	1.00	2.00	2.00	0.00	1.00	2.00	1.00
Saturation	0	1375	1375	2750	0	1375	2750	2750	0	1375	2750	1375
Vol/Sat	0.00	0.00	0.01	0.34	0.00	0.11	0.05	0.18	0.00	0.00	0.14	0.57
CritVolume			10	0			66					780
CriticalMove			******	******			******					******

Critical Volume/Capacity: 0.623 | Average Delay: xxxxxx | Level Of Service: B
Calculated Cycle Length: 100 seconds | Optimal Cycle Length: 60 seconds | Error Count: 0
Base Alternative | View Log | View Report | Error Level: Normal
Average Delay | Calc Unentered G/C | Edit Volume | Edit Geometry

Φ2
Φ5
Φ6

Reset | OK | Cancel



Signalized Intersection #2 "IMPERIAL HWY @MAIN STREET" (LOS Mitigate)

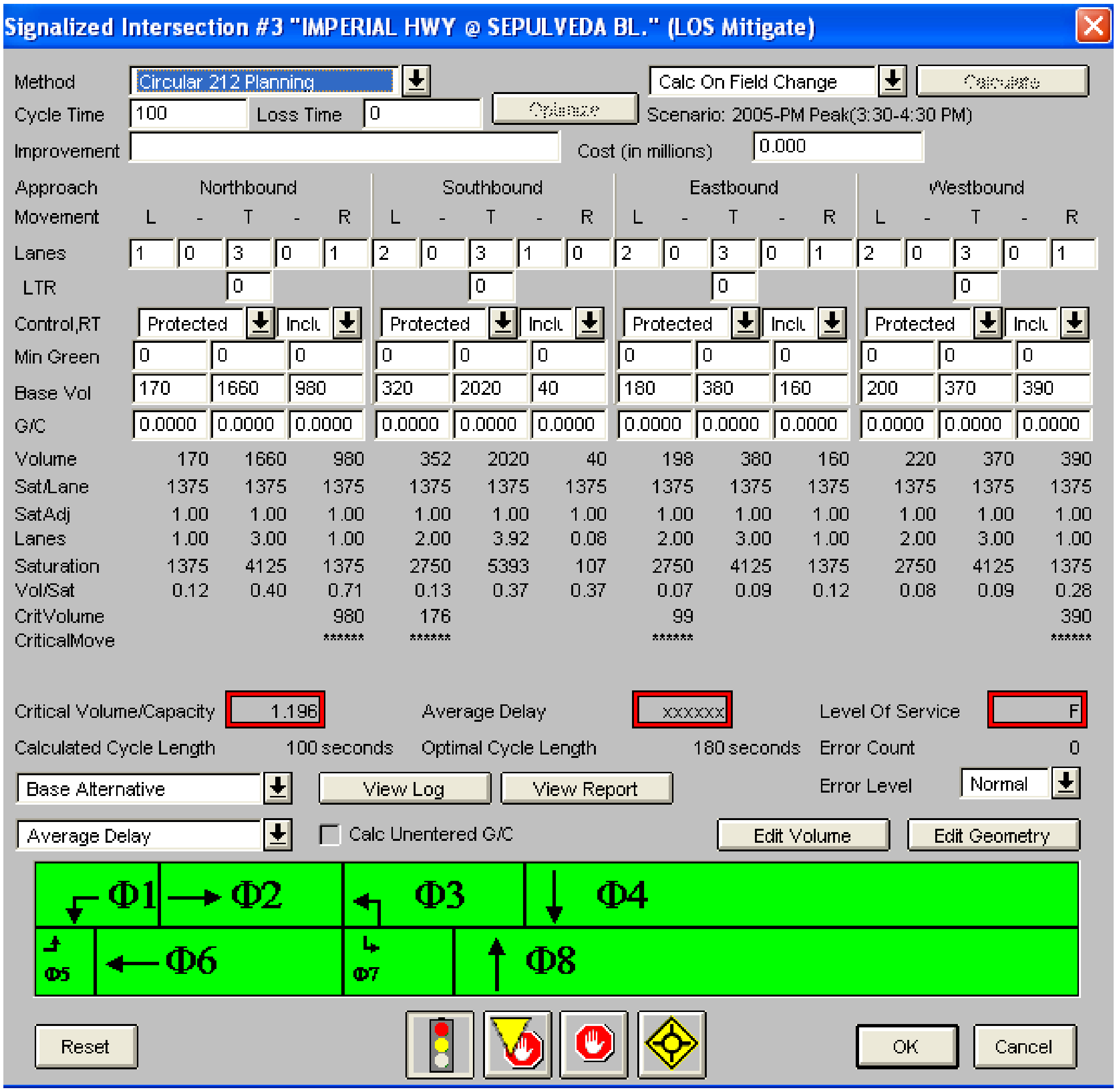
Method: Circular 212 Planning | Calc On Field Change | Calculate
Cycle Time: 100 | Loss Time: 0 | Optimize | Scenario: 2005-PM Peak(3:30-4:30 PM)
Improvement: | Cost (in millions): 0.000

Approach	Northbound					Southbound					Eastbound					Westbound				
Movement	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Lanes	1	1	0	0	1	0	0	0	0	0	0	0	2	1	0	1	0	2	0	1
LTR			0					1					0					0		

	Northbound			Southbound			Eastbound			Westbound		
Control,RT	Split Phase		Igno	Split Phase		Inclu	Permitted		Inclu	Protected		Inclu
Min Green	0	0	0	0	0	0	0	0	0	0	0	0
Base Vol	170	0	370	0	0	0	0	1110	230	440	1040	0
G/C	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Volume	187	0	0	0	0	0	0	1110	230	440	1040	0
Sat/Lane	1425	1425	1425	1425	1425	1425	1425	1425	1425	1425	1425	1425
SatAdj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes	2.00	0.00	1.00	0.00	1.00	0.00	0.00	2.49	0.51	1.00	2.00	1.00
Saturation	2850	0	1425	0	1425	0	0	3541	734	1425	2850	1425
Vol/Sat	0.07	0.00	0.00	0.00	0.00	0.00	0.00	0.31	0.31	0.31	0.36	0.00
CritVolume	94							447		440		
CriticalMove	******							******		******		

Critical Volume/Capacity: 0.688 | Average Delay: xxxxxx | Level Of Service: B
Calculated Cycle Length: 100 seconds | Optimal Cycle Length: 60 seconds | Error Count: 0
Base Alternative | View Log | View Report | Error Level: Normal
Average Delay | Calc Unentered G/C | Edit Volume | Edit Geometry

Reset | OK | Cancel



Signalized Intersection #3 "IMPERIAL HWY @ SEPULVEDA BL." (LOS Mitigate)

Method: Circular 212 Planning | Calc On Field Change | Calculate

Cycle Time: 100 | Loss Time: 0 | Optimize | Scenario: 2005-PM Peak(3:30-4:30 PM)

Improvement: | Cost (in millions): 0.000

Approach	Northbound					Southbound					Eastbound					Westbound				
Movement	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Lanes	1	0	3	0	1	2	0	3	1	0	2	0	3	0	1	2	0	3	0	1
LTR			0					0					0					0		
Control,RT	Protected				Inclu	Protected				Inclu	Protected				Inclu	Protected				Inclu
Min Green	0		0		0	0		0		0	0		0		0	0		0		0
Base Vol	170		1660		980	320		2020		40	180		380		160	200		370		390
G/C	0.0000		0.0000		0.0000	0.0000		0.0000		0.0000	0.0000		0.0000		0.0000	0.0000		0.0000		0.0000
Volume	170		1660		980	352		2020		40	198		380		160	220		370		390
Sat/Lane	1375		1375		1375	1375		1375		1375	1375		1375		1375	1375		1375		1375
SatAdj	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00
Lanes	1.00		3.00		1.00	2.00		3.92		0.08	2.00		3.00		1.00	2.00		3.00		1.00
Saturation	1375		4125		1375	2750		5393		107	2750		4125		1375	2750		4125		1375
Vol/Sat	0.12		0.40		0.71	0.13		0.37		0.37	0.07		0.09		0.12	0.08		0.09		0.28
CritVolume					980	176					99									390
CriticalMove					******	******					******									******

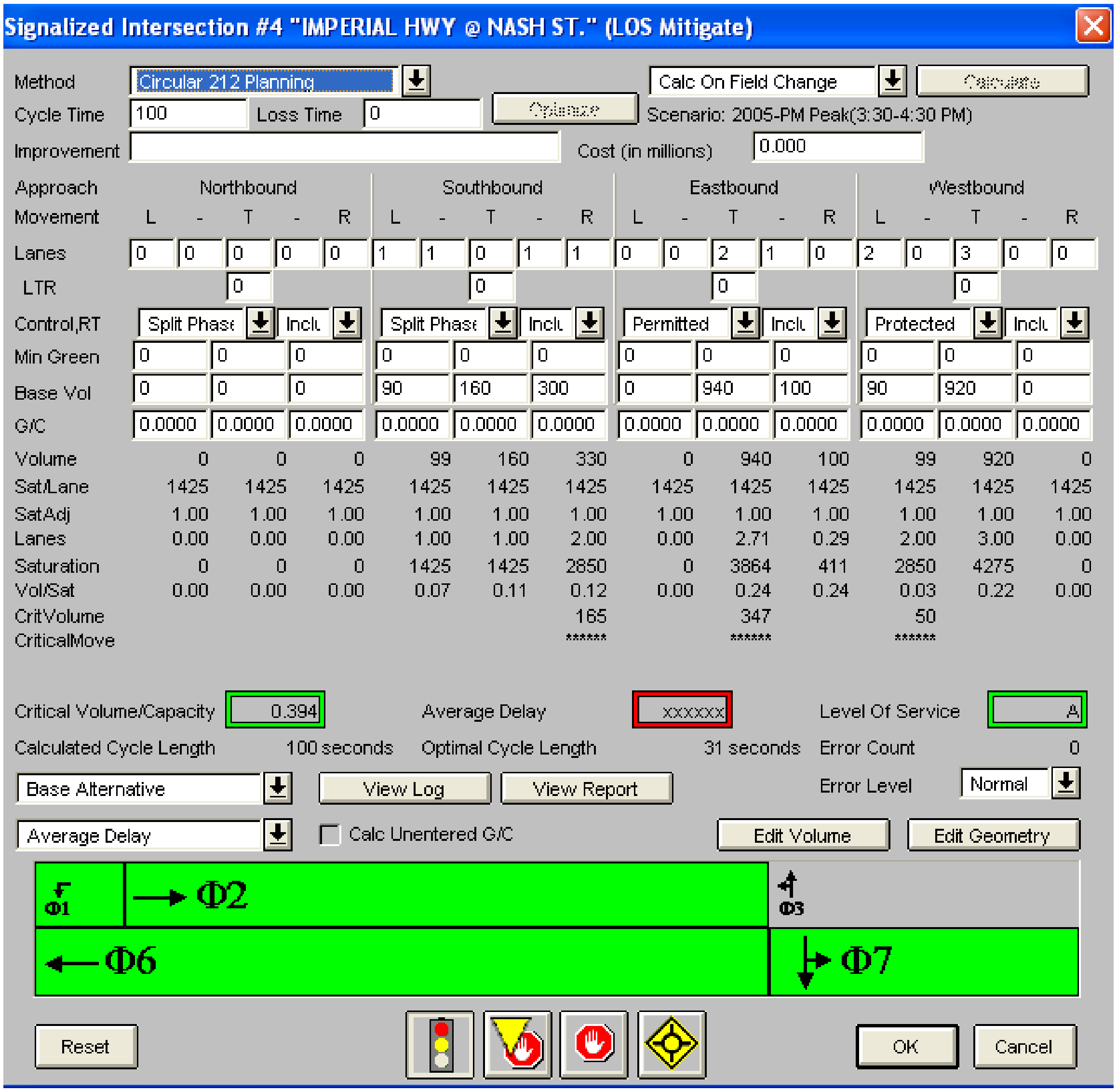
Critical Volume/Capacity: 1.196 | Average Delay: xxxxxx | Level Of Service: F

Calculated Cycle Length: 100 seconds | Optimal Cycle Length: 180 seconds | Error Count: 0

Base Alternative | View Log | View Report | Error Level: Normal

Average Delay | Calc Unentered G/C | Edit Volume | Edit Geometry

Reset | OK | Cancel



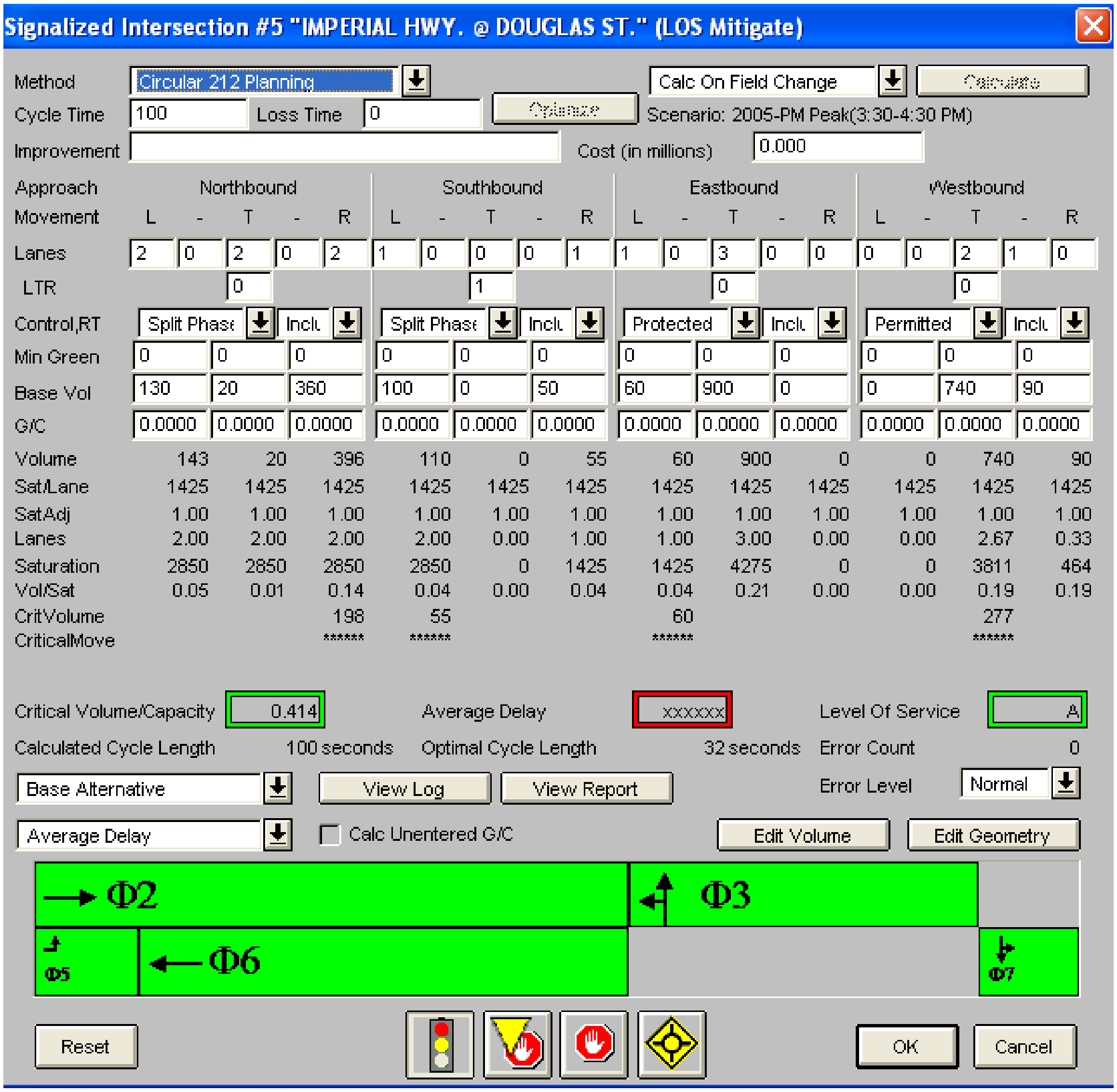
Signalized Intersection #4 "IMPERIAL HWY @ NASH ST." (LOS Mitigate)

Method: Circular 212 Planning | Calc On Field Change | Calculate
Cycle Time: 100 | Loss Time: 0 | Optimize | Scenario: 2005-PM Peak(3:30-4:30 PM)
Improvement: | Cost (in millions): 0.000

Approach	Northbound					Southbound					Eastbound					Westbound				
Movement	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Lanes	0	0	0	0	0	1	1	0	1	1	0	0	2	1	0	2	0	3	0	0
LTR			0					0					0					0		
Control,RT	Split Phase				Inclu	Split Phase				Inclu	Permitted				Inclu	Protected				Inclu
Min Green	0		0		0	0		0		0	0		0		0	0		0		0
Base Vol	0		0		0	90		160		300	0		940		100	90		920		0
G/C	0.0000		0.0000		0.0000	0.0000		0.0000		0.0000	0.0000		0.0000		0.0000	0.0000		0.0000		0.0000
Volume	0		0		0	99		160		330	0		940		100	99		920		0
Sat/Lane	1425		1425		1425	1425		1425		1425	1425		1425		1425	1425		1425		1425
SatAdj	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00
Lanes	0.00		0.00		0.00	1.00		1.00		2.00	0.00		2.71		0.29	2.00		3.00		0.00
Saturation	0		0		0	1425		1425		2850	0		3864		411	2850		4275		0
Vol/Sat	0.00		0.00		0.00	0.07		0.11		0.12	0.00		0.24		0.24	0.03		0.22		0.00
CritVolume										165			347			50				
CriticalMove										******			******			******				

Critical Volume/Capacity: 0.394 | Average Delay: xxxxxx | Level Of Service: A
Calculated Cycle Length: 100 seconds | Optimal Cycle Length: 31 seconds | Error Count: 0
Base Alternative | View Log | View Report | Error Level: Normal
Average Delay | Calc Unentered G/C | Edit Volume | Edit Geometry

Reset | OK | Cancel



Signalized Intersection #5 "IMPERIAL HWY. @ DOUGLAS ST." (LOS Mitigate)

Method: Circular 212 Planning | Calc On Field Change | Calculate

Cycle Time: 100 | Loss Time: 0 | Optimize | Scenario: 2005-PM Peak(3:30-4:30 PM)

Improvement: | Cost (in millions): 0.000

Approach	Northbound					Southbound					Eastbound					Westbound				
Movement	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Lanes	2	0	2	0	2	1	0	0	0	1	1	0	3	0	0	0	0	2	1	0
LTR			0					1					0					0		
Control,RT	Split Phase			Inclu		Split Phase			Inclu		Protected			Inclu		Permitted			Inclu	

	NB L	NB T	NB R	SB L	SB T	SB R	EB L	EB T	EB R	WB L	WB T	WB R
Min Green	0	0	0	0	0	0	0	0	0	0	0	0
Base Vol	130	20	360	100	0	50	60	900	0	0	740	90
G/C	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Volume	143	20	396	110	0	55	60	900	0	0	740	90
Sat/Lane	1425	1425	1425	1425	1425	1425	1425	1425	1425	1425	1425	1425
SatAdj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes	2.00	2.00	2.00	2.00	0.00	1.00	1.00	3.00	0.00	0.00	2.67	0.33
Saturation	2850	2850	2850	2850	0	1425	1425	4275	0	0	3811	464
Vol/Sat	0.05	0.01	0.14	0.04	0.00	0.04	0.04	0.21	0.00	0.00	0.19	0.19
CritVolume			198	55			60				277	
CriticalMove			******	******			******				******	

Critical Volume/Capacity: 0.414 | Average Delay: xxxxxx | Level Of Service: A

Calculated Cycle Length: 100 seconds | Optimal Cycle Length: 32 seconds | Error Count: 0

Base Alternative | View Log | View Report | Error Level: Normal

Average Delay | Calc Unentered G/C | Edit Volume | Edit Geometry

Φ2 Φ3 Φ5 Φ6 Φ7

Reset | OK | Cancel

Signalized Intersection #6 "IMPERIAL HWY. @ AVIATION BL." (LOS Mitigate)

Method: Circular 212 Planning | Calc On Field Change | Calculate

Cycle Time: 100 | Loss Time: 0 | Optimize | Scenario: 2005-PM Peak(3:30-4:30 PM)

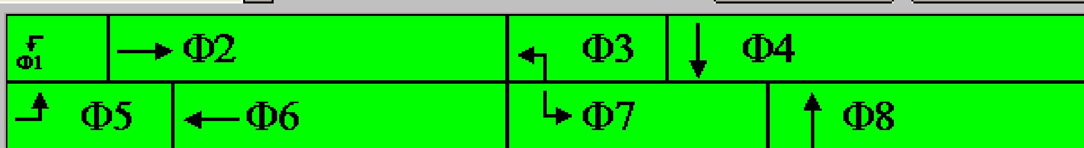
Improvement: | Cost (in millions): 0.000

Approach	Northbound			Southbound			Eastbound			Westbound		
Movement	L	T	R	L	T	R	L	T	R	L	T	R
Lanes	2 / 0	2 / 0	1	2 / 0	1 / 1	1	2 / 0	2 / 1	0	2 / 0	3 / 0	1
LTR		0			0			0			0	
Control,RT	Protected		Ove	Protected		Ove	Protected		Inclu	Protected		Ove
Min Green	0	0	0	0	0	0	0	0	0	0	0	0
Base Vol	180	490	420	470	520	150	270	920	260	190	550	550
G/C	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Volume	198	490	420	517	520	165	297	920	260	209	550	550
Sat/Lane	1375	1375	1375	1375	1375	1375	1375	1375	1375	1375	1375	1375
SatAdj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes	2.00	2.00	1.00	2.00	2.00	1.00	2.00	2.34	0.66	2.00	3.00	1.00
Saturation	2750	2750	1375	2750	2750	1375	2750	3216	909	2750	4125	1375
Vol/Sat	0.07	0.18	0.31	0.19	0.19	0.12	0.11	0.29	0.29	0.08	0.13	0.40
CritVolume			420	259				393		0		
CriticalMove			******	******				******		******		

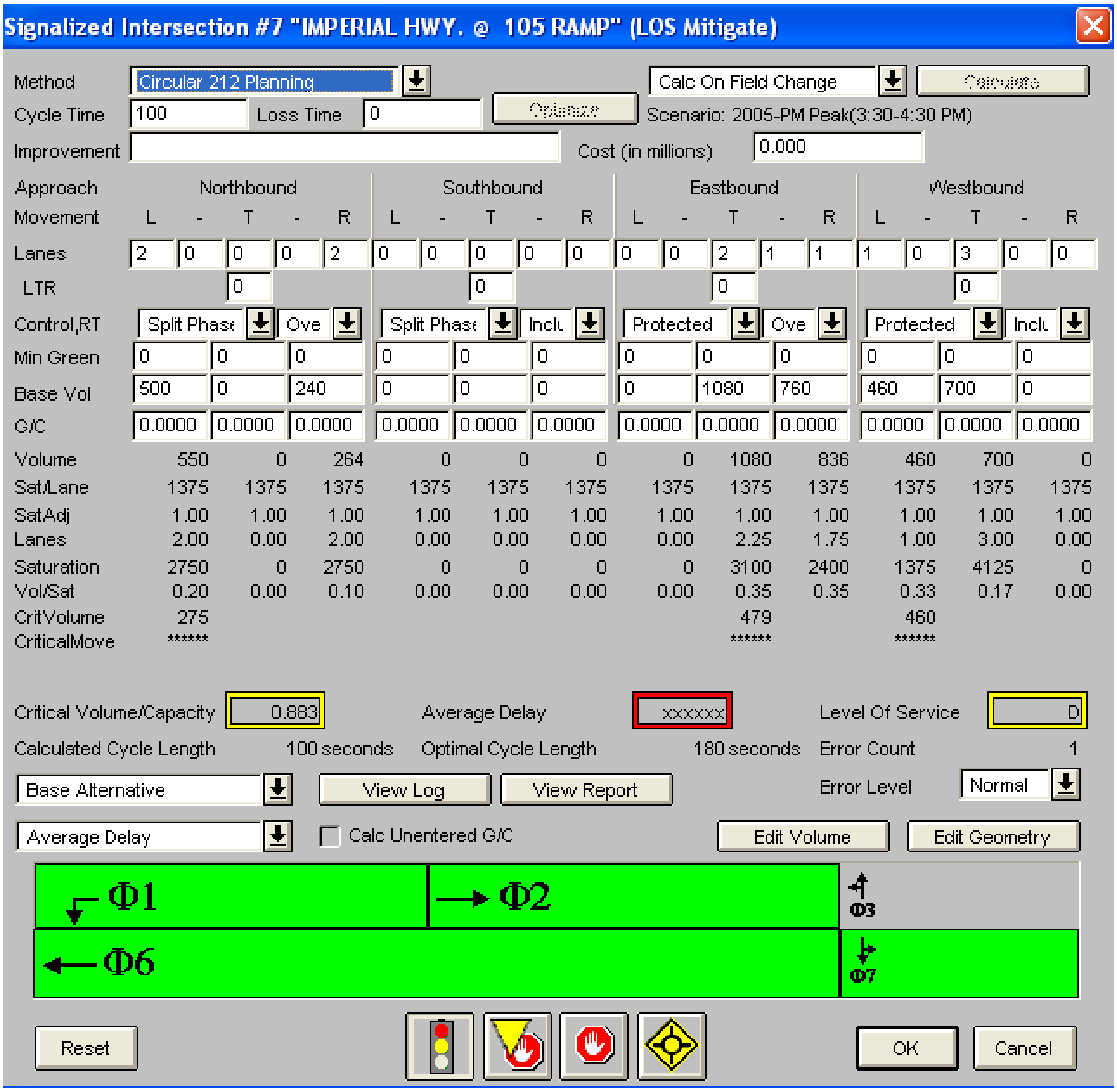
Critical Volume/Capacity	0.780	Average Delay	xxxxxx	Level Of Service	C
Calculated Cycle Length	100 seconds	Optimal Cycle Length	103 seconds	Error Count	0

Base Alternative | View Log | View Report | Error Level: Normal

Average Delay | Calc Unentered G/C | Edit Volume | Edit Geometry



Reset | OK | Cancel



Signalized Intersection #7 "IMPERIAL HWY. @ 105 RAMP" (LOS Mitigate)

Method: Circular 212 Planning | Calc On Field Change | Calculate

Cycle Time: 100 | Loss Time: 0 | Optimize | Scenario: 2005-PM Peak(3:30-4:30 PM)

Improvement: | Cost (in millions): 0.000

Approach	Northbound					Southbound					Eastbound					Westbound				
Movement	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Lanes	2	0	0	0	2	0	0	0	0	0	0	0	2	1	1	1	0	3	0	0
LTR			0					0					0					0		

	Northbound			Southbound			Eastbound			Westbound		
Control,RT	Split Phase		Ove	Split Phase		Inclu	Protected		Ove	Protected		Inclu
Min Green	0	0	0	0	0	0	0	0	0	0	0	0
Base Vol	500	0	240	0	0	0	0	1080	760	460	700	0
G/C	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Volume	550	0	264	0	0	0	0	1080	836	460	700	0
Sat/Lane	1375	1375	1375	1375	1375	1375	1375	1375	1375	1375	1375	1375
SatAdj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes	2.00	0.00	2.00	0.00	0.00	0.00	0.00	2.25	1.75	1.00	3.00	0.00
Saturation	2750	0	2750	0	0	0	0	3100	2400	1375	4125	0
Vol/Sat	0.20	0.00	0.10	0.00	0.00	0.00	0.00	0.35	0.35	0.33	0.17	0.00
CritVolume	275							479		460		
CriticalMove	******							******		******		

Critical Volume/Capacity: 0.883 | Average Delay: xxxxxx | Level Of Service: D

Calculated Cycle Length: 100 seconds | Optimal Cycle Length: 180 seconds | Error Count: 1

Base Alternative | View Log | View Report | Error Level: Normal

Average Delay | Calc Unentered G/C | Edit Volume | Edit Geometry

Φ1 | Φ2 | Φ3

Φ6 | Φ7

Reset | OK | Cancel

Signalized Intersection #8 "IMPERIAL HWY. @ La CIENEGA BLVD." (LOS Mitigate)

Method: Circular 212 Planning | Calc On Field Change | Calculate

Cycle Time: 100 | Loss Time: 0 | Optimize | Scenario: 2005-PM Peak(3:30-4:30 PM)

Improvement: | Cost (in millions): 0.000

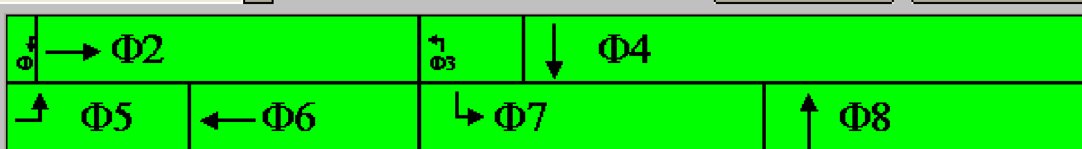
Approach	Northbound					Southbound					Eastbound					Westbound				
Movement	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Lanes	2	0	1	1	1	2	0	1	1	1	2	0	3	0	2	2	0	3	0	2
LTR			0					0					0					0		
Control,RT	Protected				Inclu	Protected				Inclu	Protected				Ove	Protected				Ove
Min Green	0		0		0	0		0		0	0		0		0	0		0		0
Base Vol	110		230		380	420		360		560	230		770		190	40		470		280
G/C	0.0000		0.0000		0.0000	0.0000		0.0000		0.0000	0.0000		0.0000		0.0000	0.0000		0.0000		0.0000
Volume	121		230		418	462		360		616	253		770		209	44		470		308
Sat/Lane	1375		1375		1375	1375		1375		1375	1375		1375		1375	1375		1375		1375
SatAdj	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00
Lanes	2.00		1.06		1.94	2.00		1.11		1.89	2.00		3.00		2.00	2.00		3.00		2.00
Saturation	2750		1464		2661	2750		1522		2603	2750		4125		2750	2750		4125		2750
Vol/Sat	0.04		0.16		0.16	0.17		0.24		0.24	0.09		0.19		0.08	0.02		0.11		0.11
CritVolume			216			231							257			22				
CriticalMove			******			******							******			******				

Critical Volume/Capacity: 0.528 | Average Delay: xxxxxx | Level Of Service: A

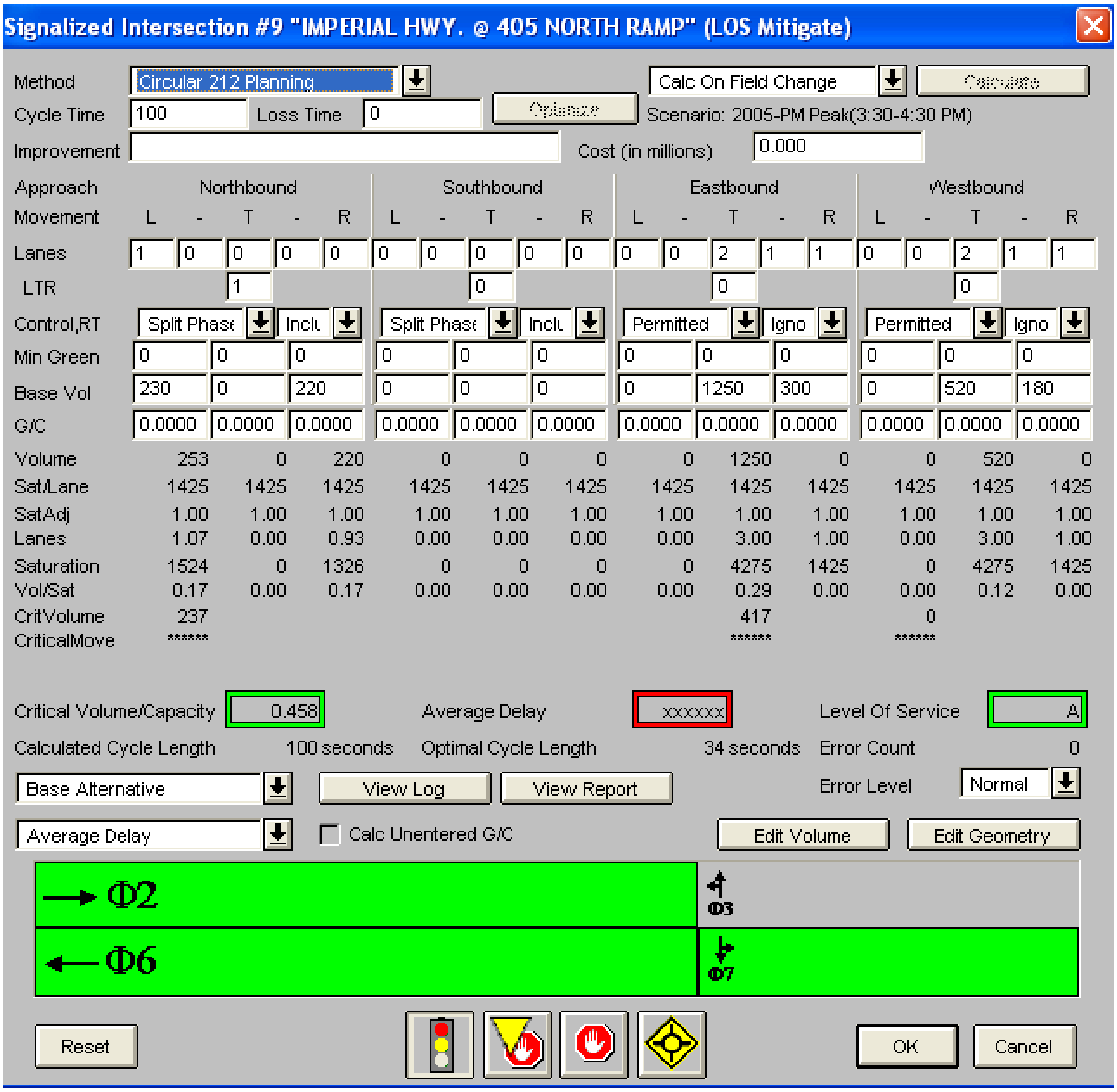
Calculated Cycle Length: 100 seconds | Optimal Cycle Length: 48 seconds | Error Count: 0

Base Alternative | View Log | View Report | Error Level: Normal

Average Delay | Calc Unentered G/C | Edit Volume | Edit Geometry



Reset | OK | Cancel



Signalized Intersection #9 "IMPERIAL HWY. @ 405 NORTH RAMP" (LOS Mitigate)

Method: Circular 212 Planning | Calc On Field Change | Calculate

Cycle Time: 100 | Loss Time: 0 | Optimize | Scenario: 2005-PM Peak(3:30-4:30 PM)

Improvement: | Cost (in millions): 0.000

Approach	Northbound			Southbound			Eastbound			Westbound		
Movement	L	T	R	L	T	R	L	T	R	L	T	R
Lanes	1 0	0 0	0	0 0	0 0	0	0 0	2 1	1	0 0	2 1	1
LTR		1			0			0			0	
Control,RT	Split Phase		Inclu	Split Phase		Inclu	Permitted		Igno	Permitted		Igno
Min Green	0	0	0	0	0	0	0	0	0	0	0	0
Base Vol	230	0	220	0	0	0	0	1250	300	0	520	180
G/C	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Volume	253	0	220	0	0	0	0	1250	0	0	520	0
Sat/Lane	1425	1425	1425	1425	1425	1425	1425	1425	1425	1425	1425	1425
SatAdj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes	1.07	0.00	0.93	0.00	0.00	0.00	0.00	3.00	1.00	0.00	3.00	1.00
Saturation	1524	0	1326	0	0	0	0	4275	1425	0	4275	1425
Vol/Sat	0.17	0.00	0.17	0.00	0.00	0.00	0.00	0.29	0.00	0.00	0.12	0.00
CritVolume	237							417		0		
CriticalMove	******							******		******		

Critical Volume/Capacity: 0.458 | Average Delay: xxxxxx | Level Of Service: A

Calculated Cycle Length: 100 seconds | Optimal Cycle Length: 34 seconds | Error Count: 0

Base Alternative | View Log | View Report | Error Level: Normal

Average Delay | Calc Unentered G/C | Edit Volume | Edit Geometry

Reset | OK | Cancel

Signalized Intersection #10 "AVIATION BLVD. @ CENTURY BLVD." (LOS Mitigate)

Method: Circular 212 Planning | Calc On Field Change | Calculate

Cycle Time: 100 | Loss Time: 0 | Optimize | Scenario: 2005-PM Peak(3:30-4:30 PM)

Improvement: | Cost (in millions): 0.000

Approach	Northbound					Southbound					Eastbound					Westbound				
Movement	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Lanes	2	0	1	1	0	2	0	2	0	1	1	0	3	1	0	1	0	3	1	0
LTR			0					0					0					0		

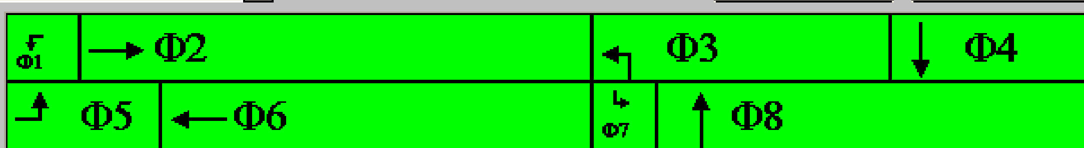
	Northbound			Southbound			Eastbound			Westbound		
Control,RT	Protected		Inclu	Protected		Inclu	Protected		Inclu	Protected		Inclu
Min Green	0	0	0	0	0	0	0	0	0	0	0	0
Base Vol	700	700	120	110	510	190	160	2260	390	100	1620	150
G/C	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Volume	770	700	120	121	510	190	160	2260	390	100	1620	150
Sat/Lane	1375	1375	1375	1375	1375	1375	1375	1375	1375	1375	1375	1375
SatAdj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes	2.00	1.71	0.29	2.00	2.00	1.00	1.00	3.41	0.59	1.00	3.66	0.34
Saturation	2750	2348	402	2750	2750	1375	1375	4691	809	1375	5034	466
Vol/Sat	0.28	0.30	0.30	0.04	0.19	0.14	0.12	0.48	0.48	0.07	0.32	0.32
CritVolume	385				255			662		100		
CriticalMove	******				******			******		******		

Critical Volume/Capacity: 1.020 | Average Delay: xxxxxx | Level Of Service: F

Calculated Cycle Length: 100 seconds | Optimal Cycle Length: 180 seconds | Error Count: 0

Base Alternative | View Log | View Report | Error Level: Normal

Average Delay | Calc Unentered G/C | Edit Volume | Edit Geometry



Reset | OK | Cancel

Signalized Intersection #11 "AVIATION BLVD. @ 111TH" (LOS Mitigate)

Method: Circular 212 Planning — Calc On Field Change — Calculate

Cycle Time: 100 — Loss Time: 0 — Optimize — Scenario: 2005-PM Peak(3:30-4:30 PM)

Improvement: — Cost (in millions): 0.000

Approach	Northbound			Southbound			Eastbound			Westbound		
Movement	L	T	R	L	T	R	L	T	R	L	T	R
Lanes	1 0	1 1	0	1 0	1 1	0	1 0	0 1	0	1 0	1 1	0
LTR		0			0			0			0	
Control,RT	Permitted		Inclu	Permitted		Inclu	Permitted		Inclu	Permitted		Inclu
Min Green	0	0	0	0	0	0	0	0	0	0	0	0
Base Vol	20	1160	120	180	1040	80	110	80	30	90	50	180
G/C	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Volume	20	1160	120	180	1040	80	110	80	30	90	50	180
Sat/Lane	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500
SatAdj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes	1.00	1.81	0.19	1.00	1.86	0.14	1.00	0.73	0.27	1.00	1.00	1.00
Saturation	1500	2719	281	1500	2786	214	1500	1091	409	1500	1500	1500
Vol/Sat	0.01	0.43	0.43	0.12	0.37	0.37	0.07	0.07	0.07	0.06	0.03	0.12
CritVolume		640		180			110					180
CriticalMove		******		******			******					******

Critical Volume/Capacity: 0.740 — Average Delay: xxxxxx — Level Of Service: C

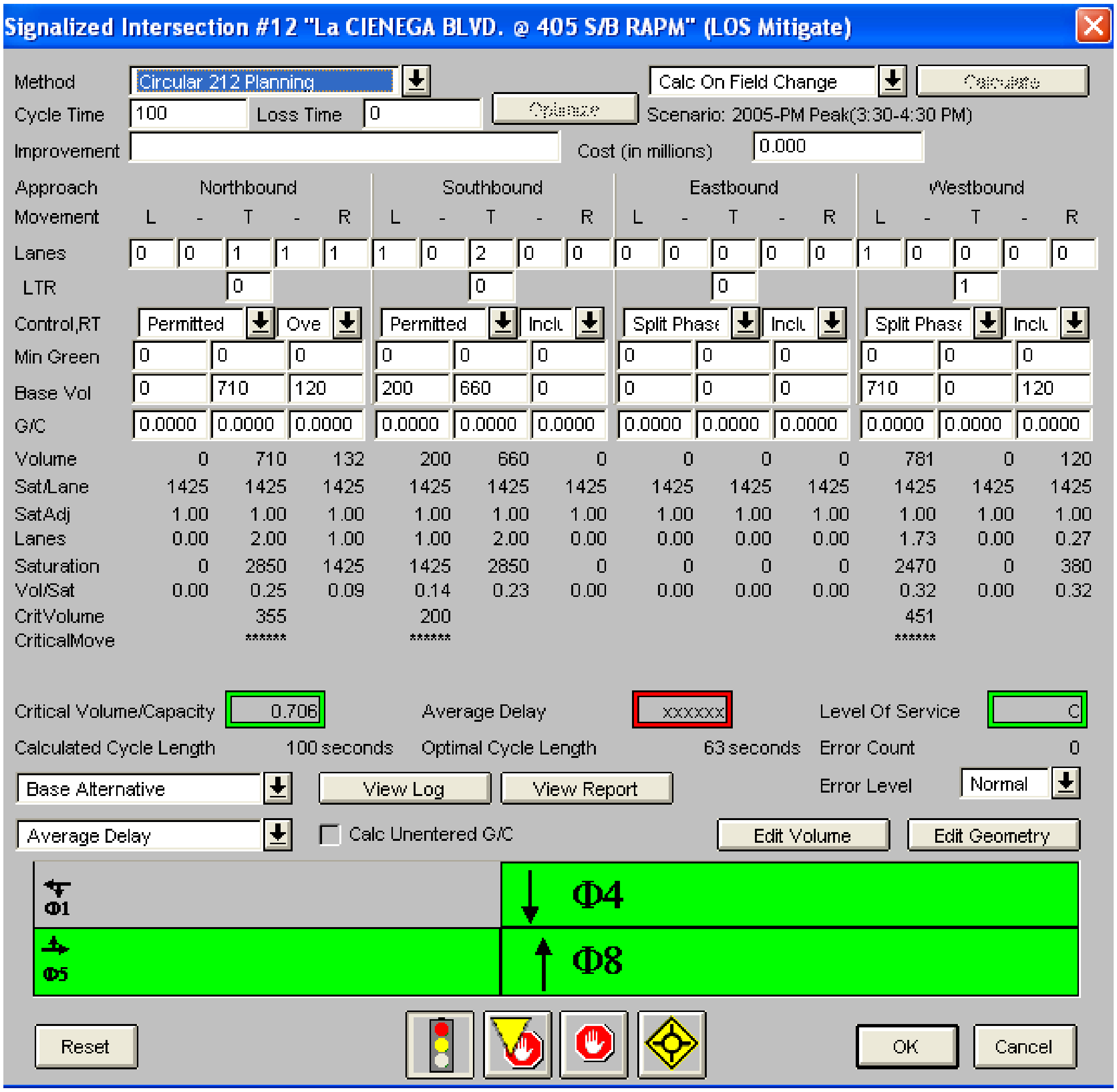
Calculated Cycle Length: 100 seconds — Optimal Cycle Length: 55 seconds — Error Count: 0

Base Alternative — View Log — View Report — Error Level: Normal

Average Delay — Calc Unentered G/C — Edit Volume — Edit Geometry

→ Φ2	↓ Φ4
← Φ6	↑ Φ8

Reset — OK — Cancel



Signalized Intersection #12 "La CIENEGA BLVD. @ 405 S/B RAPM" (LOS Mitigate)

Method: Circular 212 Planning | Calc On Field Change | Calculate

Cycle Time: 100 | Loss Time: 0 | Optimize | Scenario: 2005-PM Peak(3:30-4:30 PM)

Improvement: | Cost (in millions): 0.000

Approach	Northbound					Southbound					Eastbound					Westbound				
Movement	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Lanes	0	0	1	1	1	1	0	2	0	0	0	0	0	0	0	1	0	0	0	0
LTR			0					0					0					1		
Control,RT	Permitted			Ove		Permitted			Inclu		Split Phase			Inclu		Split Phase			Inclu	

Movement	NB L	NB T	NB R	SB L	SB T	SB R	EB L	EB T	EB R	WB L	WB T	WB R
Min Green	0	0	0	0	0	0	0	0	0	0	0	0
Base Vol	0	710	120	200	660	0	0	0	0	710	0	120
G/C	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Volume	0	710	132	200	660	0	0	0	0	781	0	120
Sat/Lane	1425	1425	1425	1425	1425	1425	1425	1425	1425	1425	1425	1425
SatAdj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes	0.00	2.00	1.00	1.00	2.00	0.00	0.00	0.00	0.00	1.73	0.00	0.27
Saturation	0	2850	1425	1425	2850	0	0	0	0	2470	0	380
Vol/Sat	0.00	0.25	0.09	0.14	0.23	0.00	0.00	0.00	0.00	0.32	0.00	0.32
CritVolume		355		200						451		
CriticalMove		******		******						******		

Critical Volume/Capacity: 0.706 | Average Delay: xxxxxx | Level Of Service: C

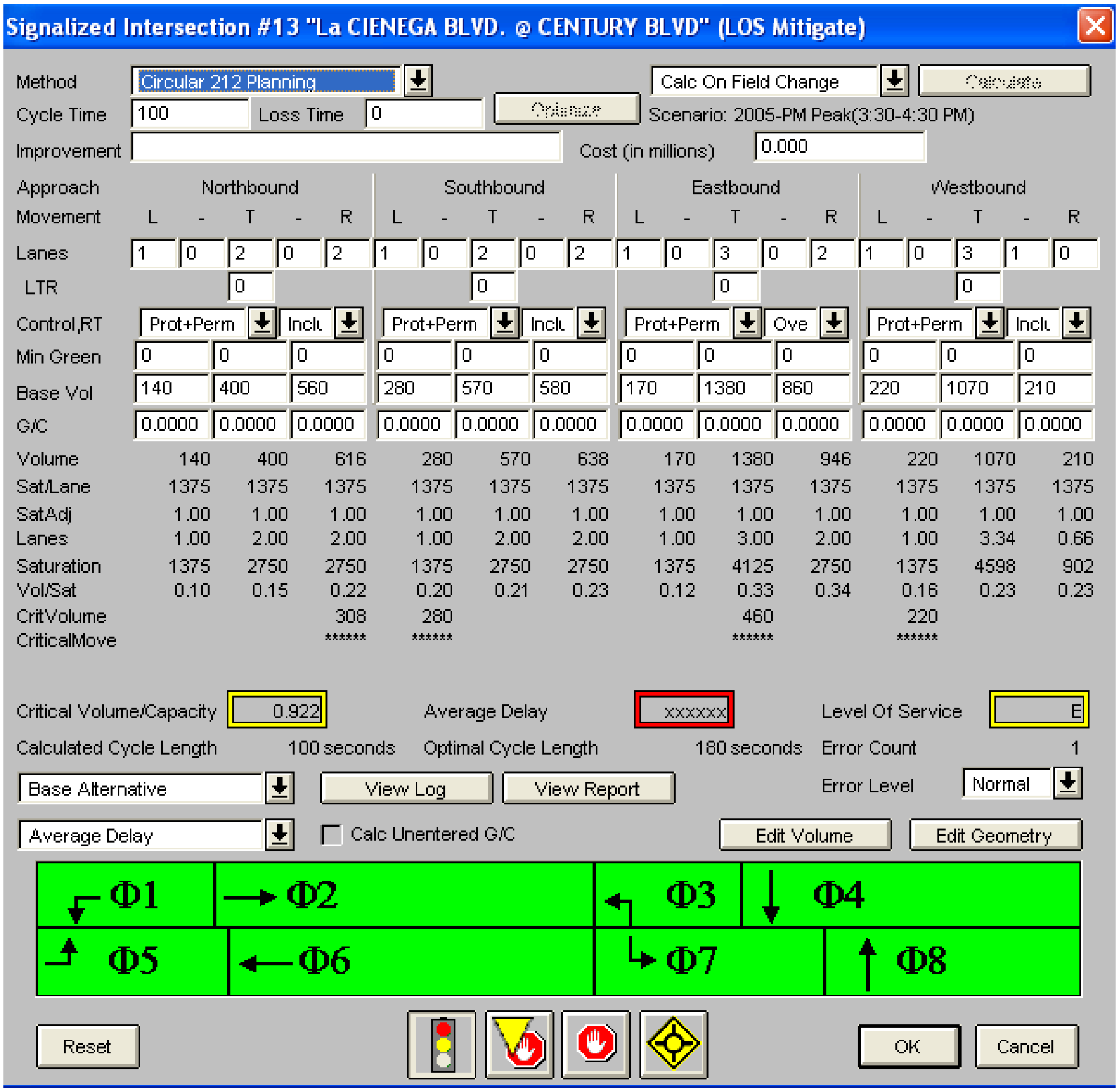
Calculated Cycle Length: 100 seconds | Optimal Cycle Length: 63 seconds | Error Count: 0

Base Alternative | View Log | View Report | Error Level: Normal

Average Delay | Calc Unentered G/C | Edit Volume | Edit Geometry

Φ1 Φ4 Φ5 Φ8

Reset | OK | Cancel



Signalized Intersection #13 "La CIENEGA BLVD. @ CENTURY BLVD" (LOS Mitigate)

Method: Circular 212 Planning | Calc On Field Change | Calculate

Cycle Time: 100 | Loss Time: 0 | Optimize | Scenario: 2005-PM Peak(3:30-4:30 PM)

Improvement: | Cost (in millions): 0.000

Approach	Northbound			Southbound			Eastbound			Westbound		
Movement	L	T	R	L	T	R	L	T	R	L	T	R
Lanes	1 - 0	2 - 0	2	1 - 0	2 - 0	2	1 - 0	3 - 0	2	1 - 0	3 - 1	0
LTR		0			0			0			0	
Control,RT	Prot+Perm		Inclu	Prot+Perm		Inclu	Prot+Perm		Ove	Prot+Perm		Inclu
Min Green	0	0	0	0	0	0	0	0	0	0	0	0
Base Vol	140	400	560	280	570	580	170	1380	860	220	1070	210
G/C	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Volume	140	400	616	280	570	638	170	1380	946	220	1070	210
Sat/Lane	1375	1375	1375	1375	1375	1375	1375	1375	1375	1375	1375	1375
SatAdj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes	1.00	2.00	2.00	1.00	2.00	2.00	1.00	3.00	2.00	1.00	3.34	0.66
Saturation	1375	2750	2750	1375	2750	2750	1375	4125	2750	1375	4598	902
Vol/Sat	0.10	0.15	0.22	0.20	0.21	0.23	0.12	0.33	0.34	0.16	0.23	0.23
CritVolume			308	280				460		220		
CriticalMove			******	******				******		******		

Critical Volume/Capacity: 0.922 | Average Delay: xxxxxx | Level Of Service: E

Calculated Cycle Length: 100 seconds | Optimal Cycle Length: 180 seconds | Error Count: 1

Base Alternative | View Log | View Report | Error Level: Normal

Average Delay | Calc Unentered G/C | Edit Volume | Edit Geometry

Signalized Intersection #14 "La CIENEGA BLVD. @ 405 S/B RAMP" (LOS Mitigate)

Method: Circular 212 Planning | Calc On Field Change | Calculate

Cycle Time: 100 | Loss Time: 0 | Optimize | Scenario: 2005-PM Peak(3:30-4:30 PM)

Improvement: | Cost (in millions): 0.000

Approach	Northbound					Southbound					Eastbound					Westbound				
Movement	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Lanes	0	0	1	1	0	2	0	2	0	0	0	0	0	0	0	0	0	0	0	2
LTR			0					0					0					0		

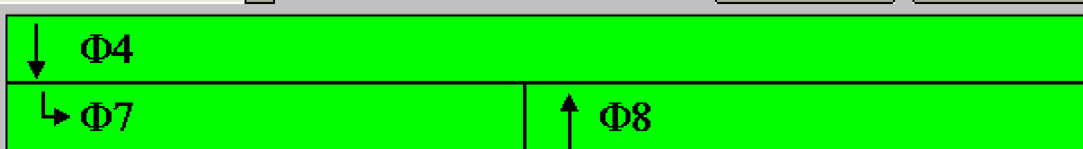
	Northbound			Southbound			Eastbound			Westbound		
Control,RT	Protected		Inclu	Protected		Inclu	Split Phase		Inclu	Split Phase		Ove
Min Green	0	0	0	0	0	0	0	0	0	0	0	0
Base Vol	0	760	50	680	1010	0	0	0	0	0	0	340
G/C	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Volume	0	760	50	748	1010	0	0	0	0	0	0	374
Sat/Lane	1375	1375	1375	1375	1375	1375	1375	1375	1375	1375	1375	1375
SatAdj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes	0.00	1.88	0.12	2.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	2.00
Saturation	0	2580	170	2750	2750	0	0	0	0	0	0	2750
Vol/Sat	0.00	0.29	0.29	0.27	0.37	0.00	0.00	0.00	0.00	0.00	0.00	0.14
CritVolume		405		374							0	
CriticalMove		******		******							******	

Critical Volume/Capacity: 0.567 | Average Delay: xxxxxx | Level Of Service: A

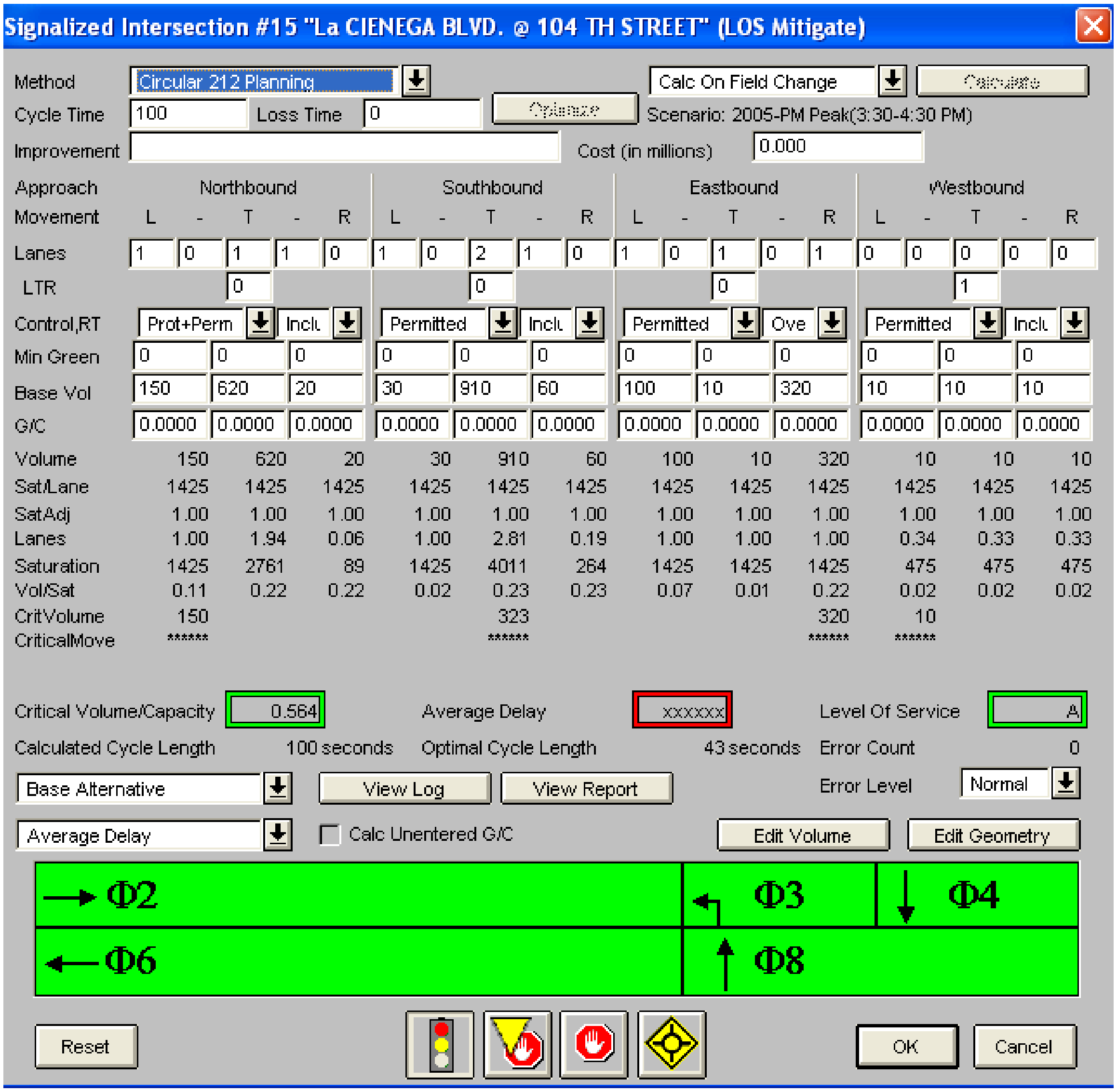
Calculated Cycle Length: 100 seconds | Optimal Cycle Length: 53 seconds | Error Count: 0

Base Alternative | View Log | View Report | Error Level: Normal

Average Delay | Calc Unentered G/C | Edit Volume | Edit Geometry



Reset | OK | Cancel



Signalized Intersection #15 "La CIENEGA BLVD. @ 104 TH STREET" (LOS Mitigate)

Method: Circular 212 Planning | Calc On Field Change | Calculate

Cycle Time: 100 | Loss Time: 0 | Optimize | Scenario: 2005-PM Peak(3:30-4:30 PM)

Improvement: | Cost (in millions): 0.000

Approach	Northbound			Southbound			Eastbound			Westbound		
Movement	L	T	R	L	T	R	L	T	R	L	T	R
Lanes	1 0	1 1	0	1 0	2 1	0	1 0	1 0	1	0 0	0 0	0
LTR		0			0			0			1	
Control,RT	Prot+Perm		Inclu	Permitted		Inclu	Permitted		Ove	Permitted		Inclu
Min Green	0	0	0	0	0	0	0	0	0	0	0	0
Base Vol	150	620	20	30	910	60	100	10	320	10	10	10
G/C	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Volume	150	620	20	30	910	60	100	10	320	10	10	10
Sat/Lane	1425	1425	1425	1425	1425	1425	1425	1425	1425	1425	1425	1425
SatAdj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes	1.00	1.94	0.06	1.00	2.81	0.19	1.00	1.00	1.00	0.34	0.33	0.33
Saturation	1425	2761	89	1425	4011	264	1425	1425	1425	475	475	475
Vol/Sat	0.11	0.22	0.22	0.02	0.23	0.23	0.07	0.01	0.22	0.02	0.02	0.02
CritVolume	150				323				320	10		
CriticalMove	******				******				******	******		

Critical Volume/Capacity: 0.564 | Average Delay: xxxxxx | Level Of Service: A

Calculated Cycle Length: 100 seconds | Optimal Cycle Length: 43 seconds | Error Count: 0

Base Alternative | View Log | View Report | Error Level: Normal

Average Delay | Calc Unentered G/C | Edit Volume | Edit Geometry

Φ2 Φ3 Φ4

Φ6 Φ8

Reset | OK | Cancel

Signalized Intersection #16 "La CIENEGA BLVD. @ LENNOX BLVD" (LOS Mitigate)

Method: Circular 212 Planning | Calc On Field Change | Calculate
Cycle Time: 100 | Loss Time: 0 | Optimize | Scenario: 2005-PM Peak(3:30-4:30 PM)
Improvement: | Cost (in millions): 0.000

Approach	Northbound					Southbound					Eastbound					Westbound				
Movement	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Lanes	0	0	1	1	0	1	0	2	1	0	0	0	0	0	0	1	1	0	0	1
LTR			0					0					0					0		

	Northbound			Southbound			Eastbound			Westbound		
Control,RT	Permitted		Inclu	Permit+Prc		Inclu	Split Phase		Inclu	Split Phase		Inclu
Min Green	0	0	0	0	0	0	0	0	0	0	0	0
Base Vol	0	680	170	150	1360	0	0	0	0	80	0	80
G/C	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Volume	0	680	170	150	1360	0	0	0	0	88	0	80
Sat/Lane	1425	1425	1425	1425	1425	1425	1425	1425	1425	1425	1425	1425
SatAdj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes	0.00	1.60	0.40	1.00	3.00	0.00	0.00	0.00	0.00	2.00	0.00	1.00
Saturation	0	2280	570	1425	4275	0	0	0	0	2850	0	1425
Vol/Sat	0.00	0.30	0.30	0.11	0.32	0.00	0.00	0.00	0.00	0.03	0.00	0.06
CritVolume		425		150								80
CriticalMove		******		******								******

Critical Volume/Capacity: 0.460 | Average Delay: xxxxxx | Level Of Service: A
Calculated Cycle Length: 100 seconds | Optimal Cycle Length: 34 seconds | Error Count: 0
Base Alternative | View Log | View Report | Error Level: Normal
Average Delay | Calc Unentered G/C | Edit Volume | Edit Geometry

Φ1 | Φ4
Φ5 | Φ8 | Φ7

Reset | OK | Cancel

Signalized Intersection #17 "La CIENEGA BLVD. @ 111TH STREET" (LOS Mitigate)

Method: Circular 212 Planning | Calc On Field Change | Calculate

Cycle Time: 100 | Loss Time: 0 | Optimize | Scenario: 2005-PM Peak(3:30-4:30 PM)

Improvement: | Cost (in millions): 0.000

Approach	Northbound			Southbound			Eastbound			Westbound		
Movement	L	T	R	L	T	R	L	T	R	L	T	R
Lanes	1 - 0	2 - 0	0	0 - 0	2 - 1	0	2 - 0	0 - 0	1	0 - 0	0 - 0	0
LTR		0			0			0			0	
Control,RT	Permitted		Inclu	Permitted		Inclu	Split Phase		Inclu	Split Phase		Inclu
Min Green	0	0	0	0	0	0	0	0	0	0	0	0
Base Vol	150	580	0	0	1300	250	240	0	220	0	0	0
G/C	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Volume	150	580	0	0	1300	250	264	0	220	0	0	0
Sat/Lane	1425	1425	1425	1425	1425	1425	1425	1425	1425	1425	1425	1425
SatAdj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes	1.00	2.00	0.00	0.00	2.52	0.48	2.00	0.00	1.00	0.00	0.00	0.00
Saturation	1425	2850	0	0	3585	690	2850	0	1425	0	0	0
Vol/Sat	0.11	0.20	0.00	0.00	0.36	0.36	0.09	0.00	0.15	0.00	0.00	0.00
CritVolume	150				517				220			
CriticalMove	******				******				******			

Critical Volume/Capacity: 0.622 | Average Delay: xxxxxx | Level Of Service: B

Calculated Cycle Length: 100 seconds | Optimal Cycle Length: 49 seconds | Error Count: 0

Base Alternative | View Log | View Report | Error Level: Normal

Average Delay | Calc Unentered G/C | Edit Volume | Edit Geometry

Φ1 | Φ4

Φ5 | Φ8

Reset | OK | Cancel

Signalized Intersection #18 "La CIENEGA BLVD. @ 405 S/B RAMP" (LOS Mitigate)

Method: Circular 212 Planning | Calc On Field Change | Calculate

Cycle Time: 100 | Loss Time: 0 | Optimize | Scenario: 2005-PM Peak(3:30-4:30 PM)

Improvement: | Cost (in millions): 0.000

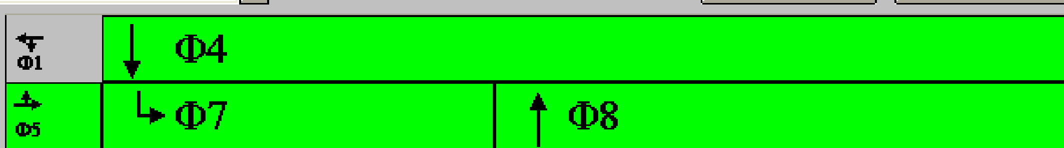
Approach	Northbound			Southbound			Eastbound			Westbound		
Movement	L	T	R	L	T	R	L	T	R	L	T	R
Lanes	1 0	2 0	1	1 0	2 1	0	0 0	0 0	0	2 0	0 0	1
LTR		0			0			0			0	
Control,RT	Permitted		Ove	Protected		Inclu	Split Phase		Inclu	Split Phase		Inclu
Min Green	0	0	0	0	0	0	0	0	0	0	0	0
Base Vol	0	700	80	240	1220	0	0	0	0	80	0	60
G/C	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Volume	0	700	80	240	1220	0	0	0	0	88	0	60
Sat/Lane	1425	1425	1425	1425	1425	1425	1425	1425	1425	1425	1425	1425
SatAdj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes	1.00	2.00	1.00	1.00	3.00	0.00	0.00	0.00	0.00	2.00	0.00	1.00
Saturation	1425	2850	1425	1425	4275	0	0	0	0	2850	0	1425
Vol/Sat	0.00	0.25	0.06	0.17	0.29	0.00	0.00	0.00	0.00	0.03	0.00	0.04
CritVolume		350		240								60
CriticalMove		******		******								******

Critical Volume/Capacity: 0.456 | Average Delay: xxxxxx | Level Of Service: A

Calculated Cycle Length: 100 seconds | Optimal Cycle Length: 34 seconds | Error Count: 0

Base Alternative | View Log | View Report | Error Level: Normal

Average Delay | Calc Unentered G/C | Edit Volume | Edit Geometry



Reset | OK | Cancel

Signalized Intersection #19 "CENTURY BLVD. @ 405 N/B RAMP" (LOS Mitigate)

Method: Circular 212 Planning — Calc On Field Change — Calculate

Cycle Time: 100 — Loss Time: 0 — Optimize — Scenario: 2005-PM Peak(3:30-4:30 PM)

Improvement: — Cost (in millions): 0.000

Approach	Northbound					Southbound					Eastbound					Westbound				
Movement	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Lanes	2	0	0	0	1	0	0	0	0	1	1	0	3	0	2	0	0	2	1	0
LTR			0					0					0					0		

Approach	Northbound			Southbound			Eastbound			Westbound		
Control,RT	Protected		Inclu	Permitted		Inclu	Permitted		Inclu	Permitted		Inclu
Min Green	0	0	0	0	0	0	0	0	0	0	0	0
Base Vol	640	0	360	0	0	0	20	1420	750	0	1150	0
G/C	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Volume	704	0	360	0	0	0	20	1420	825	0	1150	0
Sat/Lane	1425	1425	1425	1425	1425	1425	1425	1425	1425	1425	1425	1425
SatAdj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes	2.00	0.00	1.00	0.00	0.00	1.00	1.00	3.00	2.00	0.00	3.00	0.00
Saturation	2850	0	1425	0	0	1425	1425	4275	2850	0	4275	0
Vol/Sat	0.25	0.00	0.25	0.00	0.00	0.00	0.01	0.33	0.29	0.00	0.27	0.00
CritVolume	352							473		0		
CriticalMove	******							******		******		

Critical Volume/Capacity: 0.579 — Average Delay: xxxxxx — Level Of Service: A

Calculated Cycle Length: 100 seconds — Optimal Cycle Length: 44 seconds — Error Count: 0

Base Alternative — View Log — View Report — Error Level: Normal

Average Delay — Calc Unentered G/C — Edit Volume — Edit Geometry

→ Φ2	↰ Φ3
← Φ6	↑ Φ8

Reset — OK — Cancel

Appendix J Construction Vehicle Distributions

Appendix J provides the vehicle distribution of construction trips expected to be using the different routes entering and exiting the study area for both the non-project-related construction projects and the South Airfield Project. A description of each vehicle route is provided as well as the percentage of vehicles assumed to be distributed on each route by the type of construction vehicle. The construction vehicle routes considered include the employee trips, the employee shuttle trips between the construction employee parking lot along La Cienega Boulevard and the various project site accesses, the transfer trucks between the construction staging areas and the various project site accesses, and the delivery trucks to the various construction staging areas.

- **Table J-1**: Non-Project-Related Construction Vehicle Routes
- **Table J-2**: Project-Related Construction Vehicle Routes

Table J-1
LAX South Airfield EIR -- Non-Project-Related Construction Vehicle Routes

From	To	Route[1/]	Percentage of Trips[2/]
Employees Entering the Study Area			
I-405 South	Construction Employee Lot[5/]	I-405 NB to Century WB to La Cienega SB	23%
I-405 North	Construction Employee Lot[5/]	I-405 SB to La Cienega SB	21%
I-105 East	Construction Employee Lot[5/]	I-105 WB to Imperial WB to Aviation NB to 104th EB to La Cienega SB	32%
North Sepulveda[3/]	Construction Employee Lot[5/]	North Sepulveda to EB Century to SB La Cienega	6%
South Sepulveda	Construction Employee Lot[5/]	South Sepulveda to EB Imperial to NB Aviation to EB 104th to SB La Cienega	5%
East Century	Construction Employee Lot[5/]	East Century to SB La Cienega	3%
North La Cienega	Construction Employee Lot[5/]	North La Cienega SB	1%
South La Cienega	Construction Employee Lot[5/]	South La Cienega to WB Imperial to NB Aviation to EB 104th to SB La Cienega	0.1%
East Imperial	Construction Employee Lot[5/]	East Imperial to NB Aviation to EB 104th to SB La Cienega	5%
West Imperial	Construction Employee Lot[5/]	West Imperial to NB Aviation to EB 104th to SB La Cienega	0.03%
South Main	Construction Employee Lot[5/]	South Main to EB Imperial to NB Aviation to EB 104th to SB La Cienega	0.1%
South Douglas/Nash[4/]	Construction Employee Lot[5/]	South Douglas to EB Imperial to NB Aviation to EB 104th to SB La Cienega	1%
North Aviation	Construction Employee Lot[5/]	North Aviation to EB Century to SB La Cienega	1%
South Aviation	Construction Employee Lot[5/]	South Aviation to EB 104th to SB La Cienega	2%
East Lennox	Construction Employee Lot[5/]	East Lennox to SB La Cienega to WB 111th to NB Aviation to EB 104th to SB La Cienega	0.1%
Employees Exiting the Study Area			
Construction Employee Lot[5/]	I-405 South	La Cienega SB to I-405 SB Ramp	23%
Construction Employee Lot[5/]	I-405 North	La Cienega SB to Imperial EB to I-405 NB Ramp	21%
Construction Employee Lot[5/]	I-105 East	La Cienega SB to Imperial WB to I-105 EB Ramp	32%
Construction Employee Lot[5/]	North Sepulveda[3/]	La Cienega SB to WB 111th to NB Aviation to WB Century to N B Sepulveda	6%
Construction Employee Lot[5/]	South Sepulveda	La Cienega SB to WB Imperial to SB Sepulveda	5%
Construction Employee Lot[5/]	East Century	La Cienega SB to WB 111th to NB Aviation to EB Century	3%
Construction Employee Lot[5/]	North La Cienega	La Cienega SB to WB 111th to NB Aviation to EB Century to NB La Cienega	1%
Construction Employee Lot[5/]	South La Cienega	La Cienega SB	0.1%
Construction Employee Lot[5/]	East Imperial	La Cienega SB to EB Imperial	5%
Construction Employee Lot[5/]	West Imperial	La Cienega SB to WB Imperial	0.03%
Construction Employee Lot[5/]	South Main	La Cienega SB to WB Imperial to SB Main	0.1%
Construction Employee Lot[5/]	South Douglas/Nash[4/]	La Cienega SB to WB Imperial to SB Nash	1%
Construction Employee Lot[5/]	North Aviation	La Cienega SB to WB 111th to NB Aviation	1%
Construction Employee Lot[5/]	South Aviation	La Cienega SB to WB Imperial to SB Aviation	2%
Construction Employee Lot[5/]	East Lennox	La Cienega SB to EB Lennox	0.1%
Shuttles Entering the Construction Sites			
Construction Employee Lot[5/]	TBIT Renovation Construction Site[6/]	La Cienega SB to Imperial WB to Pershing NB	33%
Construction Employee Lot[5/]	In-Line Baggage Construction Site[6/]	La Cienega SB to 111th WB to Aviation NB to Century WB	67%
Shuttles Exiting the Construction Sites			
TBIT Renovation Construction Site[6/]	Construction Employee Lot[5/]	Pershing SB to Imperial EB to Aviation NB to 104th EB to La Cienega SB	33%
In-Line Baggage Construction Site[6/]	Construction Employee Lot[5/]	Century EB to La Cienega SB	67%
Transfer Trucks Entering the Construction Site			
Construction Staging[7/]	In-Line Baggage Construction Site[6/]	111th WB to Aviation NB to Century WB	100%
Transfer Trucks Exiting the Construction Site			
In-Line Baggage Construction Site[6/]	Construction Staging[7/]	Century EB to Aviation SB to 111th EB	100%
Delivery Trucks Entering the Construction Staging Areas			
I-405 South	In-Line Baggage Construction Staging[7/]	I-405 NB to Imperial WB (via Int. 9 ramp) to Aviation NB to 111th EB	22%
I-405 North	In-Line Baggage Construction Staging[7/]	I-405 SB to La Cienega SB (via Int. 12 ramp) to 111th WB	20%
I-105 East	In-Line Baggage Construction Staging[7/]	I-105 WB to Imperial WB (via Int. 7 ramp) to Aviation NB to 111th EB	30%
I-405 South	TBIT Construction Staging[7/]	I-405 NB to I-105 WB to Imperial to Pershing NB	9%
I-405 North	TBIT Construction Staging[7/]	I-405 SB to I-105 WB to Imperial WB to Pershing NB	8%
I-105 East	TBIT Construction Staging[7/]	I-105 WB to Imperial WB to Pershing NB	12%
Delivery Trucks Exiting the Construction Staging Areas			
In-Line Baggage Construction Staging[7/]	I-405 South	111th EB to La Cienega SB to I-405 SB (via int. 18 ramp)	22%
In-Line Baggage Construction Staging[7/]	I-405 North	111th EB to La Cienega NB to Century EB to I-405 NB (via Int. 19 ramp)	20%
In-Line Baggage Construction Staging[7/]	I-105 East	111th WB to Aviaiton SB to Imperial EB to I-105 EB (via Int. 7 ramp)	30%
TBIT Construction Staging[7/]	I-405 South	Pershing SB to Imperial EB to I-105 EB to I-405 SB	9%
TBIT Construction Staging[7/]	I-405 North	Pershing SB to Imperial EB to I-105 EB to I-405 NB	8%
TBIT Construction Staging[7/]	I-105 East	Pershing SB to Imperial EB to I-105 EB	12%

1/ Construction approach routes provided by LAWA Ground Transportation Planning Section.
2/ The percentage of trips were obtained from the estimated 2005 Regional Transportation Plan background population of the LAX Master Plan Supplement to the Draft EIR (Ta
3/ Several roadways were combined with North Sepulveda Boulevard including Lincoln Boulevard, La Tijera Boulevard, and Manchester Boulevard.
4/ Douglas Street and Nash Street are a one-way pair south of Imperial Highway.
5/ The construction employee lot is located along La Cienega Boulevard immediately north of the public parking Lot B.
6/ The TBIT Renovation construction site access is located off of World Way West east of Pershing Drive and the In-line Baggage construction site access is located off of Cen Boulevard west of Sepulveda Boulevard.
7/ The construction staging area for the TBIT Renovation construction project is located south of World Way West east of Pershing Drive and the In-Line Baggage construction area is located in the northeast quadrant of Imperial Highway and Aviation with the truck access off of 111th Street.

Source: LAWA Staff and Ricondo & Associates, Inc.
Prepared by: Ricondo & Associates, Inc.

Table J-2

LAX South Airfield EIR -- Project-Related Construction Vehicle Routes

From	To	Route [1/]	Percentage of Trips [2/]
Employees Entering the Study Area			
I-405 South	Construction Employee Lot [5/]	I-405 NB to Century WB to La Cienega SB	23%
I-405 North	Construction Employee Lot [5/]	I-405 SB to La Cienega SB	21%
I-105 East	Construction Employee Lot [5/]	I-105 WB to Imperial WB to Aviation NB to 104th EB to La Cienega SB	32%
North Sepulveda [3/]	Construction Employee Lot [5/]	North Sepulveda to EB Century to SB La Cienega	6%
South Sepulveda	Construction Employee Lot [5/]	South Sepulveda to EB Imperial to NB Aviation to EB 104th to SB La Cienega	5%
East Century	Construction Employee Lot [5/]	East Century to SB La Cienega	3%
North La Cienega	Construction Employee Lot [5/]	North La Cienega SB	1%
South La Cienega	Construction Employee Lot [5/]	South La Cienega to WB Imperial to NB Aviation to EB 104th to SB La Cienega	0.1%
East Imperial	Construction Employee Lot [5/]	East Imperial to NB Aviation to EB 104th to SB La Cienega	5%
West Imperial	Construction Employee Lot [5/]	West Imperial to NB Aviation to EB 104th to SB La Cienega	0.03%
South Main	Construction Employee Lot [5/]	South Main to EB Imperial to NB Aviation to EB 104th to SB La Cienega	0.1%
South Douglas/Nash [4/]	Construction Employee Lot [5/]	South Douglas to EB Imperial to NB Aviation to EB 104th to SB La Cienega	1%
North Aviation	Construction Employee Lot [5/]	North Aviation to EB Century to SB La Cienega	1%
South Aviation	Construction Employee Lot [5/]	South Aviation to EB 104th to SB La Cienega	2%
East Lennox	Construction Employee Lot [5/]	East Lennox to SB La Cienega to WB 111th to NB Aviation to EB 104th to SB La Cienega	0.1%
Employees Exiting the Study Area			
Construction Employee Lot [5/]	I-405 South	La Cienega SB to I-405 SB Ramp	23%
Construction Employee Lot [5/]	I-405 North	La Cienega SB to Imperial EB to I-405 NB Ramp	21%
Construction Employee Lot [5/]	I-105 East	La Cienega SB to Imperial WB to I-105 EB Ramp	32%
Construction Employee Lot [5/]	North Sepulveda [3/]	La Cienega SB to WB 111th to NB Aviation to WB Century to NB Sepulveda	6%
Construction Employee Lot [5/]	South Sepulveda	La Cienega SB to WB Imperial to SB Sepulveda	5%
Construction Employee Lot [5/]	East Century	La Cienega SB to WB 111th to NB Aviation to EB Century	3%
Construction Employee Lot [5/]	North La Cienega	La Cienega SB to WB 111th to NB Aviation to EB Century to NB La Cienega	1%
Construction Employee Lot [5/]	South La Cienega	La Cienega SB	0.1%
Construction Employee Lot [5/]	East Imperial	La Cienega SB to EB Imperial	5%
Construction Employee Lot [5/]	West Imperial	La Cienega SB to WB Imperial	0.03%
Construction Employee Lot [5/]	South Main	La Cienega SB to WB Imperial to SB Main	0.1%
Construction Employee Lot [5/]	South Douglas/Nash [4/]	La Cienega SB to WB Imperial to SB Nash	1%
Construction Employee Lot [5/]	North Aviation	La Cienega SB to WB 111th to NB Aviation	1%
Construction Employee Lot [5/]	South Aviation	La Cienega SB to WB Imperial to SB Aviation	2%
Construction Employee Lot [5/]	East Lennox	La Cienega SB to EB Lennox	0.1%
Shuttles Entering the Construction Site			
Construction Employee Lot [5/]	Construction Site	La Cienega SB to Imperial WB to NB Pershing	100%
Shuttles Exiting the Construction Site			
Construction Site	Construction Employee Lot [5/]	Pershing SB to Imperial EB to Aviation NB to 104th EB to La Cienega SB	100%
Deliveries Entering the Construction Site			
I-405 South	Construction Site	I-405 NB to I-105 WB to Imperial to NB Pershing	30%
I-405 North	Construction Site	I-405 SB to I-105 WB to Imperial WB to NB	28%
I-105 East	Construction Site	I-105 WB to Imperial WB to NB Pershing	42%
Deliveries Exiting the Construction Site			
Construction Site	I-405 South	Pershing SB to Imperial EB to I-105 EB to I-405 SB	30%
Construction Site	I-405 North	Pershing SB to Imperial EB to I-105 EB to I-405 NB	28%
Construction Site	I-105 East	Pershing SB to Imperial EB to I-105 EB	42%

1/ Construction approach routes provided by LAWA Ground Transportation Planning Section.
2/ The percentage of trips were obtained from the estimated 2005 Regional Transportation Plan background population of the LAX Master Plan Supplement to the Draft EIR (Table S1).
3/ Several roadways were combined with North Sepulveda Boulevard including Lincoln Boulevard, La Tijera Boulevard, and Manchester Boulevard.
4/ Douglas Street and Nash Street are a one-way pair south of Imperial Highway.
5/ The construction employee lot is located along La Cienega Boulevard immediately north of the public parking Lot B.

Source: LAWA Staff and Ricondo & Associates, Inc.
Prepared by: Ricondo & Associates, Inc.

Appendix K Air Quality Analyses

This appendix provides additional data used to calculate emissions generated by construction equipment and airport-related sources.

K.1 Construction Emissions

This section provides additional data used to calculate emissions generated by off-road, on-road and on-site construction equipment and vehicles.

HNTB developed the construction schedule that was used to estimate construction equipment emissions for the South Airfield Improvement Project. **Exhibit K-1** illustrates the months during which each work crew is scheduled to work. **Table K-1** presents the number of pieces of each equipment type per crew, as well as the maximum daily and monthly hours assumed for each piece of equipment.

Off-road construction equipment emissions are a function of engine horsepower, load factor, operating time, and fuel type. All off-road construction equipment was assumed to use diesel fuel. **Table K-2** shows vehicle specifications and CARB OFFROAD emission factors for off-road construction equipment.

On-road construction equipment specifications are presented in **Table K-3**. As shown, on-road vehicles use either diesel fuel or gasoline. The vehicle weight is used to relate each vehicle type to a CARB vehicle class, which is then used, along with vehicle speed and appropriate emission factors, to estimate total vehicle emissions. On-road construction equipment emission factors, generated from EMFAC2002, Version 2.2, are depicted in **Table K-4**.

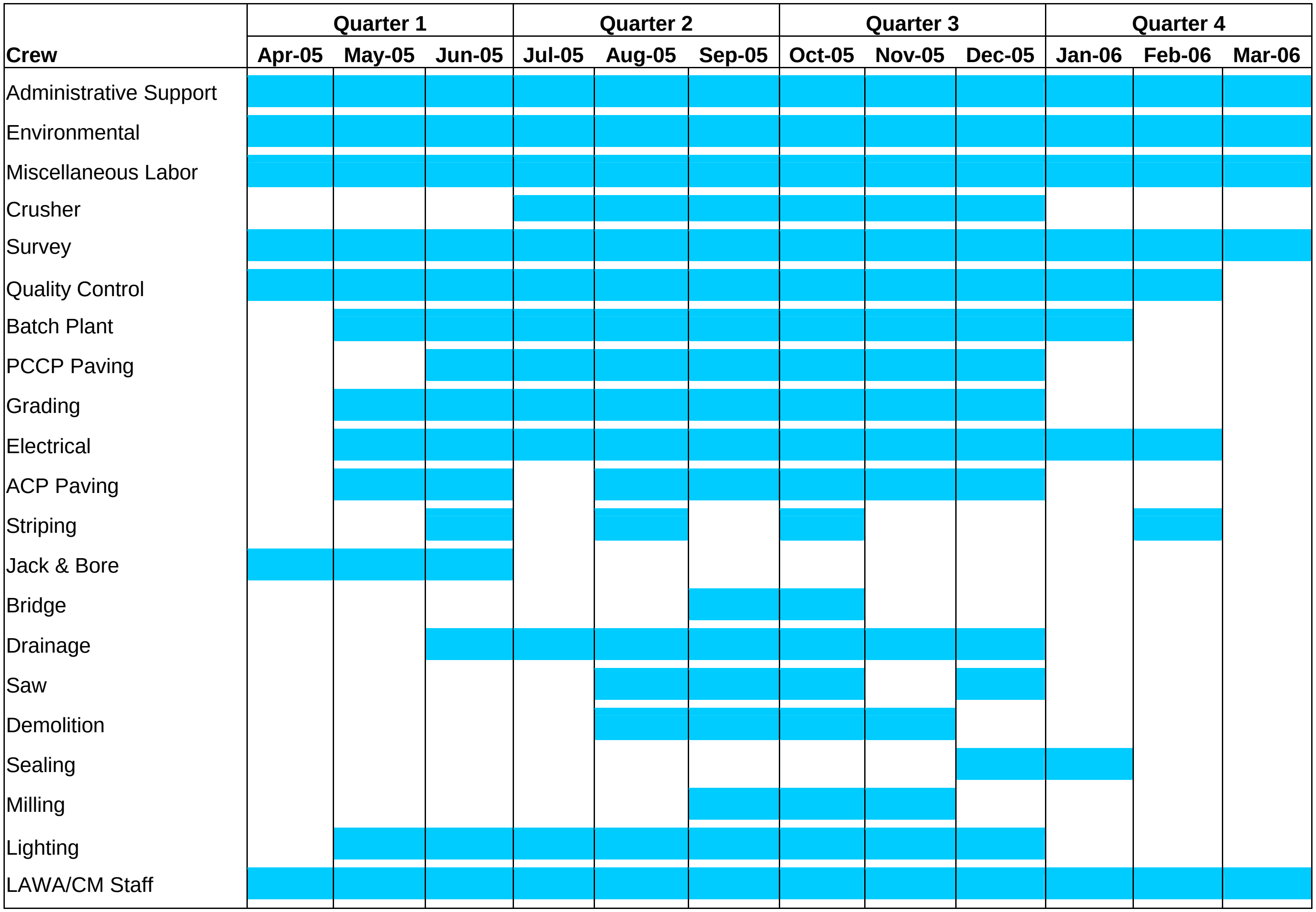
On-road off-site construction equipment/vehicle specifications are presented in **Table K-5**. HNTB developed estimates of trips per day, miles per trip, and days per year for each vehicle type. On-road off-site vehicles were assumed to use the same emission factors as on-road on-site vehicles, as shown in Table K-4.

Emissions of $PM_{2.5}$ for off-road construction equipment, generators, fugitive dust from on- and off-road vehicles, fugitive dust from wind erosion and rock crushing, as well as $PM_{2.5}$ emissions from concrete batching and asphalt paving and striping, were estimated using PM10-PM2.5 scalars from the CARB-approved California Emission Inventory and Reporting System (CEIDARS) PM size speciation profile database. The PM_{10}-$PM_{2.5}$ scalar for each PM profile was multiplied by the total corresponding PM_{10} emissions for each emissions source. For each emissions source, **Table K-6** presents the corresponding CEIDARS PM profile and the PM_{10}-$PM_{2.5}$ scalar.

Peak daily, quarterly, and annual construction emissions are presented in Table 4.3-10. A detailed annual, quarterly, and peak daily construction emissions summary is presented in **Table K-7**.

Exhibit K-1

Construction Schedule



Source: HNTB
Prepared by: Ricondo & Associates, Inc.

Table K-1 (1 of 3)

Construction Equipment Pieces, Crews, Maximum Daily Hours, and Monthly Hours

			Quarter 1						Quarter 2						Quarter 3						Quarter 4							
			Apr-05		May-05		Jun-05		July-05		Aug-05		Sep-05		Oct-05		Nov-05		Dec-05		Jan-06		Feb-06		Mar-06		Total	
Crew Name and Associated Equipment	**No. of Pieces**	**Max. Daily Hours**	**Crews**	**Monthly Hours**	**Crews**	**Monthly Hours**	**Crews**	**Monthly Hours**	**Crews**	**Monthly Hours**	**Crews**	**Monthly Hours**	**Crews**	**Monthly Hours**	**Crews**	**Monthly Hours**	**Crews**	**Monthly Hours**	**Crews**	**Monthly Hours**	**Crews**	**Monthly Hours**	**Crews**	**Monthly Hours**	**Crews**	**Monthly Hours**	**Crews**	**Monthly Hours**
Administrative Support			1		1		1		1		1		1		1		1		1		1		1		1		12	
Crew Van	1	6		0		150		150		150		150		150		150		150		150		150		150		150		1,650
SUV	1	4		50		100		100		100		100		100		100		100		100		100		100		100		1,150
Pickups	8	6		200		1,000		1,200		1,200		1,200		1,200		1,200		1,200		1,200		1,000		1,000		1,000		12,600
Fuel Truck	1	8		25		200		200		200		200		200		200		200		200		200		200		100		2,125
Mechanics Trucks w/ Crane	2	12		100		500		600		600		600		600		600		600		600		500		500		200		6,000
Vacuum Sweeper	2	18		100		500		900		900		900		900		900		900		900		500		500		900		8,800
Environmental			1		1		1		1		1		1		1		1		1		1		1				11	
Pickup	1	10		150		250		250		250		250		250		250		250		250		250		120				2,520
Miscellaneous Labor			1		3		1		1		1		1		1		1		1		2		2		2		17	
Pickup	1	8		50		600		200		100		100		100		100		100		100		400		400		400		2,650
CAT 428 Backhoe	1	12		250		900		300		150		150		150		150		150		150		600		600		600		4,150
Crusher									1		1		1		1		1		1								6	
Pickup	1	4								100		100		100		100		100		100								600
CAT 988 Loaders	2	16								100		800		800		800		800		100								3,400
Crusher	1	16								10		400		400		400		400										1,610
Survey			1		1		1		1		1		1		1		1		1		1		1		1		12	
Pickup	1	2		50		50		50		50		50		50		50		50		50		50		50		50		600
Crew Vans	3	4		300		300		300		300		300		300		300		300		300		200		100				3,000
Quality Control			1		1		1		1		1		1		1		1		1		1		1				11	
Pickups	6	10		200		300		1,500		1,500		1,500		1,500		1,500		1,000		600		600		300				10,500
Batch Plant					1		1		1		1		1		1		1		1		1						9	
Pickup	1	4				100		100		100		100		100		100		100		100		100						900
CAT 988 Loaders	2	10				250		500		500		500		500		500		500		500		250						4,000
PCCP Paving							1		1		1		1		1		1		1								7	
Gomaco GP-4000 Paver	1	12						144		144		144		300		300		144		144								1,320
Gomaco GHP-2800	1	2						8		8		8		50		50		8		8								140
Gomaco RTP-500 Belt Placers	2	10						240		240		240		500		500		240		240								2,200
Gomaco TC-400 Cure /Texture Rig	1	4						48		48		48		100		100		48		48								440
Compressors (Gang Drills)	3	10						50		50		50		750		750		50		50								1,750
Pickups	3	6						450		450		450		450		450		450		450								3,150
1 Ton Flat Beds	2	6						300		300		300		300		300		300		300								2,100
Water Truck	1	2						24		24		24		50		50		24		24								220
Walk Behind Saws	2	4						96		96		96		200		200		96		96								880
Tri-axle Dump Trucks	12	11						1,584		1,584		1,584		3,300		3,300		1,584		1,584								14,520

Table K-1 (2 of 3)

Construction Equipment Pieces, Crews, Maximum Daily Hours, and Monthly Hours

			Quarter 1						Quarter 2						Quarter 3						Quarter 4							
			Apr-05		May-05		Jun-05		July-05		Aug-05		Sep-05		Oct-05		Nov-05		Dec-05		Jan-06		Feb-06		Mar-06		Total	
Crew Name and Associated Equipment	No. of Pieces	Max. Daily Hours	Crews	Monthly Hours	Crews	Monthly Hours	Crews	Monthly Hours	Crews	Monthly Hours	Crews	Monthly Hours	Crews	Monthly Hours	Crews	Monthly Hours	Crews	Monthly Hours	Crews	Monthly Hours	Crews	Monthly Hours	Crews	Monthly Hours	Crews	Monthly Hours	Crews	Monthly Hours
Grading					1		1		1		3		4		5		5		2								22	
CAT 14H Motor Grader	1	16				128		128		128		1,200		1,600		2,000		2,000		800								7,984
CAT 615C Scraper	1	8				64		64		64		600		800		1,000		1,000		400								3,992
CAT RM350B Reclaimer	1	16				80		80		80		400		400		400		400		120								1,960
CAT CS 583E Compactors	2	18				280		280		280		2,700		3,600		4,500		4,500		1,800								17,940
Water Truck	1	4				32		32		32		300		400		500		500		200								1,996
Pickup	1	6				150		150		150		450		600		750		750		300								3,300
Tri-axle Dump Trucks	6	20				960		960				9,000		12,000		15,000		15,000		6,000								58,920
Electrical					3		2		1		1		5		6		3		1		1		1				24	
CAT 428 Backhoe	1	10				750		500		50		250		1,250		1,500		750		750		100		100				6,000
Ditch Witch RT 55 Trencher	1	10				750		500		50		250		1,250		1,500		750		750		100		100				6,000
Pickups	2	6				900		600		300		300		1,500		1,800		900		900		900		900				9,000
ACP Paving					1		1				1		1		1		1		1								7	
Barber-Greene BG260C Paver	1	18				36		90				90		90		450		450		450								1,656
CAT CB 634D Rollers	2	18				72		180				180		180		900		900		900								3,312
CAT PS 300 B Rubber Tire	1	18				36		90				90		90		450		450		450								1,656
CAT IT 14G Loader	1	2				4		10				10		10		50		50		50								184
Pickup	1	8				16		40				40		40		200		200		200								736
Flat Bed Truck	1	2				4		10				10		10		50		50		50								184
Striping							1				1				1								1				4	
Paint Truck	1	12																						144				144
Flat Bed Truck	1	4						16				16				16								48				96
Parking Lot Paint Machines	3	12						24				24				24								432				504
Pickup	1	4						8				8				8								48				72
Jack & Bore			1		2		2																				5	
Jack & Bore Machine	1	16		400		800		800																				2,000
CAT 325C L Excavator	1	8		200		400		400																				1,000
CAT 966 Loader	1	8		200		400		400																				1,000
Flat Bed Truck	1	4		100		200		200																				500
Pickup	1	4		100		200		200																				500
Tri-axle Dump Truck	1	20		500		1,000		1,000																				2,500
Bridge													1		1												2	
Pickups	3	4												300		300												600
Air Compressor	1	4												100		100												200
Walk Behind Saw	1	8												200		200												400

Table K-1 (3 of 3)

Construction Equipment Pieces, Crews, Maximum Daily Hours, and Monthly Hours

			Quarter 1						Quarter 2						Quarter 3						Quarter 4							
			Apr-05		May-05		Jun-05		July-05		Aug-05		Sep-05		Oct-05		Nov-05		Dec-05		Jan-06		Feb-06		Mar-06		Total	
Crew Name and Associated Equipment	**No. of Pieces**	**Max. Daily Hours**	**Crews**	**Monthly Hours**	**Crews**	**Monthly Hours**	**Crews**	**Monthly Hours**	**Crews**	**Monthly Hours**	**Crews**	**Monthly Hours**	**Crews**	**Monthly Hours**	**Crews**	**Monthly Hours**	**Crews**	**Monthly Hours**	**Crews**	**Monthly Hours**	**Crews**	**Monthly Hours**	**Crews**	**Monthly Hours**	**Crews**	**Monthly Hours**	**Crews**	**Monthly Hours**
Drainage							1		1		3		3		2		1		1								12	
CAT 330C L Excavator	1	18						112		450		1,350		1,350		900		112		112								4,386
CAT 966 Loader	1	12						84		300		900		900		600		84		84								2,952
CAT CS 531D Compactor	1	12						84		300		900		900		600		84		84								2,952
Flat Bed Truck	1	4						28		100		300		300		200		28		28								984
Pickup	1	4						100		100		300		300		200		100		100								1,200
Saw											3		2		1				1								7	
1 Ton Trucks w/ Lift	2	4										600		400		200				200								1,400
Water Truck	1	2										150		100		50				50								350
Walk Behind Saws	4	18										5,400		3,600		1,800				1,800								12,600
Demolition											2		2		1		1										6	
CAT 988 Loaders	2	18										1,800		1,800		900		900										5,400
Air Compressor	1	12										600		600		300		300										1,800
Pickup	1	6										300		300		150		150										900
Truck/Tractor Low Boys	8	20										8,000		8,000		4,000		4,000										24,000
Sealing																			1		1						2	
Air Compressor	1	4																		100		100						200
Walk Behind Saws	3	18																		1,350		1,350						2,700
Pickups	2	4																		200		200						400
Milling													1		1		1										3	
CAT PM 565B Milling Machine	1	16												144		400		336										880
Water Truck	1	8												72		200		168										440
Pickup	1	6												54		150		126										330
Tri-axle Dump Trucks	8	20												1,440		4,000		3,360										8,800
Lighting - Night Shift					1		1		1		1		1		1		1		1								8	
Light Plants	16	8				3,200		3,200		3,200		3,200		3,200		3,200		3,200		3,200								25,600
LAWA/CM Staff			1		1		1		1		1		1		1		1		1		1		1		1		12	
Pickups for LAWA/CM	8	4		800		800		800		800		800		800		800		800		800		800		800		800		9,600
Pickups for Inspectors	16	12		3,600		4,800		4,800		4,800		4,800		4,800		4,800		4,800		4,800		4,800		4,800		3,000		54,600
Totals			**7**	**7,375**	**17**	**21,262**	**17**	**25,264**	**13**	**20,438**	**24**	**55,662**	**29**	**66,880**	**29**	**68,548**	**22**	**57,042**	**17**	**35,372**	**10**	**13,250**	**9**	**11,392**	**5**	**7,300**	**199**	**389,785**

Source: HNTB

Prepared by: Ricondo & Associates, Inc.

Table K-2

Off-Road Construction Equipment Specifications and Emission Factors

		Load	Usage	2005 CARB OFFROAD Emission Factors (lb/hp-hr)				
Off-Road Equipment	**Horsepower**	**Factor**	**Factor**	**CO**	**VOC**	**NO_x**	**SO_x**	**PM_{10}**
Air Compressor	85	0.53	0.83	0.00723	0.00073	0.01182	0.00001	0.00072
Barber-Greene BG260C Paver	174	0.53	0.83	0.00218	0.00043	0.01030	0.00001	0.00028
CAT 14H Motor Grader	220	0.575	0.83	0.00219	0.00044	0.01032	0.00001	0.00028
CAT 325C L Excavator	188	0.58	0.83	0.00632	0.00055	0.01045	0.00001	0.00045
CAT 330C L Excavator	247	0.58	0.83	0.00215	0.00041	0.01022	0.00001	0.00027
CAT 428 Backhoe	83	0.575	0.83	0.00723	0.00073	0.01182	0.00001	0.00072
CAT 615C Scraper	265	0.66	0.83	0.00216	0.00040	0.00921	0.00001	0.00028
CAT 966 Loader	235	0.465	0.83	0.00218	0.00044	0.01031	0.00001	0.00028
CAT 988 Loaders	475	0.465	0.83	0.00215	0.00038	0.00916	0.00001	0.00028
CAT CB 634D Rollers	145	0.575	0.83	0.00622	0.00051	0.01036	0.00001	0.00043
CAT CS 531D Compactor	145	0.575	0.83	0.00622	0.00051	0.01036	0.00001	0.00043
CAT CS 583E Compactors	150	0.575	0.83	0.00622	0.00051	0.01036	0.00001	0.00043
CAT IT 14G Loader	90	0.575	0.83	0.00219	0.00044	0.01032	0.00001	0.00028
CAT PM 565B Milling Machine	625	0.78	0.83	0.00222	0.00051	0.01007	0.00001	0.00030
CAT PS 300 B Rubber Tire	99	0.575	0.83	0.00723	0.00073	0.01182	0.00001	0.00072
CAT RM350B Reclaimer	500	0.78	0.83	0.00222	0.00051	0.01007	0.00001	0.00030
Compressors (Gang Drills)	85	0.53	0.83	0.00723	0.00073	0.01182	0.00001	0.00072
Crusher	450	0.66	0.83	0.00216	0.00040	0.00921	0.00001	0.00028
Ditch Witch RT 55 Trencher	60	0.575	0.83	0.00723	0.00073	0.01182	0.00001	0.00072
Gomaco GHP-2800	335	0.575	0.83	0.00214	0.00038	0.00915	0.00001	0.00028
Gomaco GP-4000 Paver	450	0.53	0.83	0.00214	0.00038	0.00915	0.00001	0.00028
Gomaco RTP-500 Belt Placers	200	0.53	0.83	0.00218	0.00043	0.01030	0.00001	0.00028
Gomaco TC-400 Cure /Texture Rig	70	0.575	0.83	0.00723	0.00073	0.01182	0.00001	0.00072
Jack & Bore Machine	45	0.45	0.83	0.00864	0.00127	0.01155	0.00001	0.00103
Light Plants	15	0.9	0.83	0.00864	0.00127	0.01155	0.00001	0.00103
Mechanics Trucks w/ Crane	200	0.43	0.83	0.00218	0.00043	0.01030	0.00001	0.00028
Truck/Tractor Low Boys	400	0.59	0.83	0.00222	0.00048	0.00938	0.00001	0.00030
Vacuum Sweeper	170	0.58	0.83	0.00632	0.00055	0.01045	0.00001	0.00045

Notes: PM_{10} emission factors include only combustion PM_{10}.
All off-road construction equipment is assumed to use diesel fuel.

Sources: Equipment types and horsepower: HNTB. Load factors: SCAQMD CEQA Air Quality Handbook. Usage factors: Final LAX Master Plan EIR. Emission factors: CARB OFFROAD Model.

Prepared by: Ricondo & Associates, Inc.

Table K-3

On-Road On-Site Construction Equipment Specifications

Vehicle Type	Substitute Vehicle	Fuel Type	Weight (lbs)	CARB Class	Speed (mph)
1 Ton Flat Beds	Flatbed truck, onsite	Diesel	33,001-60,000	HHDT	10
1 Ton Trucks w/ Lift	Light-duty truck	Gasoline	3,751-5,750	LDT2	15
Crew Van	Pickup truck, onsite	Gasoline	5,751-8,500	MDV	15
Flat Bed Truck	Flatbed truck, onsite	Diesel	3,3001-60,000	HHDT	10
Fuel Truck	Haul truck, onsite	Diesel	33,001-60,000	HHDT	10
Paint Truck	Haul truck, onsite	Diesel	33,001-60,000	HHDT	10
Pickup	Pickup truck, onsite	Gasoline	5,751-8,500	MDV	15
SUV	Pickup truck, onsite	Gasoline	5,751-8,500	MDV	15
Tri-axle Dump Truck	Haul truck, onsite	Diesel	33,001-60,000	HHDT	10
Water Truck	Watering truck	Diesel	14,001-33,000	MHDT	5

Sources: Vehicle types: HNTB. Substitute vehicles, weight, CARB class and speed: Final LAX Master Plan EIR.
Prepared by: Ricondo & Associates, Inc.

Table K-4

On-Road Construction Equipment Emission Factors

	CO		NO_x		SO_x	
Vehicle Type	**Run (g/mi)**	**Start (g/start)**	**Run (g/mi)**	**Start (g/start)**	**Run (g/mi)**	**Start (g/start)**
Passenger car	6.339	16.444	0.552	0.651	0.006	0.002
Light-duty truck	6.978	17.178	0.650	0.953	0.004	0.003
Onsite pickup truck	8.746	22.820	1.291	1.207	0.010	0.004
Watering truck	7.542	-	16.557	-	0.180	-
Haul truck, onsite	8.925	-	19.817	-	0.180	-
Flatbed truck, onsite	8.925	-	19.817	-	0.180	-
Haul truck, offsite	3.844	-	14.003	-	0.180	-
Flatbed truck, offsite	3.844	-	14.003	-	0.180	-

	VOC					
Vehicle Type	**Run (g/mi)**	**Start (g/start)**	**Soak (g/trip)**	**Rest (g/hr)**	**Evap (g/min)**	**Diurnal (g/hr)**
Passenger car	0.349	1.744	0.256	0.061	0.065	0.022
Light-duty truck	0.180	1.678	0.200	0.048	0.065	0.023
Onsite pickup truck	0.549	2.448	0.279	0.064	0.082	0.022
Watering truck	0.892	-	-	-	-	-
Haul truck, onsite	1.734	-	-	-	-	-
Flatbed truck, onsite	1.734	-	-	-	-	-
Haul truck, offsite	0.957	-	-	-	-	-
Flatbed truck, offsite	0.957	-	-	-	-	-

	PM_{10}				$PM_{2.5}$	
Vehicle Type	**Run (g/mi)**	**Tire (g/mi)**	**Brake (g/mi)**	**Start (g/start)**	**Run (g/mi)**	**Start (g/start)**
Passenger car	0.024	0.008	0.013	0.015	0.024	0.014
Light-duty truck	0.017	0.008	0.013	0.023	0.016	0.022
Onsite pickup truck	0.047	0.008	0.013	0.027	0.047	0.026
Watering truck	0.911	0.012	0.013	-	0.826	-
Haul truck, onsite	0.847	0.036	0.013	-	0.726	-
Flatbed truck, onsite	0.847	0.036	0.013	-	0.726	-
Haul truck, offsite	0.467	0.036	0.013	-	0.401	-
Flatbed truck, offsite	0.467	0.036	0.013	-	0.401	-

Notes: Start, soak, rest, evaporative and diurnal emission factors apply only to gasoline-powered vehicles.
g/mi = grams per mile.

Source: EMFAC2002 Version 2.2.
Prepared by: Ricondo & Associates, Inc.

Table K-5

On-Road Off-Site Construction Equipment Specifications

Vehicle Type	Substitute Vehicle	Fuel Type	Trips/ Day	Miles/ Trip	VMT (miles/vehicle-day)	Days/ Year
Contractor Personnel	Passenger car	Gasoline	200	50	10,000	312
LAWA / CM / Inspectors	Light-duty truck	Gasoline	24	50	1,200	312
Course Aggregate	Haul truck, offsite	Diesel	105	80	8,400	75
Fine Aggregate	Haul truck, offsite	Diesel	70	52	3,640	75
Cement	Haul truck, offsite	Diesel	35	160	5,600	75
Soil Disposal	Haul truck, offsite	Diesel	300	50	15,000	62
Misc. Deliveries	Flatbed truck, offsite	Diesel	30	50	1,500	312
Base Course	Haul truck, offsite	Diesel	25	80	2,000	102
Bus from parking to staging	Flatbed truck, offsite	Diesel	15	10	150	312

Sources: Vehicle types: HNTB. Substitute vehicles: Final LAX Master Plan EIR. Trips/day, miles/trip, and days/year: HNTB. VMT = trips/day x miles/trip.

Prepared by: Ricondo & Associates, Inc.

Table K-6

PM Profiles and Scalars for $PM_{2.5}$ Emissions Estimates

Source of Emissions	PM Profile Name	PM_{10}-$PM_{2.5}$ Scalar
Off-Road Equipment	STAT. I.C. ENGINE-DIESEL	0.976
Generators	STAT. I.C. ENGINE-DIST/DIESEL	0.991
Fugitive Dust – Off-Road	CONSTRUCTION DUST	0.208
Fugitive Dust – On-Road	CONSTRUCTION DUST	0.208
Fugitive Dust – Off-Site	PAVED ROAD DUST (1997 AND AFTER)	0.169
Fugitive Dust – Wind Erosion	WINDBLOWN DUST – UNPAVED RD/AREA	0.212
Fugitive Dust – Rock Crushing	ROCK CRUSHERS	0.300
Concrete Batching	CEMENT PROD./CONCRETE BATCHING	0.674
Asphalt Paving and Striping	COATING MATERIAL EVAPORATION	0.964

Source: CARB-approved California Emission Inventory and Reporting System (CEIDARS) PM size speciation profile database.

Prepared by: Ricondo & Associates, Inc.

Table K-7 (1 of 2)

Annual, Quarterly and Peak Day Quarterly Construction Emissions Summary

	Annual Emissions (tons/year)					
Source	**CO**	**VOC**	**NO_x**	**SO_x**	**PM_{10}**	**$PM_{2.5}$**
Off-Road Equipment	25.86	6.14	58.29	0.11	0.42	0.41
On-Road Equipment	32.99	3.59	23.06	0.20	0.97	0.84
On-Road/Off-Site Equipment	37.30	4.41	48.04	0.61	1.62	1.40
Generators	14.37	3.32	52.75	0.07	0.50	0.50
Fugitive Dust - Off-Road	0.00	0.00	0.00	0.00	10.41	2.16
Fugitive Dust - On-Road	0.00	0.00	0.00	0.00	10.80	2.25
Fugitive Dust - Off-Site	0.00	0.00	0.00	0.00	1.04	0.17
Fugitive Dust - Wind Erosion	0.00	0.00	0.00	0.00	0.29	0.06
Fugitive Dust - Rock Crushing	0.00	0.00	0.00	0.00	0.77	0.23
Concrete Batching	0.00	0.00	0.00	0.00	1.92	1.29
Asphalt Paving and Striping	0.00	39.50	0.00	0.00	1.92	0.00
Total	**110.51**	**56.96**	**182.14**	**1.00**	**28.72**	**9.32**

	Quarter 1 Emissions (tons/Quarter)						Quarter 2 Emissions (tons/Quarter)					
Source	**CO**	**VOC**	**NO_x**	**SO_x**	**PM_{10}**	**$PM_{2.5}$**	**CO**	**VOC**	**NO_x**	**SO_x**	**PM_{10}**	**$PM_{2.5}$**
Off-Road Equipment	2.44	0.32	4.11	0.01	0.04	0.04	11.08	3.14	28.10	0.06	0.20	0.19
On-Road Equipment	5.83	0.54	2.23	0.02	0.09	0.08	10.19	1.14	7.77	0.07	0.33	0.28
On-Road/Off-Site Equipment	5.97	0.74	8.52	0.11	0.29	0.25	11.92	1.25	12.27	0.16	0.42	0.36
Generators	3.59	0.83	13.19	0.02	0.13	0.12	3.59	0.83	13.19	0.02	0.13	0.12
Fugitive Dust - Off-Road	0.00	0.00	0.00	0.00	0.66	0.14	0.00	0.00	0.00	0.00	4.36	0.90
Fugitive Dust - On-Road	0.00	0.00	0.00	0.00	0.86	0.18	0.00	0.00	0.00	0.00	3.67	0.76
Fugitive Dust - Off-Site	0.00	0.00	0.00	0.00	0.16	0.03	0.00	0.00	0.00	0.00	0.33	0.06
Fugitive Dust - Wind Erosion	0.00	0.00	0.00	0.00	0.09	0.02	0.00	0.00	0.00	0.00	0.10	0.02
Fugitive Dust - Rock Crushing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.39	0.12
Concrete Batching	0.00	0.00	0.00	0.00	0.37	0.25	0.00	0.00	0.00	0.00	0.71	0.48
Asphalt Paving and Striping	0.00	0.00	0.00	0.00	0.00	0.00	0.00	13.17	0.00	0.00	0.00	0.00
Total	**17.83**	**2.43**	**28.04**	**0.15**	**2.69**	**1.10**	**36.78**	**19.52**	**61.33**	**0.30**	**10.60**	**3.30**

	Quarter 3 Emissions (tons/Quarter)						Quarter 4 Emissions (tons/Quarter)					
Source	**CO**	**VOC**	**NO_x**	**SO_x**	**PM_{10}**	**$PM_{2.5}$**	**CO**	**VOC**	**NO_x**	**SO_x**	**PM_{10}**	**$PM_{2.5}$**
Off-Road Equipment	10.95	2.36	24.54	0.05	0.18	0.17	1.38	0.31	1.54	0.00	0.01	0.01
On-Road Equipment	12.26	1.54	12.34	0.11	0.52	0.45	4.71	0.37	0.72	0.01	0.03	0.03
On-Road/Off-Site Equipment	16.37	2.16	24.91	0.32	0.84	0.72	3.04	0.26	2.33	0.03	0.08	0.07
Generators	3.59	0.83	13.19	0.02	0.13	0.12	3.59	0.83	13.19	0.02	0.13	0.12
Fugitive Dust - Off-Road	0.00	0.00	0.00	0.00	5.11	1.06	0.00	0.00	0.00	0.00	0.29	0.06
Fugitive Dust - On-Road	0.00	0.00	0.00	0.00	6.15	1.28	0.00	0.00	0.00	0.00	0.13	0.03
Fugitive Dust - Off-Site	0.00	0.00	0.00	0.00	0.47	0.08	0.00	0.00	0.00	0.00	0.07	0.01
Fugitive Dust - Wind Erosion	0.00	0.00	0.00	0.00	0.09	0.02	0.00	0.00	0.00	0.00	0.00	0.00
Fugitive Dust - Rock Crushing	0.00	0.00	0.00	0.00	0.38	0.12	0.00	0.00	0.00	0.00	0.00	0.00
Concrete Batching	0.00	0.00	0.00	0.00	0.71	0.48	0.00	0.00	0.00	0.00	0.14	0.09
Asphalt Paving and Striping	0.00	13.17	0.00	0.00	0.00	0.00	0.00	13.17	0.00	0.00	0.00	0.00
Total	**43.17**	**20.06**	**74.98**	**0.49**	**14.55**	**4.50**	**12.73**	**14.94**	**17.78**	**0.06**	**0.87**	**0.42**

Notes: PM_{10} emissions represent combustion PM_{10} only, except for "Fugitive Dust" and "Concrete Batching" sources, where it represents non-combustion PM_{10} only.
Due to rounding, total emissions may be slightly different than the sum of its components.

Source: Ricondo & Associates, Inc.
Prepared by: Ricondo & Associates, Inc.

Table K-7 (2 of 2)

Annual, Quarterly and Peak Day Quarterly Construction Emissions Summary

	Peak Day Quarter 1 Emissions (pounds/day)						Peak Day Quarter 2 Emissions (pounds/day)						Peak Day Quarter 3 Emissions (pounds/day)						Peak Day Quarter 4 Emissions (pounds/day)					
Source	**CO**	**VOC**	**NO_x**	**SO_x**	**PM_{10}**	**$PM_{2.5}$**	**CO**	**VOC**	**NO_x**	**SO_x**	**PM_{10}**	**$PM_{2.5}$**	**CO**	**VOC**	**NO_x**	**SO_x**	**PM_{10}**	**$PM_{2.5}$**	**CO**	**VOC**	**NO_x**	**SO_x**	**PM_{10}**	**$PM_{2.5}$**
Off-Road Equipment	231.24	27.09	316.29	0.52	2.48	2.42	501.16	127.93	1287.66	2.44	8.85	8.64	507.21	97.26	1067.56	1.90	7.42	7.24	44.32	20.11	80.06	0.29	0.71	0.69
On-Road Equipment	240.86	26.25	166.87	1.48	6.98	6.07	379.08	47.58	384.11	3.45	16.27	14.07	402.62	52.37	437.04	3.93	18.54	16.02	159.85	12.56	22.99	0.17	0.83	0.79
On-Road/Off-Site Equipment	405.58	58.26	711.56	9.09	23.87	20.60	460.00	38.89	301.59	3.80	10.36	9.10	593.70	79.36	918.87	11.74	30.92	26.73	134.87	15.23	167.19	2.12	5.62	4.87
Generators	95.78	22.16	351.69	0.48	3.34	3.31	95.78	22.16	351.69	0.48	3.34	3.31	95.78	22.16	351.69	0.48	3.34	3.31	95.78	22.16	351.69	0.48	3.34	3.31
Fugitive Dust - Off-Road	0.00	0.00	0.00	0.00	48.73	10.13	0.00	0.00	0.00	0.00	180.71	37.43	0.00	0.00	0.00	0.00	176.32	36.52	0.00	0.00	0.00	0.00	13.67	2.84
Fugitive Dust - On-Road	0.00	0.00	0.00	0.00	75.06	15.60	0.00	0.00	0.00	0.00	190.87	39.67	0.00	0.00	0.00	0.00	219.22	45.56	0.00	0.00	0.00	0.00	4.19	0.87
Fugitive Dust - Off-Site	0.00	0.00	0.00	0.00	12.02	2.03	0.00	0.00	0.00	0.00	12.23	2.06	0.00	0.00	0.00	0.00	16.58	2.80	0.00	0.00	0.00	0.00	4.12	0.70
Fugitive Dust - Wind Erosion	0.00	0.00	0.00	0.00	3.03	0.64	0.00	0.00	0.00	0.00	2.67	0.57	0.00	0.00	0.00	0.00	2.55	0.54	0.00	0.00	0.00	0.00	0.24	0.05
Fugitive Dust - Rock Crushing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	15.38	4.61	0.00	0.00	0.00	0.00	15.00	4.61	0.00	0.00	0.00	0.00	0.00	0.00
Concrete Batching	0.00	0.00	0.00	0.00	18.80	12.68	0.00	0.00	0.00	0.00	18.80	12.68	0.00	0.00	0.00	0.00	18.80	12.68	0.00	0.00	0.00	0.00	11.00	7.40
Asphalt Paving and Striping	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3640.61	0.00	0.00	0.00	0.00	0.00	3640.61	0.00	0.00	0.00	0.00	0.00	3640.61	0.00	0.00	0.00	0.00
Total	**973.46**	**133.76**	**1546.41**	**11.57**	**194.32**	**73.48**	**1436.01**	**3877.16**	**2325.05**	**10.16**	**458.88**	**132.14**	**1599.31**	**3891.75**	**2775.16**	**18.05**	**508.50**	**156.01**	**434.82**	**3710.67**	**621.93**	**3.06**	**43.69**	**21.51**

Notes: PM_{10} emissions represent combustion PM_{10} only, except for "Fugitive Dust" and "Concrete Batching" sources, where it represents non-combustion PM_{10} only.
Due to rounding, total emissions may be slightly different than the sum of its components.

Source: Ricondo & Associates, Inc.
Prepared by: Ricondo & Associates, Inc.

K.2 Operational Emissions

This section presents data that was used in support of the operational emissions calculations documented in Sections 4.3.3.5 and 4.3.6.1.2.

Tables K-8 and K-9 show time-in-mode values by aircraft type for Baseline 2003 and Project (2005) conditions, respectively. As outlined in the EPA *Procedures for Emissions Inventory Preparation, Volume IV*[1], the EDMS recognizes four aircraft modes that constitute a complete landing and takeoff (LTO) cycle: takeoff, climb out, approach, and taxi/idle. Time-in-mode is the time (in minutes) that an aircraft spends in a specific mode of operation.

The time-in-mode for takeoff is from the start of ground roll until the aircraft reaches 1,000 feet above ground level (AGL). The specific time is dependent on aircraft performance. The climb out time-in-mode is measured from 1,000 feet (AGL) to the mixing height, and varies depending on aircraft performance and mixing height. The approach time-in-mode is measured from the mixing height to the surface, and also varies depending on aircraft performance and mixing height.

The taxi/idle time-in-mode has three components: Landing roll time, taxi time, and queue time. Landing roll time is the time spent at idle power after touchdown and dependent on aircraft performance. The taxi and queue time is the time spent in taxi and queue between gates and runways. Of the four modes, the taxi/idle mode is the most variable due to its airport specific nature. Section 4.3.2.4.1 describes the methodology used to obtain aircraft time-in-mode values for this EIR.

Tables K-10 and K-11 present ground support equipment (GSE) and auxiliary power unit (APU) assignments and specifications for each aircraft type modeled in EDMS for Baseline 2003 and Project (2005) conditions, respectively. GSE consists of all emissions producing ground based vehicles and equipment used in support of civilian aircraft at a gate. GSE emissions are a function of operating time, engine horsepower, load factor, and fuel type. Fuel types include gasoline, diesel, compressed natural gas, and electric.

An APUs is typically an on-board generator, similar to a small jet engine, that provides electrical power to the aircraft while its engines are shut down and helps start the main engines. An APU does not provide thrust and its emissions are based on time of operation.

[1] U.S. Environmental Protection Agency. *Procedures for Emissions Inventory Preparation, Volume IV: Mobile Sources*, 1992.

Table K-8 (1 of 2)

Aircraft Time in Mode – Baseline 2003 Conditions

		Time-in-Mode (Minutes/LTO)			
EDMS Aircraft Type	**Aircraft Engine**	**Approach**	**Climb out**	**Takeoff**	**Taxi**
**Canadair RJ50	User-Created	3.48	0.23	0.82	22.03
**GAJ	User-Created	3.48	0.23	0.82	22.03
**GenAvProp Cargo	User-Created	3.48	0.23	0.82	22.03
A300B	CF6-80C2A5	2.61	0.63	1.12	30.19
A300-C4-200	CF6-50A	2.61	0.63	1.12	30.19
A310	CF6-80A3	2.66	0.44	1.02	30.32
A310-200F	CF6-80A3	2.66	0.44	1.02	30.32
A319	CFM56-5B6/P	2.74	0.49	0.92	26.79
A320	V2527-A5	2.79	0.53	0.99	26.57
A330	PW4168A	2.88	0.53	1.08	30.15
A340-200	CFM56-5B6/2P	2.71	0.83	1.60	30.50
A-7 CORSAIR II	TF41-A-2	2.27	0.31	1.19	26.81
ATR42	PW120	4.03	0.57	0.81	22.23
B727-200	JT8D-15	2.54	0.68	1.51	26.59
B737-200F	JT8D-17A	2.63	0.50	0.93	26.54
B737-300	CFM56-3-B1	2.59	0.41	0.89	26.57
B737-400	CFM56-3B-2	2.59	0.41	0.89	26.57
B737-500	CFM56-3C-1	2.65	0.47	1.01	26.58
B747-200	JT9D-7Q	2.42	0.92	1.35	30.24
B747-200F	CF6-50E2	2.42	0.92	1.35	30.24
B747-400	PW4056	2.36	0.85	1.35	30.31
B747-400F	CF6-80C2B1F	2.36	0.85	1.35	30.31
B747-SP	JT9D-7A	2.72	0.84	1.27	30.27
B757-200	PW2037	2.73	0.58	0.94	26.60
B757-200F	RB211-535E4	2.71	0.50	0.80	26.59
B767-200	CF6-80A2	2.62	0.67	1.20	30.12
B767-200ER	CF6-80A2	2.62	0.67	1.20	30.12
B767-300	CF6-80A2	2.62	0.67	1.20	30.12
B777-200	PW4077	3.32	0.76	1.17	31.65
BAE146-300	ALF502R-5	2.67	1.06	1.36	30.07
BH-1900	PT6A-67D	5.72	0.58	0.82	22.03
BH-1900C	PT6A-65B	5.72	0.58	0.82	22.03
Dash 7	PT6A-50	3.72	0.76	0.98	22.09
DC10-30	CF6-50C2	2.40	0.64	1.30	30.16
DC10-30F	CF6-50C2	2.40	0.64	1.30	30.16
DC8-70	CFM56-2C5	2.51	0.61	1.28	30.29
DC9-50	JT8D-17	2.48	0.61	0.99	30.12
EMB-110KQ1	PT6A-27	5.72	0.58	0.82	22.03
EMB-120	PW118	3.07	0.46	0.70	22.06
F-28-4000	RR SPEY-MK555	2.89	0.55	0.98	22.23
Fokker 70	TAY620-15	2.73	0.57	0.98	22.33
L-1011-500	RB211-524B4	2.51	0.59	1.34	26.78
MD-11	PW4460	2.38	0.58	1.52	30.25

Table K-8 (2 of 2)

Aircraft Time in Mode – Baseline 2003 Conditions

		Time-in-Mode (Minutes/LTO)			
EDMS Aircraft Type	**Aircraft Engine**	**Approach**	**Climb out**	**Takeoff**	**Taxi**
MD-11-11F	CF6-80C2D1F	2.38	0.63	1.36	30.31
MD-80	JT8D-217A	2.63	0.68	1.13	26.61
MD-80-87	JT8D-217	2.63	0.68	1.13	26.61
MD-95	BR700-710A1-10	2.58	0.32	0.94	26.48
Navajo	TIO-540-J2B2	3.62	0.93	0.98	26.49
SF-340-A	CT7-5	3.09	0.58	0.84	22.23
Swearingen Metro 2	TPE331-3	5.72	0.58	0.82	22.03

Notes: ** User defined aircraft in EDMS 4.2.1.
LTO = Landing and takeoff. One LTO cycle equals two operations: a landing and a takeoff.

Source: Emission and Dispersion Modeling System, Version 4.2.1. User created aircraft: PCR Services Corporation.
Prepared by: Ricondo & Associates, Inc.

Table K-9 (1 of 2)

Aircraft Time in Mode – Project (2005)

		Time-in-Mode (Minutes/LTO)			
EDMS Aircraft Type	**Aircraft Engine**	**Approach**	**Climb out**	**Takeoff**	**Taxi**
**Canadair RJ50	User-Created	3.48	0.23	0.82	24.64
**CNA	User-Created	3.48	0.23	0.82	24.64
**GAJ	User-Created	3.48	0.23	0.82	24.64
**GenAvProp Cargo	User-Created	3.48	0.23	0.82	24.64
**Jetstream 31	User-Created	3.48	0.23	0.82	50.55
**SAAB2000	User-Created	3.48	0.23	0.82	24.64
A300B	CF6-80C2A5	2.61	0.63	1.12	33.16
A300-C4-200	CF6-50A	2.61	0.63	1.12	33.16
A310	CF6-80A3	2.66	0.44	1.02	33.29
A310-200F	CF6-80A3	2.66	0.44	1.02	33.29
A319	CFM56-5B6/P	2.74	0.49	0.92	33.30
A320	V2527-A5	2.79	0.53	0.99	28.79
A330	PW4168A	2.88	0.53	1.08	33.12
A340-200	CFM56-5B6/2P	2.71	0.83	1.60	33.47
ATR42	PW120	4.03	0.57	0.81	24.84
ATR72-200	PW124-B	3.96	1.06	1.18	24.89
B727-200	JT8D-15	2.54	0.68	1.51	28.81
B737-200F	JT8D-17A	2.63	0.50	0.93	28.76
B737-300	CFM56-3-B1	2.59	0.41	0.89	28.79
B737-400	CFM56-3B-2	2.59	0.41	0.89	28.79
B737-500	CFM56-3C-1	2.65	0.47	1.01	28.80
B747-200	JT9D-7Q	2.42	0.92	1.35	33.21
B747-200F	CF6-50E2	2.42	0.92	1.35	33.21
B747-400	PW4056	2.36	0.85	1.35	33.28
B747-400F	CF6-80C2B1F	2.36	0.85	1.35	33.28
B747-SP	JT9D-7A	2.72	0.84	1.27	33.24
B757-200	PW2037	2.73	0.58	0.94	28.82
B757-200F	RB211-535E4	2.71	0.50	0.80	28.81
B767-200	CF6-80A2	2.62	0.67	1.20	33.09
B767-200ER	CF6-80A2	2.62	0.67	1.20	33.09
B767-300	CF6-80A2	2.62	0.67	1.20	33.09
B777-200	PW4077	3.32	0.76	1.17	33.29
BH-1900	PT6A-67D	5.72	0.58	0.82	24.64
BH-1900C	PT6A-65B	5.72	0.58	0.82	24.64
Dash 7	PT6A-50	3.72	0.76	0.98	24.70
DC10-30	CF6-50C2	2.40	0.64	1.30	33.13
DC10-30F	CF6-50C2	2.40	0.64	1.30	33.13
DC9-50	JT8D-17	2.48	0.61	0.99	33.09
EMB-110KQ1	PT6A-27	5.72	0.58	0.82	24.64
EMB-120	PW118	3.07	0.46	0.70	24.67
Fokker 100	TAY650-15	2.70	0.58	0.91	28.82
Fokker 50	PW125-B	3.33	0.70	0.96	24.87
Fokker 70	TAY620-15	2.73	0.57	0.98	24.94
Il-96-300	PS-90A	2.53	1.27	1.78	33.24

Table K-9 (2 of 2)

Aircraft Time in Mode – Project (2005)

		Time-in-Mode (Minutes/LTO)			
EDMS Aircraft Type	**Aircraft Engine**	**Approach**	**Climb out**	**Takeoff**	**Taxi**
L-1011-500	RB211-524B4	2.51	0.59	1.34	29.00
MD-11	PW4460	2.38	0.58	1.52	33.22
MD-11-11F	CF6-80C2D1F	2.38	0.63	1.36	33.28
MD-80	JT8D-217A	2.63	0.68	1.13	28.83
MD-80-87	JT8D-217	2.63	0.68	1.13	28.83
MD-90-10	V2525-D5	2.58	0.35	1.06	28.70
MD-95	BR700-710A1-10	2.58	0.32	0.94	28.70
SF-340-A	CT7-5	3.09	0.58	0.84	24.84
Shorts 360	PT6A-65AR	4.03	0.57	0.81	24.84
Swearingen Metro 2	TPE331-3	5.72	0.58	0.82	24.64

Notes: ** User defined aircraft in EDMS 4.2.1.
LTO = Landing and takeoff. One LTO cycle equals two operations: a landing and a takeoff.

Source: Emission and Dispersion Modeling System, Version 4.2.1. User created aircraft: PCR Services Corporation.
Prepared by: Ricondo & Associates, Inc.

Table K-10 (1 of 10)

Aircraft Ground Support Equipment and Auxiliary Power Unit Assignments – Baseline 2003 Conditions

EDMS Aircraft Type	GSE/APU Type	Fuel Type	Operating Time (Minutes/LTO)	Brake Horsepower	Load Factor
**Canadair RJ50	APU GTCP 85 (200 HP)		15	0	0.00
	**Aircraft Tractor Narrow	Gasoline	8	270	0.95
	**Belt Loader Narrow	Propane	48	71	0.50
	**Catering Truck Narrow	Gasoline	15	210	0.53
	**Cabin Service Truck Narrow	Gasoline	20	260	0.53
	**Hydrant Truck Narrow	Gasoline	12	260	0.70
	**Lavatory Truck Narrow	Gasoline	15	97	0.25
	**Baggage Tractor Narrow	Propane	75	83	0.55
**GAJ	APU -NONE-		15	0	0.00
	**Aircraft Tractor Narrow	Diesel	8	270	0.95
	**Fuel Truck	Diesel	20	200	0.70
	**GPU 28VDC	Diesel	40	71	0.75
A300B	APU GTCP 660 (300 HP)		15	0	0.00
	**Aircraft Tractor Wide	Diesel	8	475	0.80
	**Cargo Loader Wide	Diesel	80	83	0.50
	**Baggage Tractor Wide	Propane	120	83	0.55
	**Belt Loader Wide	Propane	35	71	0.50
	**Cabin Service Truck Wide	Gasoline	35	260	0.53
	**Catering Truck Wide	Gasoline	20	210	0.53
	**Hydrant Truck Wide	Gasoline	20	260	0.70
	**Lavatory Truck Wide	Diesel	25	235	0.25
	**Water Service	Diesel	12	235	0.20
A300-C4-200	APU GTCP 660 (300 HP)		15	0	0.00
	**Aircraft Tractor Wide	Gasoline	8	475	0.80
	**Cargo Loader Wide	Diesel	80	83	0.50
	**GPU 28VDC	Diesel	40	71	0.75
	**Hydrant Truck Wide	Diesel	20	235	0.70
	**Lavatory Truck Wide	Diesel	25	235	0.25
	**Air Start 180 PPM	Diesel	7	425	0.75
A310	APU GTCP 85 (200 HP)		15	0	0.00
	**Aircraft Tractor Narrow	Diesel	8	270	0.95
	**Cabin Service Truck Narrow	Gasoline	20	260	0.53
	**Catering Truck Narrow	Gasoline	15	210	0.53
	**Hydrant Truck Narrow	Diesel	12	235	0.70
	**Lavatory Truck Narrow	Diesel	15	56	0.25
A310-200F	APU GTCP 85 (200 HP)		15	0	0.00
	**Air Start 180 PPM	Gasoline	7	425	0.75
	**Aircraft Tractor Narrow	Diesel	8	270	0.95
	**Cargo Loader Narrow	Gasoline	40	80	0.50
	**GPU 28VDC	Diesel	40	71	0.75
	**Hydrant Truck Narrow	Diesel	12	235	0.70
	**Lavatory Truck Narrow	Diesel	15	56	0.25

Table K-10 (2 of 10)

Aircraft Ground Support Equipment and Auxiliary Power Unit Assignments – Baseline 2003 Conditions

EDMS Aircraft Type	GSE/APU Type	Fuel Type	Operating Time (Minutes/LTO)	Brake Horsepower	Load Factor
A319	APU GTCP 85 (200 HP)		15	0	0.00
	**Aircraft Tractor Narrow	Diesel	8	270	0.95
	**Baggage Tractor Narrow	Diesel	75	83	0.55
	**Cabin Service Truck Narrow	Gasoline	20	260	0.53
	**Catering Truck Narrow	Gasoline	15	210	0.53
	**Hydrant Truck Narrow	Diesel	12	235	0.70
	**Lavatory Truck Narrow	Diesel	15	56	0.25
A320	APU GTCP 85 (200 HP)		15	0	0.00
	**Aircraft Tractor Narrow	Diesel	8	270	0.95
	**Baggage Tractor Narrow	Diesel	75	83	0.55
	**Belt Loader Narrow	Diesel	48	71	0.50
	**Cabin Service Truck Narrow	Gasoline	20	260	0.53
	**Catering Truck Narrow	Gasoline	15	210	0.53
	**Hydrant Truck Narrow	Diesel	12	235	0.70
	**Lavatory Truck Narrow	Diesel	15	56	0.25
A330	APU GTCP 85 (200 HP)		15	0	0.00
	**Aircraft Tractor Narrow	Diesel	8	270	0.95
	**Baggage Tractor Narrow	Diesel	75	83	0.55
	**Belt Loader Narrow	Diesel	48	71	0.50
	**Cabin Service Truck Narrow	Gasoline	20	260	0.53
	**Catering Truck Narrow	Gasoline	15	210	0.53
	**Hydrant Truck Narrow	Diesel	12	235	0.70
	**Lavatory Truck Narrow	Diesel	15	56	0.25
A340-200	APU GTCP 660 (300 HP)		15	0	0.00
	**Aircraft Tractor Wide	Diesel	8	475	0.80
	**Baggage Tractor Wide	Propane	120	83	0.55
	**Belt Loader Wide	Diesel	35	71	0.50
	**Cabin Service Truck Wide	Gasoline	35	260	0.53
	**Cart	Gasoline	10	25	0.50
	**Catering Truck Wide	Gasoline	20	210	0.53
	**Hydrant Truck Wide	Diesel	20	235	0.70
	**Lavatory Truck Wide	Diesel	25	235	0.25
	**Water Service	Gasoline	12	235	0.20
A-7 CORSAIR II	APU -NONE-		0		
	**Aircraft Tractor Narrow	Diesel	8	270	0.95
	**Cart	Diesel	10	25	0.50
	**Fuel Truck	Diesel	20	200	0.70
	**Lavatory Truck Narrow	Diesel	15	82	0.70
	**GPU 28VDC	Diesel	40	83	0.75

Table K-10 (3 of 10)

Aircraft Ground Support Equipment and Auxiliary Power Unit Assignments – Baseline 2003 Conditions

EDMS Aircraft Type	GSE/APU Type	Fuel Type	Operating Time (Minutes/LTO)	Brake Horsepower	Load Factor
ATR42	APU GTCP 36 (80HP)		15	0	0.00
	**Aircraft Tractor Narrow	Gasoline	8	270	0.95
	**Baggage Tractor Narrow	Propane	75	83	0.55
	**Cabin Service Truck Narrow	Gasoline	20	260	0.53
	**Catering Truck Narrow	Gasoline	15	210	0.53
	**Hydrant Truck Narrow	Gasoline	12	260	0.70
	**Lavatory Truck Narrow	Diesel	15	56	0.25
B727-200	APU GTCP85 (200 HP)		15	0	0.00
	**Aircraft Tractor Narrow	Diesel	8	270	0.95
	**Baggage Tractor Narrow	Propane	75	83	0.55
	**Belt Loader Narrow	Diesel	48	71	0.50
	**Cabin Service Truck Narrow	Gasoline	20	260	0.53
	**Catering Truck Narrow	Gasoline	15	210	0.53
	**Hydrant Truck Narrow	Diesel	12	235	0.70
	**Lavatory Truck Narrow	Diesel	15	56	0.25
B737-200F	APU GTCP85-129 (200 HP)		26	0	0.00
	APU GTCP 85 (200 HP)		15	0	0.00
	**Aircraft Tractor Narrow	Gasoline	8	270	0.95
	**Cargo Loader Narrow	Diesel	40	80	0.50
	**GPU 28VDC	Diesel	40	71	0.75
	**Hydrant Truck Narrow	Diesel	12	235	0.70
	**Lavatory Truck Narrow	Gasoline	15	97	0.25
	**Air Start 180 PPM	Diesel	7	425	0.75
B737-300	APU GTCP85 (200 HP)		15	0	0.00
	**Aircraft Tractor Narrow	Diesel	8	270	0.95
	**Baggage Tractor Narrow	Diesel	75	83	0.55
	**Belt Loader Narrow	Gasoline	48	71	0.50
	**Cabin Service Truck Narrow	Gasoline	20	260	0.53
	**Catering Truck Narrow	Gasoline	15	210	0.53
	**Hydrant Truck Narrow	Diesel	12	235	0.70
	**Lavatory Truck Narrow	Diesel	15	56	0.25
B737-400	APU GTCP85 (200 HP)		15	0	0.00
	**Aircraft Tractor Narrow	Diesel	8	270	0.95
	**Baggage Tractor Narrow	Gasoline	75	83	0.55
	**Belt Loader Narrow	Gasoline	48	71	0.50
	**Cabin Service Truck Narrow	Gasoline	20	260	0.53
	**Catering Truck Narrow	Gasoline	15	210	0.53
	**Hydrant Truck Narrow	Diesel	12	235	0.70
	**Lavatory Truck Narrow	Diesel	15	56	0.25

Table K-10 (4 of 10)

Aircraft Ground Support Equipment and Auxiliary Power Unit Assignments – Baseline 2003 Conditions

EDMS Aircraft Type	GSE/APU Type	Fuel Type	Operating Time (Minutes/LTO)	Brake Horsepower	Load Factor
B737-500	APU GTCP85 (200 HP)		15	0	0.00
	**Aircraft Tractor Narrow	Diesel	8	270	0.95
	**Baggage Tractor Narrow	Gasoline	75	83	0.55
	**Belt Loader Narrow	Gasoline	48	71	0.50
	**Cabin Service Truck Narrow	Gasoline	20	260	0.53
	**Catering Truck Narrow	Gasoline	15	210	0.53
	**Hydrant Truck Narrow	Diesel	12	235	0.70
	**Lavatory Truck Narrow	Diesel	15	56	0.25
B747-200	APU GTCP 660 (300 HP)		15	0	0.00
	**Aircraft Tractor Wide	Gasoline	8	475	0.80
	**Baggage Tractor Wide	Gasoline	120	83	0.55
	**Belt Loader Wide	Diesel	35	71	0.50
	**Cabin Service Truck Wide	Gasoline	35	260	0.53
	**Cargo Loader Wide	Diesel	80	83	0.50
	**Catering Truck Wide	Gasoline	20	210	0.53
	**Hydrant Truck Wide	Diesel	20	235	0.70
	**Lavatory Truck Wide	Diesel	25	235	0.25
	**Water Service	Diesel	12	235	0.20
B747-200F	APU GTCP 660 (300 HP)		15	0	0.00
	**Aircraft Tractor Wide	Diesel	8	475	0.80
	**Cargo Loader Wide	Diesel	80	83	0.50
	**Cart	Diesel	10	25	0.50
	**GPU 28VDC	Diesel	40	71	0.75
	**Hydrant Truck Wide	Diesel	20	235	0.70
	**Lavatory Truck Wide	Diesel	25	235	0.25
	**Air Start 180 PPM	Diesel	7	425	0.75
B747-400	APU GTCP 660 (300 HP)		15	0	0.00
	**Aircraft Tractor Wide	Diesel	8	475	0.80
	**Baggage Tractor Wide	Gasoline	120	83	0.55
	**Belt Loader Wide	Gasoline	35	71	0.50
	**Cabin Service Truck Wide	Gasoline	35	260	0.53
	**Cargo Loader Wide	Diesel	80	83	0.50
	**Catering Truck Wide	Gasoline	20	210	0.53
	**Hydrant Truck Wide	Diesel	20	235	0.70
	**Lavatory Truck Wide	Diesel	25	235	0.25
	**Water Service	Diesel	12	235	0.20
B747-400F	APU GTCP 660 (300 HP)		15	0	0.00
	**Air Start 180 PPM	Diesel	7	425	0.75
	**Aircraft Tractor Wide	Diesel	8	475	0.80
	**Cargo Loader Wide	Diesel	80	83	0.50
	**Cart	Diesel	10	25	0.50
	**GPU 28VDC	Diesel	40	71	0.75
	**Hydrant Truck Wide	Diesel	20	235	0.70
	**Lavatory Truck Wide	Diesel	25	235	0.25

Table K-10 (5 of 10)

Aircraft Ground Support Equipment and Auxiliary Power Unit Assignments – Baseline 2003 Conditions

EDMS Aircraft Type	GSE/APU Type	Fuel Type	Operating Time (Minutes/LTO)	Brake Horsepower	Load Factor
B747-SP	APU GTCP 660 (300 HP)		15	0	0.00
	**Aircraft Tractor Wide	Diesel	8	475	0.80
	**Baggage Tractor Wide	Diesel	120	83	0.55
	**Belt Loader Wide	Gasoline	35	71	0.50
	**Cabin Service Truck Wide	Gasoline	35	260	0.53
	**Cargo Loader Wide	Gasoline	80	83	0.50
	**Catering Truck Wide	Gasoline	20	210	0.53
	**Hydrant Truck Wide	Diesel	20	235	0.70
	**Lavatory Truck Wide	Diesel	25	235	0.25
	**Water Service	Propane	12	235	0.20
B757-200	APU GTCP 85 (200 HP)		15	0	0.00
	**Aircraft Tractor Narrow	Diesel	8	270	0.95
	**Baggage Tractor Narrow	Gasoline	75	83	0.55
	**Belt Loader Narrow	Gasoline	48	71	0.50
	**Cabin Service Truck Narrow	Gasoline	20	260	0.53
	**Catering Truck Narrow	Gasoline	15	210	0.53
	**Hydrant Truck Narrow	Diesel	12	235	0.70
	**Lavatory Truck Narrow	Diesel	15	56	0.25
B757-200F	APU GTCP 85 (200 HP)		15	0	0.00
	**Aircraft Tractor Narrow	Diesel	8	270	0.95
	**Cargo Loader Narrow	Gasoline	40	80	0.50
	**GPU 28VDC	Diesel	40	71	0.75
	**Hydrant Truck Narrow	Diesel	12	235	0.70
	**Lavatory Truck Narrow	Diesel	15	56	0.25
	**Air Start 180 PPM	Diesel	7	425	0.75
B767-200	APU GTCP 660 (300 HP)		15	0	0.00
	**Aircraft Tractor Wide	Diesel	8	475	0.80
	**Baggage Tractor Wide	Propane	120	83	0.55
	**Belt Loader Wide	Propane	35	71	0.50
	**Cabin Service Truck Wide	Gasoline	35	260	0.53
	**Cargo Loader Wide	Diesel	80	83	0.50
	**Catering Truck Wide	Gasoline	20	210	0.53
	**Hydrant Truck Wide	Diesel	20	235	0.70
	**Lavatory Truck Wide	Diesel	25	235	0.25
B767-200ER	APU GTCP 660 (300 HP)		15	0	0.00
	**Air Start 180 PPM	Diesel	7	425	0.75
	**Aircraft Tractor Wide	Diesel	8	475	0.80
	**Cargo Loader Wide	Diesel	80	83	0.50
	**Cart	Diesel	10	25	0.50
	**GPU 28VDC	Diesel	40	71	0.75
	**Hydrant Truck Wide	Diesel	20	235	0.70
	**Lavatory Truck Wide	Diesel	25	235	0.25

Table K-10 (6 of 10)

Aircraft Ground Support Equipment and Auxiliary Power Unit Assignments – Baseline 2003 Conditions

EDMS Aircraft Type	GSE/APU Type	Fuel Type	Operating Time (Minutes/LTO)	Brake Horsepower	Load Factor
B767-300	APU GTCP 660 (300 HP)		15	0	0.00
	**Baggage Tractor Wide	Propane	120	83	0.55
	**Belt Loader Wide	Propane	35	71	0.50
	**Cabin Service Truck Wide	Gasoline	35	260	0.53
	**Cargo Loader Wide	Gasoline	80	83	0.50
	**Catering Truck Wide	Gasoline	20	210	0.53
	**Hydrant Truck Wide	Diesel	20	235	0.70
	**Lavatory Truck Wide	Diesel	25	235	0.25
	**Water Service	Diesel	12	235	0.20
B777-200	APU GTCP 660 (300 HP)		15	0	0.00
	**Aircraft Tractor Wide	Diesel	8	475	0.80
	**Baggage Tractor Wide	Propane	120	83	0.55
	**Belt Loader Wide	Propane	35	71	0.50
	**Cabin Service Truck Wide	Gasoline	35	260	0.53
	**Cargo Loader Wide	Diesel	80	83	0.50
	**Catering Truck Wide	Gasoline	20	210	0.53
	**Hydrant Truck Wide	Gasoline	20	260	0.70
	**Lavatory Truck Wide	Diesel	25	235	0.25
	**Water Service	Diesel	12	235	0.20
BAE146-300	APU GTCP 36-150[]		25		
	Service Truck	Diesel	15	235	0.20
	**Aircraft Tractor Narrow	Diesel	8	270	0.95
	**Baggage Tractor Narrow	C	75	83	0.55
	**Belt Loader Narrow	Diesel	48	71	0.50
	**Cabin Service Truck Narrow	Diesel	20	210	0.53
	**Catering Truck Narrow	Diesel	15	210	0.53
	**Hydrant Truck Narrow	Gasoline	12	360	0.70
	**Lavatory Truck Narrow	Diesel	15	82	0.70
BH-1900	APU -NONE-		15	0	0.00
	**Aircraft Tractor Narrow	Gasoline	8	270	0.95
	**Fuel Truck	Gasoline	20	200	0.70
	**GPU 28VDC	Diesel	40	71	0.75
BH-1900C	APU -NONE-		15	0	0.00
	**GPU 28VDC	Diesel	40	71	0.75
	**Aircraft Tractor Narrow	Propane	8	270	0.95
	**Fuel Truck	Propane	20	200	0.70
Dash 7	APU GTCP 36 (80HP)		15	0	0.00
	**Baggage Tractor Narrow	Diesel	75	83	0.55
	**Cabin Service Truck Narrow	Gasoline	20	260	0.53
	**Catering Truck Narrow	Gasoline	15	210	0.53
	**Hydrant Truck Narrow	Gasoline	12	260	0.70
	**Lavatory Truck Narrow	Gasoline	15	97	0.25

Table K-10 (7 of 10)

Aircraft Ground Support Equipment and Auxiliary Power Unit Assignments – Baseline 2003 Conditions

EDMS Aircraft Type	GSE/APU Type	Fuel Type	Operating Time (Minutes/LTO)	Brake Horsepower	Load Factor
DC10-30	APU GTCP 660 (300 HP)		15	0	0.00
	**Aircraft Tractor Wide	Diesel	8	475	0.80
	**Baggage Tractor Wide	Diesel	120	83	0.55
	**Cabin Service Truck Wide	Gasoline	35	260	0.53
	**Cargo Loader Wide	Diesel	80	83	0.50
	**Catering Truck Wide	Gasoline	20	210	0.53
	**Hydrant Truck Wide	Gasoline	20	260	0.70
	**Lavatory Truck Wide	Diesel	25	235	0.25
	**Water Service	Diesel	12	235	0.20
DC10-30F	APU GTCP 660 (300 HP)		15	0	0.00
	**Air Start 180 PPM	Diesel	7	425	0.75
	**Aircraft Tractor Wide	Diesel	8	475	0.80
	**Cargo Loader Wide	Diesel	80	83	0.50
	**Cart	Diesel	10	25	0.50
	**GPU 28VDC	Diesel	40	71	0.75
	**Hydrant Truck Wide	Diesel	20	235	0.70
	**Lavatory Truck Wide	Diesel	25	235	0.25
DC8-70	APU GTCP85-129 (200 HP)		25		
	Service Truck	Diesel	15	235	0.20
	**Aircraft Tractor Narrow	Diesel	8	270	0.95
	**Baggage Tractor Narrow	Gasoline	75	83	0.55
	**Belt Loader Narrow	Diesel	48	71	0.50
	**Cabin Service Truck Narrow	Diesel	20	210	0.53
	**Catering Truck Narrow	Diesel	15	210	0.53
	**Hydrant Truck Narrow	Gasoline	12	360	0.70
	**Lavatory Truck Narrow	Diesel	15	82	0.70
DC9-50	APU GTCP 85 (200 HP)		26	0	0.00
	**Aircraft Tractor Narrow	Gasoline	8	270	0.95
	**Baggage Tractor Narrow	Diesel	75	83	0.55
	**Cabin Service Truck Narrow	Gasoline	20	260	0.53
	**Catering Truck Narrow	Gasoline	15	210	0.53
	**Hydrant Truck Narrow	Propane	12	360	0.70
	**Lavatory Truck Narrow	Gasoline	15	97	0.25

Table K-10 (8 of 10)

Aircraft Ground Support Equipment and Auxiliary Power Unit Assignments – Baseline 2003 Conditions

EDMS Aircraft Type	GSE/APU Type	Fuel Type	Operating Time (Minutes/LTO)	Brake Horsepower	Load Factor
EMB-110KQ1	APU GTCP 36 (80HP)		15	0	0.00
	**Baggage Tractor Narrow	Natural Gas	75	83	0.55
	**Cabin Service Truck Narrow	Gasoline	20	260	0.53
	**Catering Truck Narrow	Gasoline	15	210	0.53
	**Hydrant Truck Narrow	Gasoline	12	260	0.70
	**Lavatory Truck Narrow	Diesel	15	56	0.25
	Service Truck	Diesel	15	235	0.20
	Fuel Truck MidSize 3-6 000 g	Diesel	20	175	0.25
	Catering Truck Commuter/Reg	Diesel	10	80	0.53
	Belt Loader Commuter	Gasoline	30	107	0.50
	Baggage Tractor Commuter	Gasoline	35	107	0.55
	Aircraft Tractor Commuter/Reg	Diesel	5	86	0.80
	Ground Power Unit 28VDC	Diesel	40	71	0.75
EMB-120	APU GTCP 36 (80HP)		15	0	0.00
	**Aircraft Tractor Narrow	Diesel	8	270	0.95
	**Baggage Tractor Narrow	Diesel	75	83	0.55
	**Cabin Service Truck Narrow	Gasoline	20	260	0.53
	**Catering Truck Narrow	Gasoline	15	210	0.53
	**Hydrant Truck Narrow	Gasoline	12	260	0.70
	**Lavatory Truck Narrow	Diesel	15	56	0.25
F-28-4000	APU GTCP 85 (200 HP)		25		
	Water Service	Electric	12	0	0.20
	Service Truck	Diesel	15	235	0.20
	Lavatory Truck Narrow Body	Diesel	15	56	0.25
	Fuel Truck MidSize 3-6 000 g	Diesel	20	175	0.25
	Catering Truck Narrow Body	Diesel	15	210	0.53
	Cabin Service Truck Narrow	Diesel	20	210	0.53
	Belt Loader Narrow Body	Gasoline	48	107	0.50
	Baggage Tractor Narrow Body	Gasoline	75	107	0.55
	Air Conditioner Narrow Body	Electric	30	0	0.75
	Aircraft Tractor Commuter/Reg	Diesel	5	86	0.80
	**Fuel Truck	Diesel	20	200	0.70
	**Lavatory Truck Narrow	Diesel	15	82	0.70
Fokker 70	APU GTCP 85 (200 HP)		15	0	0.00
	**Aircraft Tractor Narrow	Gasoline	8	270	0.95
	**Baggage Tractor Narrow	Natural Gas	75	83	0.55
	**Cabin Service Truck Narrow	Gasoline	20	260	0.53
	**Catering Truck Narrow	Gasoline	15	210	0.53
	**Hydrant Truck Narrow	Gasoline	12	260	0.70
	**Lavatory Truck Narrow	Diesel	15	56	0.25
Jetstream 31	APU -NONE-		15	0	0.00
	**Fuel Truck	Diesel	20	200	0.70
	**GPU 28VDC	Diesel	40	71	0.75

Table K-10 (9 of 10)

Aircraft Ground Support Equipment and Auxiliary Power Unit Assignments – Baseline 2003 Conditions

EDMS Aircraft Type	GSE/APU Type	Fuel Type	Operating Time (Minutes/LTO)	Brake Horsepower	Load Factor
L-1011-500	APU GTCP 660 (300 HP)		15	0	0.00
	**Aircraft Tractor Wide	Propane	8	475	0.80
	**Baggage Tractor Wide	Diesel	120	83	0.55
	**Cabin Service Truck Wide	Propane	35	210	0.53
	**Cargo Loader Wide	Propane	80	83	0.50
	**Catering Truck Wide	Gasoline	20	210	0.53
	**Hydrant Truck Wide	Gasoline	20	260	0.70
	**Lavatory Truck Wide	Gasoline	25	260	0.25
	**Water Service	Diesel	12	235	0.20
MD-11	APU GTCP 660 (300 HP)		15	0	0.00
	**Aircraft Tractor Wide	Diesel	8	475	0.80
	**Baggage Tractor Wide	Diesel	120	83	0.55
	**Belt Loader Wide	Diesel	35	71	0.50
	**Cabin Service Truck Wide	Gasoline	35	260	0.53
	**Cargo Loader Wide	Diesel	80	83	0.50
	**Catering Truck Wide	Propane	20	210	0.53
	**Hydrant Truck Wide	Gasoline	20	260	0.70
	**Lavatory Truck Wide	Diesel	25	235	0.25
	**Water Service	Gasoline	12	235	0.20
MD-11-11F	APU GTCP 660 (300 HP)		15	0	0.00
	**Cargo Loader Wide	Diesel	80	83	0.50
	**Cart	Diesel	10	25	0.50
	**GPU 28VDC	Diesel	40	71	0.75
	**Hydrant Truck Wide	Diesel	20	235	0.70
	**Lavatory Truck Wide	Propane	25	360	0.70
	**Air Start 180 PPM	Diesel	7	425	0.75
MD-80	APU GTCP 85 (200 HP)		15	0	0.00
	**Aircraft Tractor Narrow	Diesel	8	270	0.95
	**Belt Loader Narrow	Diesel	48	71	0.50
	**Cabin Service Truck Narrow	Propane	20	210	0.53
	**Catering Truck Narrow	Propane	15	210	0.53
	**Hydrant Truck Narrow	Gasoline	12	260	0.70
	**Lavatory Truck Narrow	Diesel	15	56	0.25
MD-80-87	APU GTCP 85 (200 HP)		15	0	0.00
	**Aircraft Tractor Narrow	Diesel	8	270	0.95
	**Baggage Tractor Narrow	Diesel	75	83	0.55
	**Belt Loader Narrow	Diesel	48	71	0.50
	**Cabin Service Truck Narrow	Gasoline	20	260	0.53
	**Catering Truck Narrow	Gasoline	15	210	0.53
	**Hydrant Truck Narrow	Gasoline	12	260	0.70
	**Lavatory Truck Narrow	Diesel	15	56	0.25

Table K-10 (10 of 10)

Aircraft Ground Support Equipment and Auxiliary Power Unit Assignments – Baseline 2003 Conditions

EDMS Aircraft Type	GSE/APU Type	Fuel Type	Operating Time (Minutes/LTO)	Brake Horsepower	Load Factor
MD-95	APU GTCP 85 (200 HP)		15	0	0.00
	**Aircraft Tractor Narrow	Propane	8	270	0.95
	**Cabin Service Truck Narrow	Propane	20	210	0.53
	**Catering Truck Narrow	Propane	15	210	0.53
	**Hydrant Truck Narrow	Gasoline	12	260	0.70
	**Lavatory Truck Narrow	Propane	15	82	0.70
Navajo	APU -NONE-		0		
	Fuel Truck Small < 3 000 gal	Diesel	10	175	0.25
	APU -NONE-		0		
	**Fuel Truck	Diesel	20	200	0.70
SF-340-A	APU GTCP 36 (80HP)		15	0	0.00
	**Aircraft Tractor Narrow	Diesel	8	270	0.95
	**Belt Loader Narrow	Diesel	48	71	0.50
	**Cabin Service Truck Narrow	Propane	20	210	0.53
	**Catering Truck Narrow	Propane	15	210	0.53
	**Hydrant Truck Narrow	Gasoline	12	260	0.70
	**Lavatory Truck Narrow	Gasoline	15	97	0.25
Swearingen Metro 2	APU GTCP 36 (80HP)		15	0	0.00
	**Aircraft Tractor Narrow	Diesel	8	270	0.95
	**Baggage Tractor Narrow	Diesel	75	83	0.55
	**Belt Loader Narrow	Diesel	48	71	0.50
	**Cabin Service Truck Narrow	Propane	20	210	0.53
	**Catering Truck Narrow	Propane	15	210	0.53
	**Hydrant Truck Narrow	Gasoline	12	260	0.70
	**Lavatory Truck Narrow	Gasoline	15	97	0.25

Notes: GSE = Ground Support Equipment.
APU = Auxiliary Power Unit.
LTO = Landing and takeoff. One LTO cycle equals two operations: a landing and a takeoff.
** User defined aircraft or user defined GSE in EDMS 4.2.1

Source: Emission and Dispersion Modeling System, Version 4.2.1. User created aircraft and GSE: PCR Services Corporation.
Prepared by: Ricondo & Associates, Inc.

Table K-11 (1 of 10)

Aircraft Ground Support Equipment and Auxiliary Power Unit Assignments – Project (2005)

EDMS Aircraft Type	GSE/APU Type	Fuel Type	Operating Time (Minutes/LTO)	Brake Horsepower	Load Factor
**Canadair RJ50	APU GTCP 85 (200 HP)		15	0	0.00
	**Cabin Service Truck Narrow	Gasoline	20	260	0.53
	**Hydrant Truck Narrow	Gasoline	12	260	0.70
	**Lavatory Truck Narrow	Gasoline	15	97	0.25
	**Baggage Tractor Narrow	Propane	75	83	0.55
	**Aircraft Tractor Narrow	Gasoline	8	270	0.95
	**Baggage Tractor Narrow	Propane	75	83	0.55
	**Belt Loader Narrow	Propane	48	71	0.50
**GAJ	**Aircraft Tractor Narrow	Diesel	8	270	0.95
	**Fuel Truck	Diesel	20	200	0.70
	**GPU 28VDC	Diesel	40	71	0.75
A300B	APU GTCP 660 (300 HP)		7	0	0.00
	**Baggage Tractor Wide	Propane	120	83	0.55
	**Belt Loader Wide	Propane	35	71	0.50
	**Cabin Service Truck Wide	Gasoline	35	260	0.53
	"**Catering Truck Wide	Gasoline	20	210	0.53
	**Hydrant Truck Wide	Gasoline	20	260	0.70
	**Lavatory Truck Wide	Diesel	25	235	0.25
	**Water Service	Diesel	12	235	0.20
	**Aircraft Tractor Wide	Diesel	8	475	0.80
	**Cargo Loader Wide	Diesel	80	83	0.50
A300-C4-200	**Aircraft Tractor Wide	Gasoline	8	475	0.80
	**Cargo Loader Wide	Diesel	80	83	0.50
	**GPU 28VDC	Diesel	40	71	0.75
	**Hydrant Truck Wide	Diesel	20	235	0.70
	**Lavatory Truck Wide	Diesel	25	235	0.25
	**Air Start 180 PPM	Diesel	7	425	0.75
A310	APU GTCP 85 (200 HP)		15	0	0.00
	**Aircraft Tractor Narrow	Diesel	8	270	0.95
	**Cabin Service Truck Narrow	Gasoline	20	260	0.53
	**Catering Truck Narrow	Gasoline	15	210	0.53
	**Hydrant Truck Narrow	Diesel	12	235	0.70
	**Lavatory Truck Narrow	Diesel	15	56	0.25
A310-200F	**Air Start 180 PPM	Gasoline	7	425	0.75
	**Aircraft Tractor Narrow	Diesel	8	270	0.95
	**Cargo Loader Narrow	Gasoline	40	80	0.50
	**GPU 28VDC	Diesel	40	71	0.75
	**Hydrant Truck Narrow	Diesel	12	235	0.70
	**Lavatory Truck Narrow	Diesel	15	56	0.25

Table K-11 (2 of 10)

Aircraft Ground Support Equipment and Auxiliary Power Unit Assignments – Project (2005)

EDMS Aircraft Type	GSE/APU Type	Fuel Type	Operating Time (Minutes/LTO)	Brake Horsepower	Load Factor
A319	APU GTCP 85 (200 HP)		15	0	0.00
	**Aircraft Tractor Narrow	Diesel	8	270	0.95
	**Baggage Tractor Narrow	Diesel	75	83	0.55
	**Cabin Service Truck Narrow	Gasoline	20	260	0.53
	**Catering Truck Narrow	Gasoline	15	210	0.53
	**Hydrant Truck Narrow	Diesel	12	235	0.70
	**Lavatory Truck Narrow	Diesel	15	56	0.25
A320	APU GTCP 85 (200 HP)		15	0	0.00
	**Aircraft Tractor Narrow	Diesel	8	270	0.95
	**Baggage Tractor Narrow	Propane	75	83	0.55
	**Belt Loader Narrow	Diesel	48	71	0.50
	**Cabin Service Truck Narrow	Gasoline	20	260	0.53
	**Catering Truck Narrow	Gasoline	15	210	0.53
	**Hydrant Truck Narrow	Diesel	12	235	0.70
	**Lavatory Truck Narrow	Diesel	15	56	0.25
A330	APU GTCP 85 (200 HP)		15	0	0.00
	**Aircraft Tractor Narrow	Diesel	8	270	0.95
	**Baggage Tractor Narrow	Diesel	75	83	0.55
	**Belt Loader Narrow	Diesel	48	71	0.50
	**Cabin Service Truck Narrow	Gasoline	20	260	0.53
	**Catering Truck Narrow	Gasoline	15	210	0.53
	**Hydrant Truck Narrow	Diesel	12	235	0.70
	**Lavatory Truck Narrow	Diesel	15	56	0.25
A340-200	APU GTCP 660 (300 HP)		15	0	0.00
	**Aircraft Tractor Wide	Diesel	8	475	0.80
	**Baggage Tractor Wide	Propane	120	83	0.55
	**Belt Loader Wide	Diesel	35	71	0.50
	**Cabin Service Truck Wide	Gasoline	35	260	0.53
	**Cart	Gasoline	10	25	0.50
	**Catering Truck Wide	Gasoline	20	210	0.53
	**Hydrant Truck Wide	Diesel	20	235	0.70
	**Lavatory Truck Wide	Diesel	25	235	0.25
	**Water Service	Gasoline	12	235	0.20
ATR42	APU GTCP 36 (80HP)		15	0	0.00
	**Aircraft Tractor Narrow	Gasoline	8	270	0.95
	**Baggage Tractor Narrow	Propane	75	83	0.55
	**Cabin Service Truck Narrow	Gasoline	20	260	0.53
	**Catering Truck Narrow	Gasoline	15	210	0.53
	**Hydrant Truck Narrow	Gasoline	12	260	0.70
	**Lavatory Truck Narrow	Diesel	15	56	0.25

Table K-11 (3 of 10)

Aircraft Ground Support Equipment and Auxiliary Power Unit Assignments – Project (2005)

EDMS Aircraft Type	GSE/APU Type	Fuel Type	Operating Time (Minutes/LTO)	Brake Horsepower	Load Factor
ATR72-200	APU GTCP 36 (80HP)		15	0	0.00
	**Aircraft Tractor Narrow	Gasoline	8	270	0.95
	**Baggage Tractor Narrow	Propane	75	83	0.55
	**Belt Loader Narrow	Propane	48	71	0.50
	**Cabin Service Truck Narrow	Gasoline	20	260	0.53
	**Catering Truck Narrow	Gasoline	15	210	0.53
	**Hydrant Truck Narrow	Propane	12	360	0.70
	**Lavatory Truck Narrow	Diesel	15	56	0.25
B727-200	APU GTCP 85 (200 HP)		15	0	0.00
	**Aircraft Tractor Narrow	Diesel	8	270	0.95
	**Baggage Tractor Narrow	Propane	75	83	0.55
	**Belt Loader Narrow	Diesel	48	71	0.50
	**Cabin Service Truck Narrow	Gasoline	20	260	0.53
	**Catering Truck Narrow	Gasoline	15	210	0.53
	**Hydrant Truck Narrow	Diesel	12	235	0.70
	**Lavatory Truck Narrow	Diesel	15	56	0.25
B737-200F	APU GTCP 85 (200 HP)		15	0	0.00
	**Aircraft Tractor Narrow	Gasoline	8	270	0.95
	**Cargo Loader Narrow	Diesel	40	80	0.50
	**GPU 28VDC	Diesel	40	71	0.75
	**Hydrant Truck Narrow	Diesel	12	235	0.70
	**Lavatory Truck Narrow	Gasoline	15	97	0.25
	**Air Start 180 PPM	Diesel	7	425	0.75
B737-300	APU GTCP 85 (200 HP)		15	0	0.00
	**Aircraft Tractor Narrow	Diesel	8	270	0.95
	**Baggage Tractor Narrow	Propane	75	83	0.55
	**Belt Loader Narrow	Gasoline	48	71	0.50
	**Cabin Service Truck Narrow	Gasoline	20	260	0.53
	**Catering Truck Narrow	Gasoline	15	210	0.53
	**Hydrant Truck Narrow	Diesel	12	235	0.70
	**Lavatory Truck Narrow	Diesel	15	56	0.25
B737-400	APU GTCP 85 (200 HP)		15	0	0.00
	**Aircraft Tractor Narrow	Diesel	8	270	0.95
	**Baggage Tractor Narrow	Gasoline	75	83	0.55
	**Belt Loader Narrow	Gasoline	48	71	0.50
	**Cabin Service Truck Narrow	Gasoline	20	260	0.53
	**Catering Truck Narrow	Gasoline	15	210	0.53
	**Hydrant Truck Narrow	Diesel	12	235	0.70
	**Lavatory Truck Narrow	Diesel	15	56	0.25

Table K-11 (4 of 10)

Aircraft Ground Support Equipment and Auxiliary Power Unit Assignments – Project (2005)

EDMS Aircraft Type	GSE/APU Type	Fuel Type	Operating Time (Minutes/LTO)	Brake Horsepower	Load Factor
B747-200	APU GTCP 660 (300 HP)		15	0	0.00
	**Aircraft Tractor Wide	Gasoline	8	475	0.80
	**Baggage Tractor Wide	Gasoline	120	83	0.55
	**Belt Loader Wide	Diesel	35	71	0.50
	**Cabin Service Truck Wide	Gasoline	35	260	0.53
	**Cargo Loader Wide	Diesel	80	83	0.50
	**Catering Truck Wide	Gasoline	20	210	0.53
	**Hydrant Truck Wide	Diesel	20	235	0.70
	**Lavatory Truck Wide	Diesel	25	235	0.25
	**Water Service	Diesel	12	235	0.20
B747-200F	**Aircraft Tractor Wide	Diesel	8	475	0.80
	**Cargo Loader Wide	Diesel	80	83	0.50
	**Cart	Diesel	10	25	0.50
	**GPU 28VDC	Diesel	40	71	0.75
	**Hydrant Truck Wide	Diesel	20	235	0.70
	**Lavatory Truck Wide	Diesel	25	235	0.25
	**Air Start 180 PPM	Diesel	7	425	0.75
B747-400	APU GTCP 660 (300 HP)		15	0	0.00
	**Aircraft Tractor Wide	Diesel	8	475	0.80
	**Baggage Tractor Wide	Gasoline	120	83	0.55
	**Belt Loader Wide	Gasoline	35	71	0.50
	**Cabin Service Truck Wide	Gasoline	35	260	0.53
	**Cargo Loader Wide	Diesel	80	83	0.50
	**Catering Truck Wide	Gasoline	20	210	0.53
	**Hydrant Truck Wide	Diesel	20	235	0.70
	**Lavatory Truck Wide	Diesel	25	235	0.25
	**Water Service	Diesel	12	235	0.20
B747-400F	**Air Start 180 PPM	Diesel	7	425	0.75
	**Aircraft Tractor Wide	Diesel	8	475	0.80
	**Cargo Loader Wide	Diesel	80	83	0.50
	**Cart	Diesel	10	25	0.50
	**GPU 28VDC	Diesel	40	71	0.75
	**Hydrant Truck Wide	Diesel	20	235	0.70
	**Lavatory Truck Wide	Diesel	25	235	0.25

Table K-11 (5 of 10)

Aircraft Ground Support Equipment and Auxiliary Power Unit Assignments – Project (2005)

EDMS Aircraft Type	GSE/APU Type	Fuel Type	Operating Time (Minutes/LTO)	Brake Horsepower	Load Factor
B747-SP	APU GTCP 660 (300 HP)		15	0	0.00
	**Aircraft Tractor Wide	Diesel	8	475	0.80
	**Baggage Tractor Wide	Diesel	120	83	0.55
	**Belt Loader Wide	Gasoline	35	71	0.50
	**Cabin Service Truck Wide	Gasoline	35	260	0.53
	**Cargo Loader Wide	Gasoline	80	83	0.50
	**Catering Truck Wide	Gasoline	20	210	0.53
	**Hydrant Truck Wide	Diesel	20	235	0.70
	**Lavatory Truck Wide	Diesel	25	235	0.25
	**Water Service	Propane	12	235	0.20
B757-200	APU GTCP 85 (200 HP)		15	0	0.00
	**Aircraft Tractor Narrow	Diesel	8	270	0.95
	**Baggage Tractor Narrow	Gasoline	75	83	0.55
	**Belt Loader Narrow	Gasoline	48	71	0.50
	**Cabin Service Truck Narrow	Gasoline	20	260	0.53
	**Catering Truck Narrow	Gasoline	15	210	0.53
	**Hydrant Truck Narrow	Diesel	12	235	0.70
	**Lavatory Truck Narrow	Diesel	15	56	0.25
B757-200F	**Aircraft Tractor Narrow	Diesel	8	270	0.95
	**Cargo Loader Narrow	Gasoline	40	80	0.50
	**GPU 28VDC	Diesel	40	71	0.75
	**Hydrant Truck Narrow	Diesel	12	235	0.70
	**Lavatory Truck Narrow	Diesel	15	56	0.25
	**Air Start 180 PPM	Diesel	7	425	0.75
B767-200	APU GTCP 660 (300 HP)		15	0	0.00
	**Aircraft Tractor Wide	Diesel	8	475	0.80
	**Baggage Tractor Wide	Propane	120	83	0.55
	**Belt Loader Wide	Propane	35	71	0.50
	**Cabin Service Truck Wide	Gasoline	35	260	0.53
	**Cargo Loader Wide	Diesel	80	83	0.50
	**Catering Truck Wide	Gasoline	20	210	0.53
	**Hydrant Truck Wide	Diesel	20	235	0.70
	**Lavatory Truck Wide	Diesel	25	235	0.25
B767-200ER	**Air Start 180 PPM	Diesel	7	425	0.75
	**Aircraft Tractor Wide	Diesel	8	475	0.80
	**Cargo Loader Wide	Diesel	80	83	0.50
	**Cart	Diesel	10	25	0.50
	**GPU 28VDC	Diesel	40	71	0.75
	**Hydrant Truck Wide	Diesel	20	235	0.70
	**Lavatory Truck Wide	Diesel	25	235	0.25

Table K-11 (6 of 10)

Aircraft Ground Support Equipment and Auxiliary Power Unit Assignments – Project (2005)

EDMS Aircraft Type	GSE/APU Type	Fuel Type	Operating Time (Minutes/LTO)	Brake Horsepower	Load Factor
B767-300	APU GTCP 660 (300 HP)		15	0	0.00
	**Baggage Tractor Wide	Propane	120	83	0.55
	**Belt Loader Wide	Propane	35	71	0.50
	**Cabin Service Truck Wide	Gasoline	35	260	0.53
	**Cargo Loader Wide	Gasoline	80	83	0.50
	**Catering Truck Wide	Gasoline	20	210	0.53
	**Hydrant Truck Wide	Diesel	20	235	0.70
	**Lavatory Truck Wide	Diesel	25	235	0.25
	**Water Service	Diesel	12	235	0.20
B777-200	APU GTCP 660 (300 HP)		15	0	0.00
	**Aircraft Tractor Wide	Diesel	8	475	0.80
	**Baggage Tractor Wide	Propane	120	83	0.55
	**Belt Loader Wide	Propane	35	71	0.50
	**Cabin Service Truck Wide	Gasoline	35	260	0.53
	**Cargo Loader Wide	Diesel	80	83	0.50
	**Catering Truck Wide	Gasoline	20	210	0.53
	**Hydrant Truck Wide	Gasoline	20	260	0.70
	**Lavatory Truck Wide	Diesel	25	235	0.25
	**Water Service	Diesel	12	235	0.20
BH-1900	APU -NONE-		15	0	0.00
	**Aircraft Tractor Narrow	Gasoline	8	270	0.95
	**Fuel Truck	Gasoline	20	200	0.70
	**GPU 28VDC	Diesel	40	71	0.75
	**Aircraft Tractor Narrow	Gasoline	8	270	0.95
	**Fuel Truck	Gasoline	20	200	0.70
BH-1900C	**GPU 28VDC	Diesel	40	71	0.75
	**Aircraft Tractor Narrow	Propane	8	270	0.95
	**Fuel Truck	Propane	20	200	0.70
Dash 7	APU GTCP 36 (80HP)		15	0	0.00
	**Baggage Tractor Narrow	Diesel	75	83	0.55
	**Cabin Service Truck Narrow	Gasoline	20	260	0.53
	**Catering Truck Narrow	Gasoline	15	210	0.53
	**Hydrant Truck Narrow	Gasoline	12	260	0.70
	**Lavatory Truck Narrow	Gasoline	15	97	0.25

Table K-11 (7 of 10)

Aircraft Ground Support Equipment and Auxiliary Power Unit Assignments – Project (2005)

EDMS Aircraft Type	GSE/APU Type	Fuel Type	Operating Time (Minutes/LTO)	Brake Horsepower	Load Factor
DC10-30	APU GTCP 660 (300 HP)		15	0	0.00
	**Aircraft Tractor Wide	Diesel	8	475	0.80
	**Baggage Tractor Wide	Diesel	120	83	0.55
	**Cabin Service Truck Wide	Gasoline	35	260	0.53
	**Cargo Loader Wide	Diesel	80	83	0.50
	**Catering Truck Wide	Gasoline	20	210	0.53
	**Hydrant Truck Wide	Gasoline	20	260	0.70
	**Lavatory Truck Wide	Diesel	25	235	0.25
	**Water Service	Diesel	12	235	0.20
DC10-30F	**Air Start 180 PPM	Diesel	7	425	0.75
	**Aircraft Tractor Wide	Diesel	8	475	0.80
	**Cargo Loader Wide	Diesel	80	83	0.50
	**Cart	Diesel	10	25	0.50
	**GPU 28VDC	Diesel	40	71	0.75
	**Hydrant Truck Wide	Diesel	20	235	0.70
	**Lavatory Truck Wide	Diesel	25	235	0.25
DC9-50	**Aircraft Tractor Narrow	Gasoline	8	270	0.95
	**Baggage Tractor Narrow	Diesel	75	83	0.55
	**Cabin Service Truck Narrow	Gasoline	20	260	0.53
	**Catering Truck Narrow	Gasoline	15	210	0.53
	**Hydrant Truck Narrow	Propane	12	360	0.70
	**Lavatory Truck Narrow	Gasoline	15	97	0.25
EMB-110KQ1	Service Truck	Diesel	15	235	0.20
	Lavatory Truck Narrow Body	Diesel	15	56	0.25
	Fuel Truck MidSize 3-6 000 g	Diesel	20	175	0.25
	Catering Truck Commuter/Reg	Diesel	10	80	0.53
	Belt Loader Commuter	Gasoline	30	107	0.50
	Baggage Tractor Commuter	Gasoline	35	107	0.55
	Aircraft Tractor Commuter/Reg	Diesel	5	86	0.80
	Ground Power Unit 28VDC	Diesel	40	71	0.75
	APU GTCP 36 (80HP)		15	0	0.00
EMB-120	APU GTCP 36 (80HP)		15	0	0.00
	**Aircraft Tractor Narrow	Diesel	8	270	0.95
	**Baggage Tractor Narrow	Diesel	75	83	0.55
	**Cabin Service Truck Narrow	Gasoline	20	260	0.53
	**Catering Truck Narrow	Gasoline	15	210	0.53
	**Hydrant Truck Narrow	Gasoline	12	260	0.70
	**Lavatory Truck Narrow	Diesel	15	56	0.25

Table K-11 (8 of 10)

Aircraft Ground Support Equipment and Auxiliary Power Unit Assignments – Project (2005)

EDMS Aircraft Type	GSE/APU Type	Fuel Type	Operating Time (Minutes/LTO)	Brake Horsepower	Load Factor
Fokker 100	APU GTCP 85 (200 HP)		15	0	0.00
	**Baggage Tractor Narrow	Diesel	75	83	0.55
	**Belt Loader Narrow	Diesel	48	71	0.50
	**Cabin Service Truck Narrow	Gasoline	20	260	0.53
	**Catering Truck Narrow	Gasoline	15	210	0.53
	**Hydrant Truck Narrow	Diesel	12	235	0.70
	**Lavatory Truck Narrow	Propane	15	82	0.70
Fokker 50	**Baggage Tractor Narrow	Diesel	75	83	0.55
	**Belt Loader Narrow	Propane	48	71	0.50
	**Cabin Service Truck Narrow	Gasoline	20	260	0.53
	**Catering Truck Narrow	Gasoline	15	210	0.53
	**Hydrant Truck Narrow	Gasoline	12	260	0.70
	**Lavatory Truck Narrow	Diesel	15	56	0.25
Fokker 70	APU GTCP 85 (200 HP)		15	0	0.00
	**Aircraft Tractor Narrow	Gasoline	8	270	0.95
	**Baggage Tractor Narrow	Natural Gas	75	83	0.55
	**Cabin Service Truck Narrow	Gasoline	20	260	0.53
	**Catering Truck Narrow	Gasoline	15	210	0.53
	**Hydrant Truck Narrow	Gasoline	12	260	0.70
	**Lavatory Truck Narrow	Diesel	15	56	0.25
Il-96-300	**Aircraft Tractor Wide	Propane	8	475	0.80
	**Baggage Tractor Wide	Gasoline	120	83	0.55
	**Belt Loader Wide	Propane	35	71	0.50
	**Cabin Service Truck Wide	Propane	35	210	0.53
	**Cargo Loader Wide	Propane	80	83	0.50
	**Catering Truck Wide	Propane	20	210	0.53
	**Hydrant Truck Wide	Gasoline	20	260	0.70
	**Lavatory Truck Wide	Diesel	25	235	0.25
	**Water Service	Gasoline	12	235	0.20
Jetstream 31	APU -NONE-		15	0	0.00
	**Aircraft Tractor Narrow	Diesel	8	270	0.95
	**Fuel Truck	Diesel	20	200	0.70
	**GPU 28VDC	Diesel	40	71	0.75
L-1011-500	APU GTCP 660 (300 HP)		15	0	0.00
	**Aircraft Tractor Wide	Propane	8	475	0.80
	**Baggage Tractor Wide	Diesel	120	83	0.55
	**Cabin Service Truck Wide	Propane	35	210	0.53
	**Cargo Loader Wide	Propane	80	83	0.50
	**Catering Truck Wide	Gasoline	20	210	0.53
	**Hydrant Truck Wide	Gasoline	20	260	0.70
	**Lavatory Truck Wide	Gasoline	25	260	0.25
	**Water Service	Diesel	12	235	0.20

Table K-11 (9 of 10)

Aircraft Ground Support Equipment and Auxiliary Power Unit Assignments – Project (2005)

EDMS Aircraft Type	GSE/APU Type	Fuel Type	Operating Time (Minutes/LTO)	Brake Horsepower	Load Factor
MD-11	APU GTCP 660 (300 HP)		15	0	0.00
	**Aircraft Tractor Wide	Diesel	8	475	0.80
	**Baggage Tractor Wide	Diesel	120	83	0.55
	**Belt Loader Wide	Diesel	35	71	0.50
	**Cabin Service Truck Wide	Gasoline	35	260	0.53
	**Cargo Loader Wide	Diesel	80	83	0.50
	**Catering Truck Wide	Propane	20	210	0.53
	**Hydrant Truck Wide	Gasoline	20	260	0.70
	**Lavatory Truck Wide	Diesel	25	235	0.25
	**Water Service	Gasoline	12	235	0.20
MD-11-11F	**Cargo Loader Wide	Diesel	80	83	0.50
	**Cart	Diesel	10	25	0.50
	**GPU 28VDC	Diesel	40	71	0.75
	**Hydrant Truck Wide	Diesel	20	235	0.70
	**Lavatory Truck Wide	Propane	25	360	0.70
	**Air Start 180 PPM	Diesel	7	425	0.75
MD-80	APU GTCP 85 (200 HP)		15	0	0.00
	**Aircraft Tractor Narrow	Diesel	8	270	0.95
	**Belt Loader Narrow	Diesel	48	71	0.50
	**Cabin Service Truck Narrow	Propane	20	210	0.53
	**Catering Truck Narrow	Propane	15	210	0.53
	**Hydrant Truck Narrow	Gasoline	12	260	0.70
	**Lavatory Truck Narrow	Diesel	15	56	0.25
MD-80-87	**Aircraft Tractor Narrow	Diesel	8	270	0.95
	**Baggage Tractor Narrow	Diesel	75	83	0.55
	**Belt Loader Narrow	Diesel	48	71	0.50
	**Cabin Service Truck Narrow	Gasoline	20	260	0.53
	**Catering Truck Narrow	Gasoline	15	210	0.53
	**Hydrant Truck Narrow	Gasoline	12	260	0.70
	**Lavatory Truck Narrow	Diesel	15	56	0.25
MD-90-10	APU GTCP 85 (200 HP)		15	0	0.00
	**Aircraft Tractor Narrow	Diesel	8	270	0.95
	**Belt Loader Narrow	Diesel	48	71	0.50
	**Cabin Service Truck Narrow	Propane	20	210	0.53
	**Catering Truck Narrow	Gasoline	15	210	0.53
	**Hydrant Truck Narrow	Gasoline	12	260	0.70
	**Lavatory Truck Narrow	Gasoline	15	97	0.25

Table K-11 (10 of 10)

Aircraft Ground Support Equipment and Auxiliary Power Unit Assignments – Project (2005)

EDMS Aircraft Type	GSE/APU Type	Fuel Type	Operating Time (Minutes/LTO)	Brake Horsepower	Load Factor
MD-95	APU GTCP 85 (200 HP)		15	0	0.00
	**Aircraft Tractor Narrow	Propane	8	270	0.95
	**Cabin Service Truck Narrow	Propane	20	210	0.53
	**Catering Truck Narrow	Propane	15	210	0.53
	**Hydrant Truck Narrow	Gasoline	12	260	0.70
	**Lavatory Truck Narrow	Propane	15	82	0.70
**SAAB2000	APU GTCP 36 (80HP)		15	0	0.00
	**Aircraft Tractor Narrow	Propane	8	270	0.95
	**Cabin Service Truck Narrow	Propane	20	210	0.53
	**Catering Truck Narrow	Propane	15	210	0.53
	**Hydrant Truck Narrow	Gasoline	12	260	0.70
	**Lavatory Truck Narrow	Gasoline	15	97	0.25
SF-340-A	APU GTCP 36 (80HP)		15	0	0.00
	**Aircraft Tractor Narrow	Diesel	8	270	0.95
	**Belt Loader Narrow	Diesel	48	71	0.50
	**Cabin Service Truck Narrow	Propane	20	210	0.53
	**Catering Truck Narrow	Propane	15	210	0.53
	**Hydrant Truck Narrow	Gasoline	12	260	0.70
	**Lavatory Truck Narrow	Gasoline	15	97	0.25
Shorts 360	APU GTCP 36 (80HP)		15	0	0.00
	**Aircraft Tractor Narrow	Diesel	8	270	0.95
	**Baggage Tractor Narrow	Diesel	75	83	0.55
	**Belt Loader Narrow	Diesel	48	71	0.50
	**Cabin Service Truck Narrow	Propane	20	210	0.53
	**Catering Truck Narrow	Propane	15	210	0.53
	**Hydrant Truck Narrow	Gasoline	12	260	0.70
	**Lavatory Truck Narrow	Gasoline	15	97	0.25
Swearingen Metro 2	APU GTCP 36 (80HP)		15	0	0.00
	**Aircraft Tractor Narrow	Diesel	8	270	0.95
	**Baggage Tractor Narrow	Diesel	75	83	0.55
	**Belt Loader Narrow	Diesel	48	71	0.50
	**Cabin Service Truck Narrow	Propane	20	210	0.53
	**Catering Truck Narrow	Propane	15	210	0.53
	**Hydrant Truck Narrow	Gasoline	12	260	0.70
	**Lavatory Truck Narrow	Gasoline	15	97	0.25

Notes: GSE = Ground Support Equipment.
APU = Auxiliary Power Unit.
LTO = Landing and takeoff. One LTO cycle equals two operations: a landing and a takeoff.
** User defined aircraft or user defined GSE in EDMS 4.2.1

Source: Emission and Dispersion Modeling System, Version 4.2.1. User created aircraft and GSE: PCR Services Corporation.
Prepared by: Ricondo & Associates, Inc.

This page intentionally left blank.

Appendix L Ambient Air Quality Human Health Risk Assessment

Prepared for:

Los Angeles World Airports

Prepared by:

Camp Dresser & McKee, Inc.

This page intentionally left blank.

TABLE OF CONTENTS

List of Tables

List of Attachments

L.1 Introduction

L.1.1 Purpose

This report presents the human health risk assessment (HHRA) for SAIP construction activities as well as changes in airport operations associated with the SAIP during construction compared to baseline (2003) conditions. The LAX Master Plan Final EIR[1] previously examined the incremental health risk impacts due to inhalation of toxic air contaminants (TACs[2]) from operational sources associated with four build alternatives and the No Action/No Project Alternative (see Technical Report 14a of the LAX Master Plan Final EIR). The incremental impacts were those impacts above the 1996 environmental baseline conditions used in that EIR. Because project level details were not available regarding construction phasing, the programmatic level LAX Master Plan Final EIR did not address health risk associated with construction activities of any of the individual LAX Master Plan components, including the South Airfield Improvement Project (SAIP), nor did it consider specific impacts associated with the closing of a runway during construction of the SAIP.

Total aircraft operations at the airport in 2003 were substantially lower than those in 1996 due to the impact of the events of September 11, 2001, and the subsequent economic slowdown. On the other hand, the operational levels assumed for the SAIP in 2005 are based on the original LAX Master Plan forecasts, with modification to account for the closure of one runway (7R-25L) during the SAIP construction period. **Table L-1** presents total aircraft operations forecasted in 2005 for the SAIP (three runways open) and for the LAX Master Plan (four runways open), as well as the actual 2003 and 1996 operations. As shown in Table L-1, the incremental operations for the SAIP HHRA are roughly an order of magnitude greater than the incremental operations assumed in the LAX Master Plan EIR. Therefore, additional analysis of health risks from TACs was performed to ensure full disclosure of the potential health impacts of the SAIP.

Table L-1

2005 Operations for SAIP and LAX Master Plan, and Corresponding Baseline Operations

	SAIP Operations		LAX Master Plan Operations	
	2003 Baseline	2005 SAIP	1996 Baseline	2005 NA/NP
Total Aircraft Operations	622,378	745,112	763,866	779,352
Increment Above Baseline	NA	122,734	NA	15,486

NA/NP = No Action/No Project Alternative
NA = Not applicable.

Sources: Federal Aviation Administration and City of Los Angeles, LAX Master Plan Draft EIS/EIR (January 2001), Vol. 1, Table 3-1, Page 3-14; LAWA at http://www.lawa.org/lax/tenYrSummary.cfm (accessed June 29, 2005).
Prepared by: CDM

In addition to the incremental changes between the SAIP project and the CEQA baseline, the aircraft operations forecasted for SAIP in 2005 are lower than those forecasted for the LAX Master Plan No Action/No Project Alternative in 2005. This is due to the proposed closure of Runway 7R-25L during the SAIP construction period. However, the closure of the runway would also cause the taxi/idle times to increase for the SAIP relative to the No Action/No Project Alternative in 2005

[1] City of Los Angeles, 2004. Los Angeles International Airport Proposed Master Plan Improvements, Final Environmental Impact Report, State Clearinghouse No. 1997061047, April.

[2] In the LAX Master Plan Final EIR, these were referred to as toxic air pollutants (TAPs). In this EIR, the term "toxic air contaminants," or TACs, is used to reflect California regulatory terminology.

(projected taxi/idle times are provided in Appendix K). Therefore, the project would have fewer operations but longer taxi/idle times than the No Action/No Project scenario. It is not known to what extent these two conditions would offset one another.

L.1.2 General Approach

As with the LAX Master Plan analysis, this HHRA consisted of two components: (1) estimation of emissions of TACs associated with the project, and subsequent dispersion of those emissions to downwind receptor locations; and (2) determination of incremental health risks associated with those emissions. Specifically, this HHRA estimated possible future emissions associated with the SAIP compared to the established baseline by either increasing or decreasing emission rate estimates from specific sources, based on projected changes in airport operations and activity at LAX during construction of the SAIP improvements (i.e., 2005). The baseline year for this analysis was 2003. Projected future emission rates from LAX sources were then used as inputs, along with meteorological and geographic information, to an air dispersion model. The model predicted possible future concentrations of TACs within the study area around the airport.

Subsequently, incremental human health risks that might be associated with inhalation of TACs, at locations where TAC concentrations were predicted, were estimated by first subtracting estimates of baseline concentrations of TACs at each location, then estimating possible human health risks of the resulting incremental concentrations using standard methods developed by the California Environmental Protection Agency (CalEPA) and the U.S. Environmental Protection Agency (USEPA), as described further below. Health impacts were estimated for both potential cancer risks and non-cancer health hazards.

Results of the analysis were interpreted by comparing incremental cancer risks and non-cancer hazards to regulatory thresholds. These comparisons were made for maximally exposed individuals (MEI) at locations where maximum concentrations of TACs were predicted by the air dispersion modeling, and for all modeled locations within the defined study area. An impact was considered significant if incremental risks or hazards to MEI exceeded regulatory thresholds.

Methods for estimating cumulative impacts followed the approach used for the LAX Master Plan Final EIR, including using data collected for and analyzed in the Multiple Air Toxics Exposure Study in the South Coast Air Basin (MATES-II) completed by the South Coast Air Quality Management District (SCAQMD) to evaluate cumulative cancer risks, and data presented in USEPA's National Air Toxics Assessment to evaluate cumulative chronic, non-cancer health hazards. For cumulative, acute risks, conservative (likely to overestimate) approximations of short-term concentrations were made using generic conversion factors and the annual average estimates of acrolein in air from USEPA. The estimates are subject to much uncertainty, as further described in Section 5, but can be used to provide a semi-quantitative evaluation of the possible range of cumulative impacts.

The methods for conducting a HHRA are presented in Section 2, TAC emission calculation approach and results and a discussion of the dispersion analysis are presented in Section 3, associated health risks are presented in Section 4, and uncertainties are discussed in Section 5.

L.2 Methodology

An HHRA was conducted based on incremental TAC emissions associated with SAIP operations and construction activities in 2005 versus those in the 2003 environmental baseline, as required under State of California statutes and regulations[3]. The HHRA was conducted in four steps as defined in CalEPA and USEPA guidance[4,5], consisting of:

- Identification of chemicals (in this case, TACs) that may be released in sufficient quantities to present a public health risk (Hazard Identification)
- Analysis of ways in which people might be exposed to chemicals (TACs) (Exposure Assessment)
- Evaluation of the toxicity of chemicals (TACs) that may present public health risks (Toxicity Assessment)
- Characterization of the magnitude and location of potential health risks for the exposed community (Risk Characterization)

Analyses for the SAIP Draft EIR address the following issues, and provide additional information on potential for human health impacts:

- Assessment of potential chronic (cancer and non-cancer) human health impacts due to release of TACs associated with the SAIP operations and construction activities, assuming that the exposure concentrations of TACs were constant over a 70-year period for residential receptors. Since the SAIP is expected to be completed in approximately two years, chronic health impacts are conservative and will substantially overestimate actual risk and hazards associated with the project.
- Evaluation of possible acute non-cancer hazards due to release of acrolein during airport operations and construction. Acute hazards are assessed only for the period of construction associated with the SAIP.
- Assessment of chronic (cancer and non-cancer) and acute risks from construction activities for determining the relative construction contribution to total SAIP risk levels.

---

[3] Air Toxics Hot Spots Information and Assessment Act of 1987. Health and Safety Code Section 44300 et seq.; California Environmental Protection Agency, Office of Environmental Health Hazard Assessment, Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments, October 3, 2003

[4] California Environmental Protection Agency, Office of Environmental Health Hazard Assessment, Air Toxics "Hot Spots" Program Risk Assessment Guidelines Part I: Technical Support Document for the Determination of Acute Reference Exposure Levels for Airborne Toxicants, March 1999; California Environmental Protection Agency, Office of Environmental Health Hazard Assessment, Air Toxic Hot Spots Program Risk Assessment Guidelines, Part IV. Technical Support Document for Exposure Assessment and Stochastic Analysis, September 2000; California Environmental Protection Agency, Office of Environmental Health Hazard Assessment, Air Toxics Hot Spots Program Risk Assessment Guidelines. Part III. The Determination of Chronic Reference Exposure Levels for Airborne Toxicants, February 23, 2000; California Environmental Protection Agency, Office of Environmental Health Hazard Assessment, Air Toxics Hot Spots Program Risk Assessment Guidelines. Part II. Technical Support Document for Describing Available Cancer Potency Factors, December 2002, updated August 2003; California Environmental Protection Agency, Office of Environmental Health Hazard Assessment, Air Toxics Hot Spots Program Risk Assessment Guidelines. The Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments, August 2003.

[5] U.S. Environmental Protection Agency, Office of Emergency and Remedial Response, Risk Assessment Guidance for Superfund, Vol. I, Human Health Evaluation Manual (Part A), Interim Final, EPA/540/1-89/002, December, 1989.

Conservative methods are used to estimate human health risks and hazards. That is, methods are used that are much more likely to overestimate than underestimate possible health risks. For example, risks are calculated for individuals at locations where TAC concentrations are predicted to be highest (maximally exposed individual, MEI). Further, these individuals are assumed to be exposed to TACs for almost all days of the year and for many years to maximize estimates of possible exposure. Resulting incremental risk estimates represent upper-bound predictions of exposure, and therefore health risk, which may be associated with living near, and breathing emissions from, LAX during and after implementation of the SAIP. By protecting hypothetical individuals that receive the highest exposures, the risk assessment will also be protective for actual members of the population near LAX that are not as highly exposed.

Generally, methods used in preparation of the assessment provided in the LAX Master Plan Final EIR, as described in Technical Reports 14a and S-9a of that EIR, were used in this analysis. The Final EIR concluded that emissions of 1,3-butadiene, benzene, formaldehyde, and acrolein from aircraft, and of diesel particulates ground support equipment as well as from trucks and construction equipment, are responsible for nearly all potential health risks posed by airport operations. Based on analysis of cumulative impacts, the LAX Master Plan Final EIR concluded that the airport is a relatively minor source of these TACs, and that improvements in airport operations as a result of implementing the LAX Master Plan, of which the SAIP is a part, could reduce the overall contribution of the airport to TAC emissions below that anticipated in the absence of improvements at the airport, i.e., the No Action/No Project Alternative.

L.2.1 Selection of TACs of Concern

The TACs of concern used in this HHRA were based on the list developed for the LAX Master Plan Final EIR, as described in Technical Report 14a, Section 3, of that EIR. TACs of concern for the LAX Master Plan were selected based on identification of chemicals as TACs in federal and state regulations, current or future presence in emissions at LAX, magnitude of possible emissions, and toxicity. Since the release of the LAX Master Plan Final EIR, current technical literature has not indicated a change in the selection process, therefore the previous selection process remains valid.

However, to focus the SAIP HHRA analysis on those TACs most likely to produce substantial incremental risks, the LAX Master Plan Final EIR[6], Oakland International Airport – Airport Development Program (ADP) Draft Supplemental EIR[7], and the Civilian Reuse of MCAS El Toro Draft EIR, Draft Supplemental Analysis[8] were reviewed. These three documents represent the most recent EIRs conducted in California that assessed potential human health risk from airport operations.

The LAX Master Plan Final EIR, Technical Report 14a, Table 9, provided cancer risk for the No Action/No Project Alternative in 2005. The residential cancer risks were driven by diesel particulate matter (70 to 72 percent), 1,3-butadiene (15 percent), benzene (10 to 11 percent), and formaldehyde

---

[6] City of Los Angeles, 2004. <u>Los Angeles International Airport Proposed Master Plan Improvements, Final Environmental Impact Report</u>, State Clearinghouse No. 1997061047, April.

[7] Port of Oakland 2003. <u>Draft Oakland International Airport – Airport Development Program (ADP) Supplemental Environmental Impact Report</u>, State Clearinghouse No. 1994113039, September.

[8] County of Orange 2001. <u>Draft Environmental Impact Report No. 573 for the Civilian Reuse of MCAS El Toro and the Airport System Master Plan for John Wayne Airport and Proposed Orange County International Airport, Draft Supplemental Analysis</u>, State Clearinghouse No. 98101053, April.

(2 to 3 percent). The non-cancer chronic health hazards were driven by acrolein (70 to 100 percent), diesel particulate matter (up to 2 percent), and acetaldehyde, naphthalene, and manganese (up to 1 percent each).

The Oakland International Airport ADP Draft Supplemental EIR, Appendix C, indicated that diesel particulate matter, 1,3-butadiene, benzene, acrolein, and formaldehyde were the drivers of cancer and non-cancer risks. Diesel particulate matter accounted for 54 to 60 percent and 1,3-butadiene accounted for 23 percent of the cancer risk. Acrolein accounted for approximately 75 percent of the chronic non-cancer risks, with some contribution from formaldehyde. Acrolein also accounted for most of the acute risks.

The MCAS El Toro Draft Supplemental Analysis, Section 2.17, provided cancer and non-cancer risks for the proposed Orange County International Airport. The analysis indicated that diesel particulate matter contributed approximately 86 percent to the cancer risk, with various VOCs contributing 9 percent and metals contributing 5 percent. The non-cancer risks were primarily attributable to acrolein. The report also indicated that diesel particulate matter and chromium were the primary drivers of cancer risk associated with operations at John Wayne Airport.

Based on this review and the California Air Resources Board (CARB)-preferred aircraft speciation profile (see discussion in Section L.3.1.2.1 of this Appendix), the original list of TACs included in the detailed HHRA prepared for the LAX Master Plan Final EIR was modified for the SAIP HHRA. Some of the pollutants of concern that had been identified for the LAX Master Plan HHRA were eliminated (polyaromatic hydrocarbons (PAHs) and 2,3,7,8-TCDD) while others were added (copper and zinc), based on more recent speciation profiles. The final list of TACs of concern is presented in **Table L-2**.

Table L-2

Toxic Air Contaminants of Concern for the SAIP

Toxic Air Contaminant	Type
Acetaldehyde	VOC
Acrolein	VOC
Benzene	VOC
1,3-Butadiene	VOC
Formaldehyde	VOC
Toluene	VOC
Xylene (total)	VOC
Napthalene	VOC/PAH
Arsenic	PM-Metal
Beryllium	PM-Metal
Cadmium	PM-Metal
Chromium VI	PM-Metal
Copper	PM-Metal
Manganese	PM-Metal
Nickel	PM-Metal
Zinc	PM-Metal
Diesel PM	Diesel Exhaust

Source: CDM, 2005
Prepared by: CDM

L.2.2 Exposure Assessment

The exposure assessment examines inhalation exposures to TACs of concern for several populations, consisting of on-site workers, off-site workers, resident children, school children, and resident adults. In addition, the exposure assessment includes analyses of cancer risks and non-cancer hazards, both chronic and acute.

An exposure duration of 70 years (a lifetime) was used for consistency with SCAQMD guidelines and to provide an upper bound estimate on possible cancer risks. The exposure assessment for the SAIP Draft EIR differs from the LAX Master Plan Final EIR in that incremental risks are based on a comparison to 2003 baseline conditions instead of 1996 baseline conditions, as noted in the introduction to this Appendix. Modeled concentrations were then used to estimate incremental risks and hazards for the SAIP in 2005. Incremental risks serve as the basis of the significance determinations.

L.2.3 Toxicity Assessment

Risks from exposure to TACs are calculated by combining estimates of potential exposure with toxicity criteria specific to each chemical. A toxicity assessment for TACs of concern was conducted for the LAX Master Plan Final EIR, as described in Technical Report 14a of that EIR. The conclusions of that assessment have not changed materially. As both the California Office of Environmental Health Hazard Assessment (OEHHA) and USEPA are continually updating toxicity values as new studies are completed, all toxicity information provided in Technical Report 14a was reviewed and updated as appropriate. OEHHA and USEPA toxicity values were used for chronic risk and hazard calculations. The acute reference exposure levels (RELs) developed by the State of California were used in the characterization of potential acute hazards associated with the SAIP.

L.2.4 Risk Characterization

Cancer risks are estimated by multiplying exposure estimates for carcinogenic chemicals by corresponding cancer slope factors. The result is a risk estimate expressed as the odds of developing cancer. Commonly, risks (or odds) of developing cancer of one to ten in one million (1×10^{-6} to 10×10^{-6}) or less are considered *de minimis*[9]. Higher risks may be deemed significant in some instances.

Non-cancer risk estimates are calculated by dividing exposure estimates by reference doses. Reference doses are estimates of highest exposure levels that would not cause adverse health effects even if exposures continue over a lifetime. The ratio of exposure to reference dose is termed the hazard quotient (HQ). A HQ greater than one indicates an exposure greater than that considered safe. Risks or odds of adverse effects cannot be estimated using references doses. However, because reference doses are developed in a conservative fashion, HQs only slightly higher than one are generally accepted as being associated with low risks (or even no risk) of adverse effects, and that potential for adverse effects increases as the HQ gets larger.

Impacts of exposure to multiple chemicals are accounted for by adding cancer risk estimates for exposure to all carcinogenic chemicals, and by adding estimated HQs for non-carcinogenic chemicals that affect the same target organ or tissue in the body. Addition of HQs for TACs that produce effects in similar organs and tissues results in a Hazard Index (HI) that reflects possible total hazards. Several TACs have effects on the respiratory system including acetaldehyde, acrolein, formaldehyde,

[9] USEPA. 1991. Role of the Baseline Risk Assessment in Superfund Remedy Selection Decisions. OSWER Memorandum from Don R. Clay. April 22.

xylenes, and diesel particulates. Additive exposure to these chemicals from the SAIP accounts for essentially all potential non-cancer hazards. Therefore, the only HI calculated is that for the respiratory system.

L.3 TAC Emissions and Dispersion

L.3.1 TAC Emissions

Both organic and particulate-bound TACs are analyzed in this HHRA. TACs are constituents of either VOC or PM_{10}. The emissions of organic TACs were developed from the VOC emission inventories for the same sources analyzed in Section 4.3 of this EIR, and emissions of particulate-bound TACs were developed from the PM_{10} emission inventories. Speciation profiles[10] for VOC and PM_{10} emissions from individual source types, primarily developed by CARB, were used to calculate TAC emissions[11,12]. The TAC emissions from both construction activities and operational sources were included.

L.3.1.1 Construction Sources

On-site construction sources of TAC emissions include: (1) off-road heavy duty construction equipment; (2) on-road equipment and vehicles; (3) generators; (4) and construction material (e.g., VOCs from striping and asphalt paving). The construction schedule combined with the VOC and PM_{10} pollutant emissions inventory prepared for the SAIP were the basis for development of the TAC emissions inventory. Detailed calculations for the SAIP construction VOC and PM_{10} pollutant emissions inventory are provided in Section K.1 of Appendix K and Attachment 1 of this Appendix. Long-term exposure was evaluated using the average annual daily emissions and short-term exposure was evaluated using the peak daily emissions over the construction period. The emissions inventory was calculated for the peak 12-month period of construction.

L.3.1.1.1 Off-Road Construction Equipment Emissions

Examples of off-road construction equipment include dozers, loaders, sweepers and other heavy-duty construction equipment that do not travel on roadways. Off-road equipment types, fuel and horsepower ratings data were correlated with equipment types from the Caterpillar Performance Handbook[13] and the National Construction Estimator[14]. Emission rates were adjusted using load factors from Table A9-8-D of the SCAQMD CEQA Air Quality Handbook[15]. Usage factors developed for off-road equipment were based on the assumption that they would be operated at their rated horsepower and load factor for an average of 50 minutes per hour (50/60=0.83), to account for breaks and lunch during a typical workday. Off-road construction equipment data are presented in Appendix K.

---

[10] Speciation profiles provide estimates of the chemical composition of emissions, and are used in the emission inventory and air quality models. CARB maintains and updates estimates of the chemical composition and size fractions of PM_{10} and the chemical composition and reactive fractions of VOC, for a variety of emission source categories. Speciation profiles are used to provide estimates of TAC emissions.

[11] California Air Resources Board 2002. California Emission Inventory and Reporting System (CEIDARS) - Particulate Matter (PM) Speciation Profiles, http://www.arb.ca.gov/ei/speciate/PMPROF_09_27_02.xls.

[12] California Air Resources Board 2003a. Draft California Emission Inventory Development and Reporting System (CEIDARS) – ARB Organic Gas Speciation Profiles, http://www.arb.ca.gov/ei/speciate/ORGPROF_03_19_03.xls.

[13] Caterpillar, Caterpillar Performance Handbook, 30th Edition, October 1999.

[14] Ogershok, D., Editor, National Construction Estimator, 49th Edition, Craftsman Book Co., 2001.

[15] South Coast Air Quality Management District, CEQA Air Quality Handbook, 1993.

Combustion emission factors for diesel-powered engines were developed using the CARB OFFROAD Model[16]. The emission factors used to estimate emissions for off-road construction equipment are presented in Appendix K.

The CalEPA's Office of Environmental Health Hazard Assessment (OEHHA) has identified diesel exhaust as a chronic and carcinogenic toxic air contaminant (TAC); however, no risk exposure factors have been identified for acute exposure to diesel exhaust. An evaluation of available CARB speciation profiles was conducted and the most representative speciation profiles were selected to support the estimate of TACs. As a result, the CARB organic speciation profile 818 (Farm Equipment-Diesel) and particulate matter speciation profile 425 (Diesel Vehicle Exhaust) were used to account for constituents of diesel exhaust that may result in acute air toxic impacts[17,18]. Chronic and carcinogenic risk factors for diesel exhaust (i.e., diesel particulate) were consistent with referenced factors provided in OEHHA's Toxicity Criteria Database[19].

L.3.1.1.2 On-Road On-Site Construction Equipment Emissions

Exhaust emissions from on-road on-site sources were calculated using emission factors developed with the CARB emission factor model EMFAC2002, Version 2.2.[20] This model reflects CARB's current understanding of how vehicles travel and how much they pollute. The EMFAC model calculates emission factors for all vehicles, such as passenger cars to heavy-duty trucks, based on vehicle class, vehicle fleet mix, and vehicle population for geographic areas. EMFAC2002 was used to generate emission factors for each vehicle class in grams per unit (e.g., hour, mile or trip) for PM_{10} and VOC. The emission factors, vehicle substitutions, average assumed speeds and other data used to estimate emissions for on-road construction-related vehicles are presented in Appendix K.

An evaluation of available CARB speciation profiles was conducted and the most representative speciation profiles were selected to support the estimate of TACs from on-road on-site construction equipment. As a result, CARB organic speciation profile 442 (Gasoline - Catalyst - Stabilized Exhaust - ARB IUS Summer 2004) and particulate matter speciation profile 400 (Gasoline Vehicles-Catalyst) were used to account for constituents of gasoline exhaust that may result in acute, chronic, and carcinogenic TAC impacts[21,22]. Individual pollutant risk factors were consistent with referenced factors provided in OEHHA's Toxicity Criteria Database[23].

---

[16] California Air Resources Board, Emission Inventory of Off-Road Large Compression-Ignited Engines (>25 HP) Using the New Offroad Emissions Model (Mailout MSC #99-32), March 2003, http://www.arb.ca.gov/msei/msei.htm.

[17] California Air Resources Board 2002. California Emission Inventory and Reporting System (CEIDARS) - Particulate Matter (PM) Speciation Profiles, http://www.arb.ca.gov/ei/speciate/PMPROF_09_27_02.xls.

[18] California Air Resources Board 2003a. Draft California Emission Inventory Development and Reporting System (CEIDARS) – ARB Organic Gas Speciation Profiles, http://www.arb.ca.gov/ei/speciate/ORGPROF_03_19_03.xls.

[19] California Environmental Protection Agency, Office of Environmental Health Hazard Assessment, OEHHA Toxicity Criteria Database, September 24, 2004, http://www.oehha.ca.gov/risk/ChemicalDB/index.asp.

[20] California Air Resources Board, Research Division, EMFAC 2002 On-Road Emissions Inventory Estimation Model, Version 2.2, April 2003.

[21] California Air Resources Board 2002. California Emission Inventory and Reporting System (CEIDARS) - Particulate Matter (PM) Speciation Profiles, http://www.arb.ca.gov/ei/speciate/PMPROF_09_27_02.xls.

[22] California Air Resources Board 2003a. Draft California Emission Inventory Development and Reporting System (CEIDARS) – ARB Organic Gas Speciation Profiles, http://www.arb.ca.gov/ei/speciate/ORGPROF_03_19_03.xls.

[23] California Environmental Protection Agency, Office of Environmental Health Hazard Assessment, OEHHA Toxicity Criteria Database, September 24, 2004, http://www.oehha.ca.gov/risk/ChemicalDB/index.asp.

L.3.1.1.3 Generators

As with off-road construction equipment, emissions from diesel-powered generators were calculated using the CARB OFFROAD Model. Brake horsepower and fuel consumption estimates were based on data contained in the SCAQMD's Air Quality Handbook and information obtained from manufacturers of the construction equipment. The CARB organic speciation profile 818 (Farm Equipment-Diesel) and particulate matter speciation profile 425 (Diesel Vehicle Exhaust) were used to account for constituents of diesel exhaust that may result in acute air toxic impacts. Chronic and carcinogenic risk factors for diesel exhaust (i.e., diesel particulate) were consistent with referenced factors provided in OEHHA's Toxicity Criteria Database[24].

L.3.1.1.4 Construction Materials

Asphalt paving operations can be a source of VOC emissions. VOC emissions are created by the evaporation of the petroleum distillate solvent, or diluent, used to liquefy asphalt cement. Asphalt paving emissions associated with the SAIP were calculated using the SCAQMD recommended CARB URBEMIS2002 model[25] and based on the expected SAIP asphalt paving activity. Information regarding maximum daily acreage and total acreage of asphalt paving was used to calculate maximum daily and annual VOC emissions, respectively.

Architectural coating (i.e., striping paint and metal surface primer and topcoat paint) operations can be a source of VOC emissions. VOC emissions are created by the evaporation loss during application of architectural coatings. Emissions were calculated using a mass balance approach by determining the percent of VOC per gallon of coating applied. Information regarding maximum daily gallons of coatings and total amount of coating required for the SAIP were used to calculate maximum daily and annual VOC emissions, respectively.

Material safety data sheets (MSDSs) for asphalt paving and architectural coatings were used to develop air toxics speciation profile. MSDSs provide the necessary information to calculate VOC emissions (i.e., specific gravity, percent pounds of VOC per gallon, and percentage of individual constituents). Individual pollutant risk factors were consistent with referenced factors provided in OEHHA's Toxicity Criteria Database[26].

The construction annual average TAC emissions inventories are presented in **Table L-3,** and the construction peak daily TAC emissions inventories are presented in **Table L-4**. Detailed calculations are provided in **Attachment 1** of this Appendix. Note that construction-related commitments and mitigation measures for the LAX Master Plan applicable to the SAIP were considered in the emissions inventory as part of the project. The measures include emulsified diesel fuel, particulate traps, and injection timing retarding for off-road equipment engines; and electricity supplied by power poles, emulsified diesel fuel, and particulate traps for the diesel generators. Specific emission reductions for construction-related mitigation measures associated with LAX Master Plan mitigation measure MM-AQ-2 that were assumed to be in place during SAIP construction are shown in Table 4.3-8 of the SAIP Draft EIR.

[24] California Environmental Protection Agency, Office of Environmental Health Hazard Assessment, OEHHA Toxicity Criteria Database, September 24, 2004, http://www.oehha.ca.gov/risk/ChemicalDB/index.asp.
[25] CARB, URBEMIS2002 for Windows with Enhanced Construction Module Version 8.7 (Emissions Estimation for Land Use Development Projects), April 2005.
[26] California Environmental Protection Agency, Office of Environmental Health Hazard Assessment, OEHHA Toxicity Criteria Database, September 24, 2004, http://www.oehha.ca.gov/risk/ChemicalDB/index.asp.

Table L-3

Annual Average SAIP Construction Source TAC Emissions in 2005

Source	Annual Emissions[1/] (tons/yr) ROC	Annual Emissions[1/] (tons/yr) PM_{10}[2/]	Avg Daily Emissions[1/,3/] (lbs/day) ROC	Avg Daily Emissions[1/,3/] (lbs/day) PM_{10}[2/]
Off-Road Equipment-Diesel[4/]	6.14	0.42	40.91	2.82
On-Road Equipment:				
Diesel[4/]	1.78	0.86	11.84	5.77
Gasoline[4/]	1.81	0.10	12.07	0.67
Generators[4/]	3.32	0.50	22.16	3.34
Total Project[5/]	13.05	1.89	86.98	12.59

Notes:

ROC = Reactive organic compounds, assumed to be equivalent to volatile organic compounds (VOC).

1/ Assumes LAX Master Plan Final EIR air quality mitigation measures for construction are implemented.

2/ PM_{10} represents combustion PM_{10} only

3/ Average daily emissions equal annual emissions divided by 300 days (25 days per month x 12 months per year).

4/ Emissions estimates use emission factors from CARB OFFROAD Model, Year 2005 and EMFAC2002, as obtained from the LAX Master Plan Final EIR prepared by CDM.

5/ Totals may not add exactly due to rounding.

Source: PCR Services Corporation, 2005
Prepared by: CDM

Table L-4

Peak Daily Construction Source TAC Emissions

Source	Peak Day Emissions[1/,2/] (tons/day) ROC	Peak Day Emissions[1/,2/] (tons/day) PM_{10}[3/]	Peak Day Emissions[1/,2/] (lbs/day) ROC	Peak Day Emissions[1/,2/] (lbs/day) PM_{10}[3/]
Off-Road Equipment-Diesel[4/]	0.049	0.004	97.26	7.42
On-Road Equipment:				
Diesel[4/]	0.018	0.107	36.01	213.99
Gasoline[4/]	0.008	0.003	16.36	5.23
Generators[4/]	0.011	0.002	22.16	3.34
Total Project[5/]	0.086	0.115	171.79	229.97

Notes:

ROC = Reactive organic compounds, assumed to be equivalent to volatile organic compounds (VOC).

1/ Assumes LAX Master Plan Final EIR air quality mitigation measures for construction are implemented.

2/ Peak daily emissions are assumed to occur during 3rd Quarter of construction schedule because that was the peak quarter for construction activity and emissions.

3/ PM10 represents combustion PM_{10} only.

4/ Emissions estimates use emission factors from CARB OFFROAD Model, Year 2005 and EMFAC2002, as obtained from the LAX Master Plan Final EIR prepared by CDM.

5/ Totals may not add exactly due to rounding.

Source: PCR Services Corporation, 2005
Prepared by: CDM

L.3.1.2 Operational Sources

The criteria pollutant emissions inventory prepared for the SAIP was used as the basis for development of the TAC emissions inventory for 2005. Detailed calculations for the SAIP operational criteria pollutant emissions inventory are provided in Appendix K of the SAIP Draft EIR.

On-site operational sources of TAC emissions include: (1) aircraft; (2) ground support equipment (GSE); (3) ground access vehicles (GAV) on airport roadways and in airport parking lots; and (4) stationary sources (e.g., power plants, fuel tanks, maintenance and surface coating facilities and other miscellaneous sources).

Summaries of operational TAC emissions are presented in **Table L-5** for the 2003 Baseline and 2005 SAIP conditions. The breakdown of TAC emission contributions by the source groups mentioned above is presented in the following subsections.

L.3.1.2.1 Aircraft

The aircraft hydrocarbon (HC) emissions calculated by EDMS in the criteria pollutant emissions inventory form the basis for the organic TAC emissions from aircraft engines. The HC emissions are converted to TAC emissions using mode-specific aircraft TAC speciation profiles. The aircraft speciation profiles developed for the LAX Master Plan Final EIR were based on four aircraft engine source test reports[27,28,29,30]. The Oakland International Airport ADP Draft Supplemental EIR[31] presented aircraft speciation profiles based on these four reports plus a more recent test report covering a large number of aircraft engines[32]. The mode-specific speciation profiles presented in the Oakland International Airport ADP Draft Supplemental EIR are considered by CARB to be the most appropriate for commercial airports at this time[33]. These TAC weight fractions per mass of HC (speciation profiles) are summarized in **Table L-6**. The metal TAC emissions from aircraft were calculated from metal content in Jet A fuel[34] and the total Jet A fuel combusted in each operating mode. The resulting metal emissions were divided by the total HC emissions to obtain each metal TAC emission factor in pound (lb) per lb of HC, and are included in Table L-6. The TAC emissions

---

[27] Spicer, C.W., M.W. Holdren, T.F. Lyon, and R.M. Riggin. 1984. "Composition and Photochemical Reactivity of Turbine Engine Exhaust," ESL-TR-84-28, Engineering and Services Laboratory, Tyndall Air Force Base, FL. September.

[28] Spicer, C.W., M.W. Holdren, S.E. Miller, D.L. Smith, R.N. Smith, M.R. Kuhlman, D.P. Hughes. 1987. "Aircraft Emissions Characterization: TF41-A2, TF30-P103, and TF30-P109 Engines," ESL-TR-87-27, Engineering and Services Laboratory, Tyndall Air Force Base, FL. December.

[29] Spicer, C.W., M.W. Holdren, S.E. Miller, D.L. Smith, R.N. Smith, D.P. Hughes. 1988. "Aircraft Emissions Characterization," ESL-TR-87-63, Engineering and Services Laboratory, Tyndall Air Force Base, FL. March.

[30] Spicer, C.W., M.W. Holdren, D.L. Smith, S.E. Miller, R.N. Smith, D.P. Hughes. 1990. "Aircraft Emissions Characterization: F101 and F110 Engines," ESL-TR-89-13, Engineering and Services Laboratory, Tyndall Air Force Base, FL. March.

[31] Port of Oakland 2003. Draft Oakland International Airport – Airport Development Program (ADP) Supplemental Environmental Impact Report, State Clearinghouse No. 1994113039, September.

[32] Gerstle, T., P. Virag, M. Wade, and L. Kimm, Major USAF. 1999. "Aircraft Engine and Auxiliary Power Unit Testing: Volume 2, Detailed Sampling Approach and Results," IERA-RS-BR-TR-1999-0006-Vol.2, Institute for Environment, Safety, and Occupational Health Risk Analysis, Brooks Air Force Base, TX. March.

[33] California Air Resources Board 2005. Personal communication from G. Honcoop (CARB) to J. Pehrson (CDM), June 23.

[34] Shumway, L.A. 2000. Trace Element and Polycyclic Aromatic Hydrocarbon Analyses of Jet Engine Fuels: Jet A, JP-5, and JP-8, Technical Report 1845, U.S. Navy, SPAWAR Systems Center, San Diego, CA. December.

from aircraft in the 2003 Baseline and 2005 SAIP project scenarios, using these speciation profiles are presented in **Table L-7 and L-8**, respectively.

Table L-5

Summary 2003 Baseline and 2005 SAIP TAC Emissions (tons/year)

Toxic Air Contaminant	2003 Baseline	2005 SAIP
Acetaldehyde	7.582	15.88
Acrolein	3.681	7.910
Benzene	20.66	30.28
1,3-Butadiene	8.082	15.44
Formaldehyde	43.10	92.85
Toluene	36.17	45.82
Xylene (total)	23.63	30.03
Napthalene	1.763	3.753
Arsenic	0	0
Beryllium	0	0
Cadmium	0	0
Chromium VI	0.001962	0.004694
Copper	0.2460	0.2647
Manganese	0.2461	0.2648
Nickel	0.2456	0.2638
Zinc	0.2456	0.2638
Diesel PM	30.98	39.44

Source: CDM, 2005
Prepared by: CDM

Table L-6

TAC Weight Fractions (lb/lb) in Aircraft HC Emissions by Mode

Toxic Air Contaminant	Aircraft Operating Mode			
	Taxi/Idle	Approach	Climbout	Takeoff
Acetaldehyde	0.0153	0.0157	0.0197	0.0121
Acrolein	0.00792	0.00488	0.00513	0.00485
Benzene	0.0159	0.0154	0.0139	0.00755
1,3-Butadiene	0.0135	0.00712	0.00222	0.0103
Formaldehyde	0.0928	0.112	0.0973	0.04050
Toluene	0.0137	0.00798	0.00539	0.00503
Xylene (total)	0.00990	0.00727	0.00656	0.00729
Napthalene	0.00369	0.00215	0.00196	0.00487
Arsenic	0	0	0	0
Beryllium	0	0	0	0
Cadmium	0	0	0	0
Chromium (total)	0.0000052	0.0000014	0.00000088	0.0000019
Copper	0.0000010	0.00000026	0.00000017	0.00000036
Manganese	0.0000012	0.00000031	0.00000020	0.00000044
Nickel	0	0	0	0
Zinc	0	0	0	0

Source: Port of Oakland 2003; CDM 2005.
Prepared by: CDM

Table L-7

2003 Baseline TAC Emissions by Mode (tons/year)

Toxic Air Contaminant	Aircraft Operating Mode			
	Taxi/Idle	Approach	Climbout	Takeoff
Acetaldehyde	5.686	0.1283	0.05514	0.06995
Acrolein	2.943	0.03988	0.01436	0.02804
Benzene	5.909	0.1259	0.03891	0.04365
1,3-Butadiene	5.017	0.05819	0.006214	0.05954
Formaldehyde	34.49	0.9154	0.2723	0.2341
Toluene	5.091	0.06522	0.01509	0.02908
Xylene (total)	3.679	0.05942	0.01836	0.04214
Napthalene	1.371	0.01757	0.005486	0.02815
Arsenic	0	0	0	0
Beryllium	0	0	0	0
Cadmium	0	0	0	0
Chromium (total)	0.00194	0.000011	0.0000025	0.000011
Copper	0.000372	0.0000021	0.00000047	0.0000021
Manganese	0.000447	0.0000026	0.00000057	0.0000025
Nickel	0	0	0	0
Zinc	0	0	0	0

Source: CDM, 2005
Prepared by: CDM

Table L-8

2005 SAIP TAC Emissions by Mode (tons/year)

Toxic Air Contaminant	Aircraft Operating Mode: Taxi/Idle	Approach	Climbout	Takeoff
Acetaldehyde	13.65	0.2204	0.08357	0.1204
Acrolein	7.068	0.0685	0.02176	0.04826
Benzene	14.19	0.2162	0.05896	0.07512
1,3-Butadiene	12.05	0.09994	0.009417	0.1025
Formaldehyde	82.81	1.572	0.4127	0.4030
Toluene	12.23	0.112	0.02286	0.05005
Xylene (total)	8.834	0.1020	0.02783	0.07254
Napthalene	3.293	0.03018	0.008314	0.04846
Arsenic	0	0	0	0
Beryllium	0	0	0	0
Cadmium	0	0	0	0
Chromium (total)	0.004652	0.000019	0.0000037	0.000019
Copper	0.0008946	0.0000036	0.00000071	0.0000036
Manganese	0.001074	0.0000044	0.00000086	0.0000043
Nickel	0	0	0	0
Zinc	0	0	0	0

Source: CDM 2005.
Prepared by: CDM

L.3.1.2.2 Ground Support Equipment (GSE)

The GSE VOC emissions calculated from the CARB OFFROAD model and included in the criteria pollutant inventory form the basis for organic TAC emissions from GSE engines. Gasoline engines produce most of the VOC emissions from GSE. Therefore, the CARB organic speciation profile number 413[35] for non-catalyzed gasoline engines was used to develop the organic TAC emissions from GSE for both long-term and short-term exposure impacts.

In addition, diesel engine exhaust was characterized by diesel particulate matter (DPM) to determine long-term exposure impacts. The DPM emissions were directly determined from PM_{10} emissions from diesel engines. To determine short-term impacts from exposure to diesel exhaust, CARB PM speciation profile 425[36] was used to quantify TAC emissions from diesel engines. Finally, TACs in PM_{10} emissions from gasoline engines were quantified using CARB PM speciation profile number 399 for non-catalyzed gasoline engines[37]. The TAC emissions from GSE in 2003 and 2005 are presented in **Table L-9**.

L.3.1.2.3 Ground Access Vehicles (Roadways and Parking Lots)

The motor vehicle VOC emissions from on-airport roadways and parking lots calculated using the CARB EMFAC2002 model and included in the criteria pollutant inventory form the basis for organic TAC emissions from cars and trucks. Gasoline engines produce most of the VOC emissions from motor vehicles. Therefore, the CARB organic speciation profile number 442 for catalyzed gasoline

---

[35] California Air Resources Board 2003a. Draft California Emission Inventory Development and Reporting System (CEIDARS) – ARB Organic Gas Speciation Profiles, http://www.arb.ca.gov/ei/speciate/ORGPROF_03_19_03.xls.
[36] California Air Resources Board 2002. California Emission Inventory and Reporting System (CEIDARS) - Particulate Matter (PM) Speciation Profiles, http://www.arb.ca.gov/ei/speciate/PMPROF_09_27_02.xls
[37] California Air Resources Board 2002. California Emission Inventory and Reporting System (CEIDARS) - Particulate Matter (PM) Speciation Profiles, http://www.arb.ca.gov/ei/speciate/PMPROF_09_27_02.xls

engine exhaust in 2004[38] was used to develop organic TAC emissions from motor vehicles for both long-term and short-term exposure impacts.

As with GSE, diesel engine exhaust was characterized by DPM emissions to determine long-term exposure impacts. The DPM emissions were directly obtained from diesel PM_{10} emissions using EMFAC2002 emission factors. To determine short-term impacts from exposure to diesel exhaust, CARB PM speciation profile 425 was used to quantify TAC emissions from diesel engines[39]. Finally, TAC in PM_{10} emissions from gasoline engines were quantified using CARB PM speciation profile number 400 for catalyzed gasoline engines[40]. The TAC emissions from GAV in 2003 and 2005 are also presented in Table L-9.

Table L-9

2003 and 2005 TAC Emissions from GSE and GAV (tons/year)

	2003 Baseline		2005 SAIP	
Toxic Air Contaminant	GSE	GAV	GSE	GAV
Acetaldehyde	0.8126	0.8306	0.9310	0.8670
Acrolein	0.1886	0.4672	0.2161	0.4877
Benzene	5.456	9.088	6.251	9.487
1,3-Butadiene	1.045	1.897	1.197	1.980
Formaldehyde	1.335	5.859	1.529	6.116
Toluene	10.69	20.27	12.25	21.16
Xylene (total)	2.917	16.91	3.342	17.65
Napthalene	0.1741	0.1661	0.1995	0.1734
Arsenic	0	0	0	0
Beryllium	0	0	0	0
Cadmium	0	0	0	0
Chromium VI	0	0	0	0
Copper	0.07256	0.1730	0.08312	0.1806
Manganese	0.07256	0.1730	0.08312	0.1806
Nickel	0.07256	0.1730	0.08312	0.1806
Zinc	0.07256	0.1730	0.08312	0.1806
Diesel PM	28.88	2.095	36.59	2.848

Source: CDM, 2005.
Prepared by: CDM

L.3.1.2.4 Stationary Sources

Emissions from stationary sources, primarily the central utility plant (CUP) and fuel farm are assumed to be the same for 2003 and 2005. The project would not change any of the stationary sources facilities. The CUP operated at its maximum capacity in 2003 and thus would not generate any additional emissions in 2005. Further, the speciation profile for jet kerosene vapor (CARB organic speciation profile number 100) does not contain any listed TACs. Therefore, the incremental impact between 2003 and 2005 for stationary sources would be zero.

[38] California Air Resources Board 2003a. Draft California Emission Inventory Development and Reporting System (CEIDARS) – ARB Organic Gas Speciation Profiles, http://www.arb.ca.gov/ei/speciate/ORGPROF_03_19_03.xls.
[39] California Air Resources Board 2002. California Emission Inventory and Reporting System (CEIDARS) - Particulate Matter (PM) Speciation Profiles, http://www.arb.ca.gov/ei/speciate/PMPROF_09_27_02.xls
[40] California Air Resources Board 2002. California Emission Inventory and Reporting System (CEIDARS) - Particulate Matter (PM) Speciation Profiles, http://www.arb.ca.gov/ei/speciate/PMPROF_09_27_02.xls

L.3.2 Exposure Concentrations (Dispersion)

Dispersion modeling analysis of TACs was conducted for both construction and operational sources. The USEPA AERMOD[41] dispersion model, which is incorporated in the FAA EDMS model[42], was used to conduct this analysis, consistent with the criteria pollutant concentration analysis conducted for the SAIP and discussed in Section 4.3 of the SAIP Draft EIR. For the TAC analysis, VOC and PM concentrations were modeled using AERMOD, then the resulting concentrations were speciated into individual organic or particulate TAC concentrations. Receptors[43] included in the modeling analysis were located at or near the airport fenceline and in the Central Terminal Area (CTA). Since the fenceline and CTA are the closest locations with unrestricted access to airport emission sources, the AERMOD-modeled concentrations at these locations would be higher than concentrations modeled further out from the airport. Each receptor was identified as being either a residential or occupational receptor type, depending on the nearest land use designation.

Separate model runs were conducted for construction only, and combined operational and construction sources. The construction-only analysis was used to determine the contribution that SAIP construction would make to airport-related risks and hazards. The final analysis combined construction and operational sources into a single model run to determine total airport contributions to incremental risks. The following subsections provide a brief summary of the modeling approach used for construction and operational sources.

L.3.2.1 Construction Activity Dispersion Analysis

In addition to general modeling guidance for use of AERMOD, the analysis also incorporated modeling methodology adopted in the document titled “SCAQMD Localized Significance Threshold Methodology (SCAQMD LST Guidance)” [44].

The AERMOD model was used to calculate the annual average (chronic and carcinogenic exposure) and peak hour (acute exposure) chemical concentrations associated with each emitting source. The model requires various input parameters including chemical emission data and local meteorology. Inputs for each emitting source were based on characterizations of each pollutant. Exhaust emissions from construction equipment were treated as a set of elevated volume sources. The number and dimensions of the volume sources reflect the active construction zone. The release height was assumed to be five meters which represents the mid-range of the expected plume rise from frequently used construction equipment during daytime atmospheric conditions. Construction materials (e.g., asphalt paving operations and coating and architectural coating) were treated as a set of ground-release volume sources with the number and dimensions of the volume sources reflecting the active construction zone.

L.3.2.2 Operational Source Dispersion Analysis

The operational parameters used in the AERMOD dispersion analysis, such as source type (point, area, volume), emission rate, location, and size (dimensions for area and volume sources) were

---

[41] U.S. Environmental Protection Agency 1998. "Revised Draft User's Guide for the AMS/EPA Regulatory Model – AERMOD," Office of Air Quality Planning and Standards, Research Triangle Park, NC. November.
[42] Federal Aviation Administration 2004. “Emissions and Dispersion Modeling System (EDMS) User’s Manual,” FAA-AEE-04-02, Washington, D.C. September.
[43] Receptors represent locations in the vicinity of the airport where people could potentially be exposed to the TACs by breathing the air.
[44] South Coast Air Quality Management District 2003. SCAQMD Localized Significance Threshold Methodology SCAQMD LST Guidance. June.

generated by EDMS 4.21 based on user inputs. In general, aircraft sources were modeled as a series of area sources on each runway, taxiway, queue point, and in the departure and arrival space off the ends of each runway. GSE were modeled as volume sources at each gate. GAV were modeled as a series of area sources on each roadway and parking lot. Inputs to the 2003 Baseline and 2005 SAIP AERMOD model runs are included in **Attachment 2** to this Appendix.

L.4 Human Health Risk Characterization

Risk estimates for the combined construction and operational sources are presented in the following sections. **Attachment 3** to this Appendix presents calculations and results for incremental cancer risks and incremental non-cancer chronic and non-cancer acute hazards for residents and school children. Risk estimates for construction sources only are presented in **Attachment 4** to this Appendix, and indicate that construction impacts to health risk are below the thresholds of significance. Therefore, the risk estimates for combined sources that exceed the thresholds are primarily driven by operational sources.

Cumulative cancer risks were evaluated previously in the LAX Master Plan Final EIR; methods have not changed. Methods used to evaluate cumulative non-cancer hazards are discussed in the LAX Master Plan Final EIR, Technical Report 9a.

L.4.1 Incremental Risks and Non-Cancer Hazards Associated with SAIP Operations and Construction

Risk estimates for the combined construction and operational sources are presented below for on-airport workers (occupational exposure), and off-airport residents, workers, and school children. Acute risks as well as chronic cancer and non-cancer risks are discussed.

L.4.1.1 Comparison of On-Airport Air Concentrations with OSHA Limits for Workers

Workers are evaluated by comparing estimated annual air concentrations of TACs for the SAIP to the California Occupational Safety and Health Administration (CalOSHA) 8-hour Time-Weighted Average Permissible Exposure Levels (PEL-TWAs)[45]. For pollutants with no PELs, Threshold Limit Values (TLVs) established by the American Conference of Governmental Industrial Hygienists (ACGIH)[46] were used. Estimated on-airport air concentrations and PEL-TWAs for TACs of concern for LAX are presented in **Table L-10**.

Estimated maximum 8-hour air concentrations at on-airport locations under the SAIP are well below PELs or TLVs for all TACs. This result suggests that air concentrations from airport emissions with or without implementation of the SAIP would not exceed those considered "acceptable" by CalOSHA standards.

[45] California Occupational Safety and Health Administration, Permissible Exposure Limits for Chemical Contaminants, Table AC-1, 2004. http://www.dire.ca.gov/title8/5155.html.
[46] American Conference of Governmental Industrial Hygienists, Documentation of the Threshold Limit Values and Biological Exposure Indices, 8th ed., 1998.

Table L-10

Comparison of CalOSHA Permissible Exposures Limits to Maximum Estimated 8-Hour On-Airport Air Concentrations

Toxic Air Contaminant[1/]	2005 SAIP (mg/m^3)[2/]	CAL OSHA PEL-TWA (mg/m^3)[3/]
Acetaldehyde	0.00014	45
Acrolein	0.0000712	0.25
Benzene	0.00126	0.32[4/]
1,3-Butadiene	0.00027	2.2
Formaldehyde	0.00085	0.37[4/]
Toluene	0.0026	188
Xylene (total)	0.0020	435
Naphthalene	0.000030	50
Diesel PM	0.00016	NA
Arsenic	0	0.01
Beryllium	0	0.002
Cadmium	0	0.005
Chromium (VI)	0.0000000013	0.05
Copper	0.00000016	1.
Manganese	0.00000012	0.2
Nickel	0.000000069	1.
Zinc	0	NA

NA – Not Available

1/ All TACs for which PEL-TWAs are available are listed. PEL-TWAs are not available for diesel exhaust or zinc.

2/ Concentrations at on-airport location (0, 20) – Central Terminal Area.

3/ California Occupational Safety and Health Administration. Permissible Exposure Limits for Chemical Contaminants, Table AC-1, 2000. http:// www.dir.ca.gov/title8/5155.html.

4/ CalOSHA does not have a value; value is from American Conference of Governmental Industrial Hygienists (ACGIH), Documentation of the Threshold Limit Values and Biological Exposure Indices, 8th ed., Cincinnati, Ohio, 1998.

Source: CDM, 2005.
Prepared by: CDM

L.4.1.2 Chronic Incremental Cancer Risks and Non-Cancer Hazards for Maximally Exposed Individuals (MEI) – Residents and School Children

For the SAIP, approximately 100 grid points were analyzed primarily along the airport fenceline. Commercial or residential land uses for each grid point were designated through inspection of aerial photos. Residential land use was assumed for grid points along the fenceline that are adjacent to residential areas. Likewise, commercial land use was considered for grid points adjacent to commercial areas. The assessment assumed that schools could be located, in theory, in either commercial or residential areas and therefore all grid points were assumed to be potential school sites. For the acute impact analysis, off-site workers were assumed at receptor locations along the fenceline that are adjacent to commercial land uses. Fenceline concentrations of TACs are likely to represent the highest concentrations and potential impacts for residents, workers and school children. Thus, risks and hazards estimated for the LAX fenceline are likely to overestimate risks and hazards that may occur in actual residential or commercial areas.

Incremental MEI cancer risks and non-cancer health hazards were calculated for adult residents, resident children ages 0 to 6 years, and for elementary-aged school children at fenceline locations where maximum air concentrations for TACs were predicted. Incremental cancer risks and chronic non-cancer human health hazards for MEI are summarized in **Table L-11**.

Table L-11

Incremental Cancer Risks and Chronic Non-Cancer Human Health Hazards for Maximally Exposed Individuals for 2005 SAIP Compared to 2003 Baseline

Receptor Type	Incremental Cancer Risks[1/] (per million people)
Child Resident	6
School Child	2
Adult + Child Resident[2/]	**20**
Adult Resident	**19**
	Incremental Non-Cancer Chronic Hazards[3/]
Child Resident	**5**
School Child	**2**
Adult Resident	**1**

Notes:

1/ Values provided are changes in the number of cancer cases per million people exposed as compared to baseline conditions. All estimates are rounded to one significant figure.

2/ Includes exposure to TACs released from LAX from childhood (ages 0-6) through adulthood (ages 7-70).

3/ Hazard indices are totals for all TACs that may affect the respiratory system. This incremental hazard index is essentially equal to the total for all TACs.

Values in **BOLD** exceed thresholds of significance.

Source: CDM, 2005.
Prepared by: CDM

L.4.1.2.1 Residents (Adults and Young Children)

Total estimated incremental cancer risk for adult residents and child residents for the SAIP were 19 in one million and 6 in one million, respectively. Estimated cancer risks are higher for adults than for children, because exposure duration for adults is longer. Total estimated incremental cancer risks for a young child through adulthood (adult + child) with maximum predicted TAC concentrations was 20 in one million. Cancer risks for adults and children under the SAIP were mostly due to predicted exposure to diesel particulate matter, 1,3-butadiene, formaldehyde, and benzene. For the adult resident, adult + child, and child resident, diesel particulate matter and 1,3-butadiene contributed roughly evenly to the estimated cancer risks with diesel particulate matter contributing 37 percent and 1,3-butadiene contributing 42 percent. Formaldehyde and benzene contributed 10 percent and 9 percent, respectively.

Estimated HIs for adult residents and child residents living at locations with maximum TAC concentrations were 1 and 5, respectively. HI estimates are higher for children than adults, because they are normalized to body weight, which is lower for children than for adults. Acrolein is the only chemical for which the HQ exceeds one. Acrolein contributes 97 percent or more to total HIs for all alternatives. The source of acrolein is mainly jet engine exhaust, and concentrations increase with higher volumes of aircraft traffic.

L.4.1.2.2 School Children

Estimated incremental cancer risk for children attending schools within the study area was 2 in one million. Cancer risks for school children under the SAIP were mostly due to predicted exposure to diesel particulates (6 percent), 1,3-butadiene (62 percent), formaldehyde (15 percent), and benzene (12 percent).

The estimated total HIs for chemicals affecting the same target (i.e., the respiratory system) for MEI school children are 2 under the SAIP. Estimated HIs are predominantly due to exposure to acrolein in jet exhaust.

L.4.1.3 Acute Incremental Non-Cancer Hazards

Acrolein is a TAC of concern and is responsible for essentially all predicted chronic non-cancer health hazards associated with LAX operations. Acrolein is also the only TAC of concern in emissions from LAX that might be present at concentrations approaching a threshold for acute effects. (For a detailed discussion of uncertainties regarding the presence of acrolein in aircraft emissions, see Section 7.3 of Technical Report S-9a of the LAX Master Plan Final EIR.) OEHHA has developed an acute REL for acrolein. Other TACs of concern associated with LAX operations, for which there are acute RELs, are unlikely to be present in concentrations that would represent an acute health threat.

Short-term concentrations for acrolein from airport sources were estimated using the same air dispersion model (AERMOD) used to estimate annual average concentrations, but with the model option for 1-hour maximum concentrations selected. Incremental acrolein concentrations in AERMOD output from the 2005 SAIP were calculated by subtracting 2003 Baseline concentrations at each of the selected grid nodes. These concentrations represent the increment above baseline impacts that might be associated with the SAIP. Acute hazards were then estimated at each grid point by comparison with the acute REL for acrolein. All acute hazard estimates are specific for airport emissions and are independent of the county-wide estimates developed by USEPA.

Acute hazard indices associated with total acrolein concentrations range from 1 to 19, with an average of 5, for selected grid nodes within the study area, as shown in **Table L-12**. A hazard index equal to or greater than 1, the threshold of significance for acute effects, indicates that, for some weather conditions and for some locations near the airport, the concentration of acrolein could increase by 0.19 $\mu g/m^3$ or more for short periods of time. A hazard index equal to or greater than 1 indicates some potential for acute adverse health effects. For acrolein, if such effects occurred, they would include mild irritation of eyes and mucous membranes.[47]

Table L-12

Incremental Acute Hazard Indices for the 2005 SAIP Compared to the 2003 Baseline

Summary of Hazard Indices	2005 SAIP Increment
Residential	
Maximum HI	**10**
Minimum HI	**1**
Average HI	**4**
Off-Site Worker	
Maximum HI	**19**
Minimum HI	**1**
Average HI	**5**

Notes:

HI = Hazard Index

[47] California Environmental Protection Agency, Office of Environmental Health Hazard Assessment, OEHHA Toxicity Criteria Database, September 24, 2004, http://www.oehha.ca.gov/risk/ChemicalDB/index.asp.

Values in **BOLD** exceed thresholds of significance.

Source: CDM 2005.
Prepared by: CDM

L.4.2 Cumulative Risks and Non-Cancer Hazards Associated with LAX Operations

Unlike air quality, for which standards have been established that determine acceptable levels of pollutant concentrations in the air, no standards exist that establish acceptable levels of human health risks or that identify a threshold of significance for cumulative health risk impacts. Therefore, the discussion below addresses cumulative impacts, and the project-related contribution to those impacts, but does not make a determination regarding the significance of cumulative impacts.

L.4.2.1 Cumulative Chronic Risks

In November 1999, the SCAQMD conducted an urban air toxics monitoring and evaluation study for the South Coast Air Basin called MATES-II. MATES-II provides a general evaluation of cancer risks associated with TACs from all sources within the South Coast Air Basin. According to the study, cancer risks in the Basin range from 1,120 in a million to 1,740 in a million, with an average of 1,400 in a million. These cancer risk estimates are high and indicate that current impacts associated with sources of TACs from past and present projects in the region are significant. The MATES-II study is an appropriate estimate of present cumulative impacts of TAC emissions in the South Coast Air Basin. It does not, however, have sufficient resolution to determine the fractional contribution of current LAX operations to TACs in the airshed. Only possible incremental contributions to cumulative impacts can be assessed.

The LAX Master Plan Final EIR used the results of the MATES-II study to address cumulative cancer risks associated with the build alternatives and the No Action/No Project Alternative. Overall, the analyses indicated that:

- LAX operations would have a small impact on cumulative human cancer risks associated with living in the South Coast Air Basin.
- Mitigation would reduce cancer risks below those predicted for pre-mitigation conditions. That is, mitigation would result in a decrease in cumulative risks for many people living closest to the airport.

Although project-specific operational activities during construction of the SAIP were not analyzed in the LAX Master Plan Final EIR, total estimated cancer risks for the SAIP are in the same range as those estimated for the No Action/No Project Alternative in 2005 in the LAX Master Plan Final EIR. Therefore, cumulative impacts for the SAIP in 2005 may be similar to those identified for the No Action/No Project Alternative in 2005. Based on this assumption, the SAIP can be expected to result in a small increase in cumulative human cancer risks. Because the incremental contribution would be relatively small (i.e., less than 2 percent), it would probably not be measurable against urban background conditions in the South Coast Air Basin.

With regard to probable future projects, continued growth and development in the region, as well as other construction projects at LAX, would result in additional sources of TACs. Because future sources and releases of TACs are highly speculative, meaningful quantification of future cumulative health risk exposure in the Basin is not possible. Moreover, the threshold of significance used in this analysis is based on the incremental cancer risk increase of individual projects; this threshold is not appropriately applied to conclusions regarding the cumulative cancer risk in the Basin. However, based on the relatively high cancer risk level associated with past and present projects, as represented by the environmental baseline (i.e., an additional 1,400 cancer cases per million), the SAIP would add incrementally to the already high cumulative impacts in the Los Angeles Basin near LAX.

The above comparisons do not account for possible positive changes in air quality in the South Coast Air Basin in the future. SCAQMD and other agencies are consistently working to reduce air pollution. In particular, reductions in emission of diesel particulates are being considered for the near future. Since diesel particulates are the major contributors to estimated cancer risks, substantial reductions in diesel emissions would result in substantial reductions in cumulative cancer risks. Such reductions may not, however, have a substantial effect on estimates of LAX contributions to cumulative risks, as efforts to reduce diesel particulate would apply to both LAX-related and other sources. These, and other such regulations intended to reduce TAC emissions within the Basin, would serve as the basis for mitigating cumulative impacts in the region. While continued, if not increased, regulation by the SCAQMD of point sources as well as more stringent emission controls on mobile sources would reduce TAC emissions, whether such measures would alter incremental contributions of TAC releases to cumulative impacts under the SAIP cannot be ascertained.

L.4.2.2 Cumulative Chronic Non-Cancer Hazards

No study equivalent to the MATES-II study is available for assessing possible cumulative non-cancer impacts. Recently, USEPA conducted an independent study of possible annual average air concentrations within the South Coast Air Basin associated with a variety of TACs, including acrolein. These estimates provide a means for assessing cumulative non-cancer impacts of airport operations in much the same manner as cumulative cancer risks were assessed using the MATES-II results.

Within the study area of the HHRA, USEPA predictions for annual average acrolein concentrations yield a range of hazard indices from 35 to 221, with an average of 59. Because of the large uncertainties associated with the USEPA estimates, the cumulative analysis for non-cancer health impacts is semi-quantitative and based on a range of possible contributions. This cumulative analysis does not address the issue of potential interactions among acrolein and criteria pollutants. Such interactions cannot, at this time, be addressed in a quantitative fashion. A qualitative discussion of the issue is presented in the LAX Master Plan Final EIR Technical Report S-9a, Section 7.

Maximum incremental hazard indices for the SAIP were estimated to be about 5 compared to the 2003 Baseline. This increment represents between 2 and 14 percent of the estimates based on USEPA modeling. Hence, the SAIP could add to total average acrolein concentrations in the Basin, and to possible chronic human health hazards associated with exposure to acrolein.

As discussed in the LAX Master Plan Final EIR (Subsection 4.24.1.2), there are limited data available describing acrolein emissions from jet aircraft engines. Therefore, estimates of non-cancer hazards are very uncertain. Non-cancer hazards associated with the SAIP should only be used to provide a relative comparison to baseline conditions, recognizing that the uncertainties associated with acrolein emissions apply to all scenarios. These hazards should not be viewed as absolute estimates of potential health impacts. Moreover, USEPA's estimates are based on data that are now several years old. Emissions from some important sources may have been reduced as a result of continuing efforts by SCAQMD and other agencies to improve air quality in the South Coast Air

Basin. Finally, the estimates do not consider degradation of TACs in the atmosphere. Degradation may be very important for relatively reactive chemicals such as acrolein.

L.4.2.3 Cumulative Acute Non-Cancer Hazards

Generally, predicted concentrations of TACs released from LAX suggest that acute health hazards would not be expected. The exception might be levels of acrolein in LAX emissions. Acrolein contributes almost all of the non-cancer risk that might be associated with the SAIP. The REL for this TAC for evaluation of chronic exposure (0.06 $\mu g/m^3$) and the REL for the evaluation of acute (short term) exposure (0.19 $\mu g/m^3$) are not greatly different. Since some estimates of non-cancer hazard following chronic (long-term) exposure are fairly high, the possibility that short-term concentrations might exceed 0.19 $\mu g/m^3$ was evaluated. Methods used to evaluate cumulative acute hazards and results of the analysis are discussed in the LAX Master Plan Final EIR (Subsection 4.24.1.7 and Technical Report S-9a, Section 6.3).

When USEPA annual average estimates are converted to possible 1-hour maximum concentrations, acute hazard indices associated with total acrolein concentrations are estimated to range from 14 to 87, with an average of 23, for locations within the study area. Predicted incremental acute hazards for the SAIP are 10 and 19 for fenceline locations adjacent to residential and commercial land uses, respectively. Thus, the SAIP could contribute between 11 and 71 percent above current levels at residential locations and between 22 and 136 percent above current levels at off-airport locations.

L.4.2.4 Reassessment of Contribution of Individual TACs to Health Risks and Hazards

It is anticipated that the relative contribution of individual TACs to total incremental risks and hazards for the SAIP would have been essentially the same as previously reported for Alternative D in the LAX Master Plan Final EIR if the baseline was retained at 1996 or even the updated year 2000 condition evaluated in the LAX Master Plan Final EIR. However, due primarily to the change in the environmental baseline to 2003 and retention of pre-September 11 predictions for year 2005 operations, SAIP impacts are greater than previously reported for Alternative D. Cancer risks for adults and children associated with operations at LAX are mostly due to estimates of exposure to diesel particulates, benzene, formaldehyde, and 1,3-butadiene. Non-cancer health hazards are due almost entirely to predicted releases of acrolein during LAX operations.

Incremental cancer risks are presented for each TAC for the SAIP in **Table L-13**, Incremental Cancer Risks and Non-Cancer Hazards for 2005 SAIP Compared to 2003 Baseline. Cancer risks increase with greater exposure duration; therefore, the adult + child resident as the MEI receptor with the greatest exposure potential was selected to identify TAC-specific contributions to the incremental risk. Diesel particulates and 1,3-butadiene contribute 37 and 42 percent of the total incremental cancer risk, respectively. Benzene and formaldehyde contribute about 9 and 10 percent, respectively, to the total incremental cancer risk. Other TACs contribute 2 percent or less to the total incremental cancer risk.

Table L-13

Incremental Cancer Risks and Non-Cancer Hazards for 2005 SAIP Compared to 2003 Baseline

	Summary of Cancer Risks to Adult + Child Resident		Summary of Non-Cancer Hazards for Child Resident	
TAC	Cancer Risk Year 2005 Compared to Baseline Year 2003 (per million)	Percentage of Total Risk	Hazard Year 2005 Compared to Baseline Year 2003	Percentage of Total Hazard
Acetaldehyde	0.2	0.8%	0.02	0.4%
Acrolein	NC	0.0%	4.8	97%
Benzene	1.8	8.7%	0.01	0.1%
1,3-Butadiene	8.5	42%	0.08	1.7%
Formaldehyde	2.0	9.9%	0.002	0.0%
Toluene	NC	0.0%	0.0005	0.0%
Xylene (total)	NC	0.0%	0.001	0.0%
Naphthalene	NC	0.0%	0.02	0.3%
Diesel PM	7.4	36.6%	0.02	0.3%
Arsenic	0	0.0%	0	0.0%
Beryllium	0	0.0%	0	0.0%
Cadmium	0	0.0%	0	0.0%
Chromium (VI)	0.4	2%	0	0.0%
Copper	NC	0.0%	NC	0.0%
Manganese	NC	0.0%	0.0004	0.0%
Nickel	0.0001	0.0%	0.00000003	0.0%
Zinc	NC	0.0%	0	0.0%
Incremental Total	20		5	

Notes:
TAC = Toxic Air Contaminant
NC = Not calculated, cancer slope factor and/or unit risk factor has not be determined for this compound.

Source: CDM, 2005.
Prepared by: CDM

The child resident has the greatest potential for non-cancer hazards; therefore, Table L-13 presents hazards for the child resident. Acrolein contributes 97 percent of the total incremental hazards. Other TACs contribute 3 percent or less to the total incremental hazard.

Consistent with the conclusions in the LAX Master Plan Final EIR, modeling results for the SAIP indicate that emissions of 1,3 butadiene, benzene, formaldehyde, and acrolein from aircraft and diesel particulates from trucks and construction equipment are responsible for nearly all potential health impacts posed by airport operations. Aircraft emissions would be ongoing, while construction releases (mostly diesel) would be temporary. Cancer risks that reflect actual exposures during SAIP construction are difficult to estimate because the exact construction schedule is unknown, and emissions and exposures would vary year-to-year, or even day-to-day, as construction activity started in some areas of the airport, changed in others, and ended in still other locations.

L.5 Uncertainties

Uncertainties are present in all facets of human health risk assessment. Potential important uncertainties associated with the HHRA for the LAX Master Plan are discussed in detail in Technical Report 14a and Technical Report S-9a of the LAX Master Plan Final EIR. These same uncertainty considerations apply to the analyses presented in the SAIP Draft EIR. These uncertainties are briefly summarized below.

L.5.1 Uncertainties Associated with Emission Estimates and Dispersion Modeling

Risk estimates were based on chemical concentration estimates obtained through emissions and dispersion modeling. Emissions estimates are sensitive to the values used to represent the numerous emission source variables (e.g., future aircraft operation assumptions) and to the air toxic emission factor values used for each source. Consequently, estimated emissions values are subject to uncertainties. Different assumptions and values of variables would result in different emissions estimates. The HHRA used well-accepted methods and best available emission factor data to develop estimates of emissions, and estimates and assumptions are reasonable and appropriate. Actual emissions are unlikely to be meaningfully greater than those used in the analyses.

L.5.2 Evaluation of Sensitive Receptor Populations

Certain subpopulations may be more sensitive or susceptible to negative health impacts caused by environmental contaminants than the population at large. Risk estimates presented in the HHRA represent a wide range of potential exposures including the highest that can be reasonably expected. Thus, even though risk estimates are not provided for all potentially sensitive receptors in the area, populations not specifically evaluated are still expected to be represented. For example, quantitatively evaluated populations include those with the highest expected exposure durations and exposure frequencies (e.g., residents). Exposures are therefore expected to be less for other populations, even those with higher chemical sensitivities.

L.5.3 Uncertainties Associated with Assumptions for Exposure Duration

An exposure duration of 70 years was used to estimate possible cancer risks associated with LAX operations. This exposure duration is generally used by the SCAQMD in risk assessments performed for permitting purposes. This exposure duration combined with other exposure parameters used in this HHRA assumes that an individual exists that resides in the same location for 70 years; that this location is where maximum impacts from LAX occur; and that the individual is sedentary, spending essentially all of his/her time at home, and yet still breathes at a rate consistent with relatively high activity. Further, this exposure duration assumes that construction emissions continue for a lifetime instead of a few years as anticipated. This combination of factors never occurs, and any estimates of cancer risk based on such combination will greatly overestimate possible cancer risks for everyone in the study area.

L.5.4 Uncertainties Associated with Toxicity Assessment

A potentially large source of uncertainty is inherent in the derivation of the CalEPA and USEPA toxicity criteria (i.e., oral and inhalation reference doses (RfDs), and cancer slope factors). In many cases, data used to develop RfDs must be extrapolated from animals to sensitive humans by the application of uncertainty factors to estimated no-observable-adverse-effects-levels (NOAELs) or lowest-observed-adverse-effects-levels (LOAELs). While designed to be protective, in many cases these uncertainty factors overestimate the magnitude of differences that may exist between human and animals, and among humans.

In some cases, however, toxicity criteria may be based on studies that did not detect the most sensitive adverse effects. For example, many past studies have not measured possible toxic effects on the immune system. Moreover, some chemicals may cause subtle effects not easily recognized in animal studies.

Other uncertainties regarding the toxicity assessment are summarized below.

L.5.4.1 Lack of Quantitative Evaluation for Particulates in Jet Exhaust

Diesel exhaust is expected to be emitted in relatively large quantities from LAX under the build alternatives and the No Action/No Project Alternative and is therefore quantitatively evaluated in the HHRA. Only diesel exhaust from ground sources (e.g. trucks and buses) is included in these evaluations. Aircraft emissions were not included because there is insufficient information regarding the nature and toxicity of total petroleum hydrocarbon (TPH) emissions associated with aircraft and toxicity criteria for these emissions are not available. Toxicity criteria are available for diesel exhaust in general, however, extrapolation of these criteria to TPH emitted from aircraft was not considered scientifically justifiable. Aircraft use a lighter fuel and a substantially different combustion process than do diesel engines and have therefore very different emissions.

The lack of quantitative evaluation of TPH emissions from aircraft results in some uncertainty in the risk estimates presented in the HHRA. However, because ground sources are expected to emit large quantities of PM, and aircraft engines are expected to emit relatively little, risks associated with TPH emissions from LAX are still expected to be adequately characterized.

L.5.4.2 Uncertainties for 1,3-Butadiene and Acrolein

Two volatile TACs of concern dominate non-diesel associated risk estimates for LAX emissions. 1,3-butadiene and acrolein are "risk drivers" for cancer and non-cancer effects, not subject to the large uncertainties in the CalEPA diesel toxicity assessment. Recently, a new health assessment for 1,3-butadiene has been published by USEPA, and Toxicological Excellence in Risk Assessment (TERA) recently published a toxicological review of acrolein.[48] Both these recent reviews were evaluated, and new toxicological insights incorporated into the toxicological profiles in the LAX Master Plan Final EIR (Technical Report 14a, Attachment C). No new information was uncovered that would indicate that toxicological criteria for either TAC would be likely to change substantially in the near future. Thus, cancer risks and non-cancer hazards for both TACs are consistent with the most current toxicological literature.

However, neither chemical is particularly stable in air and degradation of these chemicals after release was not considered in the analysis. Concentrations of both chemicals are likely to be overestimated, and, therefore, cancer risks and noncancer hazards also overestimated. For example, air samples collected near Chicago's O'Hare airport, one of the nation's busiest, were unable to detect any acrolein at locations near the airport.[49]

L.5.5 Uncertainties in Background Estimates (MATES-II)

Risks from MATES-II were calculated based on monitoring data collected from April 1998 through March 1999. Modeling during the MATES-II study was used only to fully characterize basin risks – not to project what future concentrations and risks would be. As such, comparisons between project-related estimated risks with the MATES-II results must be interpreted in recognition of the different time periods being represented. One may surmise that basin-wide cancer risks would likely increase in time with the inevitable increase in mobile sources along with population growth. On the other hand, currently adopted emission standards for mobile sources will tend to push the future TAC

48 USEPA National Center for the Environmental Assessment, Integrated Risk Information System (IRIS) Online Database, 1999.

49 Illinois Environmental Protection Agency, Final Report: Chicago O'Hare Airport Air Toxic Monitoring Program, June – December 2000, IEPA Bureau of Air, May 2002.

emissions downward. It is not known at this time to what extent these two conditions would offset one another.

However, according to the CARB data, carcinogenic risks due to many TACs have decreased 44 to 63 percent since 1990. If continuing progress is made toward reductions in TAC emissions in the South Coast Air Basin, MATES-II could overpredict potential background risks for year 2005. If this is true, however, the traffic component of the air dispersion modeling for LAX emissions is likely to be too large also. Progress toward decreasing TAC emissions in the South Coast Air Basin must focus on mobile sources, which are the major contributors. Reductions in mobile source emissions would affect emissions from both airport and non-airport related traffic. Overall, the effect of general reductions in mobile source emissions could increase the relative contribution of LAX to basin-wide risks, but any such increase may be tempered by effects of general reductions on LAX-related traffic.

Unfortunately, trends are not available for diesel particulates because these compounds were not previously monitored. Diesel particulates have been found to contribute up to 70 percent of the carcinogenic risks in the South Coast Air Basin, whether estimated risks (such as those calculated in the MATES-II) would increase or decrease in the future. Again, and importantly, any general decrease in diesel emissions would also reduce diesel emissions in LAX-related traffic. Since diesel emissions were also a major contributor to LAX-related cancer risks, changing background as a result of better control of diesel emissions may not greatly affect the LAX contribution to basin-wide cancer risks.

L.5.6 Uncertainties Associated with Evaluation of Cumulative Chronic Non-Cancer Hazards

A semi-quantitative evaluation was performed for the HHRA by taking a range of possible hazards calculated from USEPA estimates for census tracts in the study area, and comparing these estimates to hazards predicted from modeling of LAX emissions. The resulting comparisons are then used only to establish a range of possible relative contributions of LAX operations. These comparisons are subject to high uncertainty and could either under- or overestimate the possible impacts of LAX on cumulative chronic hazards. Estimated cumulative hazards can only be used to make general statements on the possible magnitude of relative contributions, and cannot be used as estimates of actual cumulative hazards for any locations around LAX

L.5.7 Uncertainties Associated with Evaluation of Cumulative Acute Non-Cancer Hazards

The semi-quantitative evaluation of acute hazards performed for the HHRA must be interpreted with great caution. The process included taking a range of possible annual average concentrations from USEPA estimates, subject to high uncertainty, for census tracts in the study area, converting these values to 1-hour maximum concentrations, and comparing these estimates to 1-hour maxima from modeling of LAX emissions. Each of these steps compounds uncertainties, and resulting comparisons can only be viewed as a general assessment of relative impacts that may substantially overestimate the contribution of LAX operations. Estimated cumulative hazards cannot be used as estimates of actual cumulative acute hazards for any locations around LAX.

Acute cumulative effects are also uncertain because of the paucity of data on acrolein emissions from jet aircraft engines. Dependence on regulatory databases with estimated acrolein emissions may have substantially overestimated possible releases of acrolein during LAX operations. A recent study[50] of jet aircraft emissions indicates that emissions of acrolein during taxi and queue operations, when most acrolein is released, may have been overestimated by nearly 80 percent, suggesting that both acute and chronic non-cancer hazards may be substantially overestimated in the current analysis.

L.5.8 Interactions Among Acrolein and Criteria Pollutants

TACs that act in similar way to produce toxicity may cause additive, or even greater than additive, impacts to human health. Acrolein and criteria pollutants such as oxides of nitrogen and ozone all act as irritants to the upper respiratory system. Thus, interactions among these chemicals are possible. Whether such interactions actually occur, and are important for emissions from LAX operations, cannot be ascertained with available information. Many uncertainties exist, including:

- Reliability of acrolein concentration estimates (see Section 5.7).
- Lack of information on specific mechanisms of toxicity for the chemicals in question, which will effect the potential for and degree of any interactions.
- Lack of information on thresholds at which interactions may occur.

Without extensive additional research, the potential for impacts related to interactions among acrolein and criteria pollutants cannot be further assessed.

[50] Gerstle, T., P. Virag, M. Wade, L. Kimm, "Aircraft Engine and Auxiliary Power Unit Testing: Volume 2, Detailed Sampling Approach and Results," IERA-RS-BR-TR-1999-0006-Vol.2, Institute for Environment, Safety, and Occupational Health Risk Analysis, Brooks Air Force Base, Texas, March 1999.

Attachment 1: Construction Activity Parameters and Emission Rates

This page intentionally left blank.

Table L.1-1
Annual Average and Peak Day Construction Emissions

LAX South Airfield EIR
Construction Emissions - Summary

	Annual Emissions (tons/yr)				Average Daily Emissions (lbs/day)				Average Daily Emissions (g/sec)			
	Unmitigated		Mitigated		Unmitigated		Mitigated		Unmitigated		Mitigated	
Source	ROC	PM10*	ROC	PM10*	ROC	PM10*	ROC	PM10*	ROC	PM10*	ROC	PM10*
Off-Road Equipment-Diesel	6.14	2.74	6.14	0.42	40.91	18.29	40.91	2.82	0.22	0.10	0.22	0.01
On-Road Equipment												
Diesel	1.78	0.86	1.78	0.86	11.84	5.77	11.84	5.77	0.06	0.03	0.06	0.03
Gasoline	1.81	0.10	1.81	0.10	12.07	0.67	12.07	0.67	0.06	0.00	0.06	0.00
Generators	4.98	2.95	3.32	0.50	33.23	19.64	22.16	3.34	0.17	0.10	0.12	0.02
Total Project	14.71	6.65	13.05	1.89	98.05	44.36	86.98	12.59	0.52	0.23	0.46	0.07
								Diesel			0.3940	0.0627
								Gas			0.0635	0.0035

	Peak Day-Quarter 3 (tons/day)				Average Daily Emissions (lbs/day)				Average Daily Emissions (g/sec)			
	Unmitigated		Mitigated		Unmitigated		Mitigated		Unmitigated		Mitigated	
Source	ROC	PM10*	ROC	PM10*	ROC	PM10*	ROC	PM10*	ROC	PM10*	ROC	PM10*
Off-Road Equipment	0.049	0.024	0.049	0.004	97.26	48.54	97.26	7.42	0.51	0.26	0.51	0.04
On-Road Equipment												
Diesel	0.018	0.107	0.018	0.107	36.01	213.99	36.01	213.99	0.19	1.13	0.19	1.13
Gasoline	0.008	0.003	0.008	0.003	16.36	5.23	16.36	5.23	0.09	0.03	0.09	0.03
Generators	0.017	0.010	0.011	0.002	33.23	19.64	22.16	3.34	0.17	0.10	0.12	0.02
Total Project	0.091	0.144	0.086	0.115	182.85	287.39	171.79	229.97	0.96	1.51	0.90	1.21
Source: PCR Services, 2005.								Diesel	0.8756	1.4838	0.8174	1.1819
	Gas	0.008	0.003					Gas	0.0860	0.0275	0.0860	0.0275
Notes:	Diesel	0.018	0.107									

*PM10 represents combustion PM10 only
**Average daily emissions equals annual emissions divided by 300 days (25 days per month x 12 months per year).
Emissions estimates use emission factors from CARB OFFROAD Model, Year 2005 and EMFAC2002, as obtained from the LAX Master Plan EIR prepared by CDM

Mitigation Measures:

Off-Road Diesel Equip.:	PuriNOx Fuel, Particulate Traps, Injection Timing Retarding
Diesel Generators:	Electricity, PuriNOx Fuel, Particulate Traps
Fugitive Dust:	Soil Stabilizers
Equipment Maintenance:	No Mitigation

Table L.1-2
Construction Equipment Substitutions for Emission Calculations

LAX South Airfield EIR
Construction Emissions - HNTB/CDM Equipment Substitutions

HNTB Equipment - Off-Road/Onsite				CDM Substitute Equipment - Off-Road/Onsite			
Equipment Name/Type	Size (hp)	Equipment Type	CARB Class	Substitute - based on Equipment Type Equipment Name/Type	Size (hp)	Substitute - based on CARB Class Equipment Name/Type	Size (hp)
Air Compressor	85	Misc.	50<hp<100	--	--	Texturing/Curing (CMI TC2502T)	87
Barber-Greene BG260C Paver	174	Paver	100<hp<175	Paver (Barber-Greene BG270B)	200	--	--
CAT 14H Motor Grader	220	Grader	175<hp<300	Grader (CAT 14H)	215	--	--
CAT 325C L Excavator	188	Excavator	175<hp<300	Excavator (CAT 325L)	168	--	--
CAT 330C L Excavator	247	Excavator	175<hp<300	Excavator (CAT 330L)	222	--	--
CAT 428 Backhoe	83	Loader	50<hp<100	--	--	Compactor, Dual Drum (CAT CB434B)	80
CAT 615C Scraper	265	Scraper	175<hp<300	Scraper (CAT 631E)	450	--	--
CAT 966 Loader	235	Loader	175<hp<300	Front End Loader (CAT 966F)	220	--	--
CAT 988 Loaders	475	Loader	300<hp<600	Front End Loader (CAT 988F)	400	--	--
CAT CB 634D Rollers	145	Compactor	100<hp<175	Compactor, Dual Drum (CAT CB634C)	145	--	--
CAT CS 531D Compactor	145	Compactor	100<hp<175	Compactor, Dual Drum (CAT CB634C)	145	--	--
CAT CS 583E Compactors	150	Compactor	100<hp<175	Compactor, Dual Drum (CAT CB634C)	145	--	--
CAT IT 14G Loader	220	Grader	175<hp<300	Grader (CAT 14H)	215	--	--
CAT PM 565B Milling Machine	625	Misc.	600<hp<750	--	--	Reclaimer/Stabilizer (CMI RS650)	650
CAT PS 300 B Rubber Tire	99	Compactor	50<hp<100	Compactor, Padded Drum (CAT CP433C)	107	--	--
CAT RM350B Reclaimer	500	Paver	300<hp<600	Reclaimer/Stabilizer (CMI RS650)	650	--	--
Compressors (Gang Drills)	85	Misc.	50<hp<100	--	--	Texturing/Curing (CMI TC2502T)	87
Crusher	450	Misc.	300<hp<600	--	--	Scraper (CAT 631E)	450
Ditch Witch RT 55 Trencher	60	Misc.	50<hp<100	--	--	Compactor, Dual Drum (CAT CB434B)	80
Gomaco GHP-2800	335	Paver	300<hp<600	--	--	Compactor, Dual Tamping (CAT 825G)	315
Gomaco GP-4000 Paver	450	Paver	300<hp<600	Slipform Paver (CMI SF-7004)	460	--	--
Gomaco RTP-500 Belt Placers	200	Misc.	175<hp<300	--	--	Paver (Barber-Greene BG270B)	200
Gomaco TC-400 Cure /Texture Rig	70	Paver	50<hp<100	--	--	Compactor, Dual Drum (CAT CB434B)	80
Jack & Bore Machine	45	Misc.	25<hp<50	Welder (Lincoln Classic III D)	38.9	--	--
Light Plants	15	Misc.	11<hp<25	Light Plant (Almond Brothers Maxi Show 1000)	16.5	--	--
Mechanics Trucks w/ Crane	200	Crane	175<hp<300	Crane - 25 Ton (Grove RT750)	200	--	--
Truck/Tractor Low Boys	400	Misc.	300<hp<600	--	--	Dozer (CAT D9R)	405
Vacum Sweeper	170	Misc.	100<hp<175	--	--	Excavator w/Breaker/Shear (CAT 325L-BS)	168

HNTB Equipment - On-Road/Onsite		
Equipment Name/Type	Size (hp)	Select Substitute Equipment Type
1 Ton Flat Beds	200	Flatbed truck, onsite
1 Ton Trucks w/ Lift	230	Light-duty truck
Crew Van	200	Pickup truck, onsite
Flat Bed Truck	200	Flatbed truck, onsite
Fuel Truck	170	Haul truck, onsite
Paint Truck	175	Haul truck, onsite
Parking Lot Paint Machines	5	Plate compactor
Pickup	230	Pickup truck, onsite
SUV	240	Pickup truck, onsite
Tri-axle Dump Truck	350	Haul truck, onsite
Walk Behind Saw	10	Concrete saw
Water Truck	230	Watering truck

HNTB Equipment - On-Road/Offsite		
Equipment/Trip Type	Size (hp)	Select Substitute Equipment Type
Contractor Personnel		Passenger car
LAWA / CM / Inspectors		Light-duty truck
Course Aggregate		Haul truck, offsite
Fine Aggregate		Haul truck, offsite
Cement		Haul truck, offsite
Soil Disposal		Haul truck, offsite
Misc. Deliveries		Flatbed truck, offsite
Base Course		Haul truck, offsite
Bus from parking to staging		Flatbed truck, offsite

Table L.1-3
Applied Construction Mitigation Measures

LAX South Airfield EIR
Construction Emissions - Mitigation Measures

Mitigation Description		Emissions Reduction (%)				
		CO	ROC	NOx	SOx	PM10
Diesel ICEs:	PuriNOx Fuel, Particulate Traps, Injection Timing Retarding	0%	0%	24%	0%	85%
	No Mitigation	0%	0%	0%	0%	0%
	PuriNOx Fuel	0%	0%	14%	0%	63%
	Catalyst	90%	90%	0%	0%	60%
	PuriNOx Fuel + Catalyst	90%	90%	14%	0%	72%
	Particulate Trap (POLA cost info)	0%	0%	0%	0%	90%
	Particulate Trap w/ Catalyst	85%	85%	0%	0%	85%
	Exhaust Gas Recirculation (EGR) + Trap	0%	0%	40%	0%	90%
	PuriNOx Fuel using MARRS fuel info	-	-	-	-	-
	PuriNOx Fuel, Particulate Traps, Injection Timing Retarding	0%	0%	24%	0%	85%
Generators:	Electricity, PuriNOx Fuel, Particulate Traps	33%	33%	46%	33%	83%
	No Mitigation	0%	0%	0%	0%	0%
	PuriNOx Fuel	0%	0%	14%	0%	63%
	PuriNOx Fuel + Catalyst	90%	90%	14%	0%	72%
	Propane + Catalyst + AFRC	94%	89%	99%	98%	70%
	Natural gas + Catalyst + AFRC	94%	95%	99%	99%	80%
	Partial Electricity/Utility Pole	60%	60%	60%	60%	60%
	All Electric/Alternative Energy	99%	99%	99%	99%	99%
	PuriNOx Fuel using MARRS fuel info	-	-	-	-	-
	Electricity, PuriNOx Fuel, Particulate Traps	33%	33%	46%	33%	83%
Fugitive Dust:	Soil Stabilizers	0%	0%	0%	0%	63%
	No Mitigation (Assumes Watering, per Rule 403)	0%	0%	0%	0%	50%
	100% Mitigation	0%	0%	0%	0%	100%
	Soil stabilizers (Beyond Watering)	0%	0%	0%	0%	65%
	Soil Stabilizers	0%	0%	0%	0%	63%
Equip. Maint.:	No Mitigation	0%	0%	0%	0%	0%
	No Mitigation	0%	0%	0%	0%	0%
	Preventive Maintenance Program	5%	5%	5%	5%	5%

Notes:
Alternative D Construction Schedule Version: 21 May 2003
'Emissions Reduction (tons)' represents total emissions reduction over life of projec

This page intentionally left blank.

Table L.1-4
Construction Equipment Calculations - Parameters and Emissions

LAX South Airfield EIR
Construction Emissions - Summary of Equipment Specs and Emission Factors

This worksheet calculates monthly, quarterly, and annual emissions based on HNTB construction schedule and equipment inventory,
and emission factors and other equipment data provided in the "EquipmentSpecs" worksheet based on CDM data.
Generators were not included in the HNTB inventory and thus, emissions are based solely on the CDM analysis.
All emissions calculations are consistent with the prior CDM anlaysis.

On-Site Equipment				Quarter 1																				
				April '05								May '05								June '05				
Crew / Crew Members per Shift		No. of	Max.	No. of	Monthly	Monthly Emissions (lb/month)						No. of	Monthly	Monthly Emissions (lb/month)						No. of	Monthly	Monthly Emiss		
on-/off-road	Equipment	Pieces	Daily Hrs.	Crews	Hours	CO	ROC	NOx	SOx	PM-10	Fugitive	Crews	Hours	CO	ROC	NOx	SOx	PM-10	Fugitive	Crews	Hours	CO	ROC	NOx
Administrative Support / 14				1								1								1				
on	Crew Van	1	6		0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		150	58.4755	4.5268	7.2021	0.0522	0.2510	1.4470		150	58.4755	4.5268	7.2021
on	SUV	1	4		50	19.4918	1.5089	2.4007	0.0174	0.0837	0.4823		100	38.9837	3.0179	4.8014	0.0348	0.1673	0.9647		100	38.9837	3.0179	4.8014
on	Pickup	8	6		200	77.9674	6.0357	9.6027	0.0697	0.3347	1.9294		1000	389.8369	30.1786	48.0137	0.3483	1.6733	9.6469		1200	467.8042	36.2143	57.6164
on	Fuel Truck	1	8		25	4.9190	0.9557	10.9221	0.0992	0.4668	0.8560		200	39.3519	7.6455	87.3765	0.7937	3.7346	6.8478		200	39.3519	7.6455	87.3765
off	Mechanics Trucks w/ Crane	2	12		100	15.6246	3.1059	56.1019	0.0796	0.3004	10.7188		500	78.1230	15.5293	280.5094	0.3981	1.5019	53.5940		600	93.7475	18.6352	336.6112
off	Vacum Sweeper	2	18		100	51.9071	4.5335	65.2845	0.0913	0.5552	10.7188		500	259.5356	22.6677	326.4224	0.4564	2.7759	53.5940		900	467.1640	40.8019	587.5603
Environmental Crew / 2				1								1								1				
on	Pickup	1	10		150	58.4755	4.5268	7.2021	0.0522	0.2510	1.4470		250	97.4592	7.5446	12.0034	0.0871	0.4183	2.4117		250	97.4592	7.5446	12.0034
Fence Crew - Subcontractor / 3																								
on	Pickup	1	4			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000
on	Flat Bed Truck	1	4			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000
Miscellaneous Labor Crew / 5				1								3								1				
on	Pickup	1	8		50	19.4918	1.5089	2.4007	0.0174	0.0837	0.4823		600	233.9021	18.1071	28.8082	0.2090	1.0040	5.7881		200	77.9674	6.0357	9.6027
off	CAT 428 Backhoe	1	12		250	71.8892	7.2104	89.3065	0.1105	1.0703	23.7300		900	258.8011	25.9573	321.5034	0.3976	3.8533	85.4279		300	86.2670	8.6524	107.1678
Crusher Crew / 4																								
on	Pickup	1	4			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000
off	CAT 988 Loaders	2	16			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000
off	Crusher	1	16			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000
Survey Crew / 11				1								1								1				
on	Pickup	1	2		50	19.4918	1.5089	2.4007	0.0174	0.0837	0.4823		50	19.4918	1.5089	2.4007	0.0174	0.0837	0.4823		50	19.4918	1.5089	2.4007
on	Crew Van	3	4		300	116.9511	9.0536	14.4041	0.1045	0.5020	2.8941		300	116.9511	9.0536	14.4041	0.1045	0.5020	2.8941		300	116.9511	9.0536	14.4041
Quality Control Team / 6				1								1								1				
on	Pickup	6	10		200	77.9674	6.0357	9.6027	0.0697	0.3347	1.9294		300	116.9511	9.0536	14.4041	0.1045	0.5020	2.8941		1500	584.7553	45.2679	72.0205
Batch Plant Crew / 6												1								1				
on	Pickup	1	4			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		100	38.9837	3.0179	4.8014	0.0348	0.1673	0.9647		100	38.9837	3.0179	4.8014
off	CAT 988 Loaders	2	10			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		250	98.7044	17.5175	320.2797	0.5112	1.9194	50.1238		500	197.4088	35.0349	640.5593
PCCP Paving Crew / 24																				1				
off	Gomaco GP-4000 Paver	1	12			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		144	61.3537	10.8447	199.1207
off	Gomaco GHP-2800	1	2			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		8	2.7529	0.4866	8.9345
off	Gomaco RTP-500 Belt Placers	2	10			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		240	46.2197	9.1876	165.9572
off	Gomaco TC-400 Cure /Texture Rig	1	4			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		48	11.6409	1.1676	14.4612
off	Compressors (Gang Drills)	3	10			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		50	13.5720	1.3612	16.8602
on	Pickup	3	6			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		450	175.4266	13.5804	21.6062
on	1 Ton Flat Beds	2	6			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		300	59.0278	11.4683	131.0648
on	Water Truck	1	2			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		24	1.9952	0.2360	4.3802
off	Walk Behind Saw	2	4			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		96	1.8645	26.7247	2.4860
on	Tri-axle Dump Truck	12	11			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		1584	311.6667	60.5524	692.0222
Grading Crew / 6												1								1				
off	CAT 14H Motor Grader	1	16			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		128	29.4974	5.9246	105.7967	0.1499	0.5685	87.3611		128	29.4974	5.9246	105.7967
off	CAT 615C Scraper	1	8			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		64	20.1702	3.7726	65.2821	0.1036	0.3965	65.1837		64	20.1702	3.7726	65.2821
off	CAT RM350B Reclaimer	1	16			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		80	57.7389	13.3609	199.0165	0.2888	1.1843	0.0000		80	57.7389	13.3609	199.0165
off	CAT CS 583E Compactors	2	18			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		280	125.1023	10.3634	158.3874	0.2236	1.3058	30.0126		280	125.1023	10.3634	158.3874
on	Water Truck	1	4			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		32	2.6603	0.3146	5.8402	0.0635	0.3213	1.0699		32	2.6603	0.3146	5.8402
on	Pickup	1	6			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		150	58.4755	4.5268	7.2021	0.0522	0.2510	1.4470		150	58.4755	4.5268	7.2021
on	Tri-axle Dump Truck	6	20			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		960	188.8889	36.6984	419.4074	3.8095	17.9259	227.5564		960	188.8889	36.6984	419.4074
Electrical Crew / 4												3								2				
off	CAT 428 Backhoe	1	10			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		750	215.6675	21.6311	267.9195	0.3314	3.2110	71.1899		500	143.7784	14.4207	178.6130
off	Ditch Witch RT 55 Trencher	1	10			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		750	155.9042	15.6369	193.6768	0.2395	2.3212	0.0000		500	103.9362	10.4246	129.1178
on	Pickup	2	6			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		900	350.8532	27.1607	43.2123	0.3135	1.5060	8.6822		600	233.9021	18.1071	28.8082
ACP Paving Crew / 9												1								1				
off	Barber-Greene BG260C Paver	1	18			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		36	6.0317	1.1990	21.6574	0.0307	0.1160	0.0000		90	15.0792	2.9975	54.1435
off	CAT CB 634D Rollers	2	18			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		72	31.0969	2.5760	39.3706	0.0556	0.3246	7.7175		180	77.7422	6.4401	98.4265
off	CAT PS 300 B Rubber Tire	1	18			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		36	12.3476	1.2384	15.3392	0.0190	0.1838	0.0000		90	30.8690	3.0961	38.3480
off	CAT IT 14G Loader	1	2			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		4	0.3771	0.0757	1.3525	0.0019	0.0073	2.7300		10	0.9427	0.1894	3.3813
on	Pickup	1	8			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		16	6.2374	0.4829	0.7682	0.0056	0.0268	0.1543		40	15.5935	1.2071	1.9205
on	Flat Bed Truck	1	2			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		4	0.7870	0.1529	1.7475	0.0159	0.0747	0.1370		10	1.9676	0.3823	4.3688

Table L.1-4
Construction Equipment Calculations - Parameters and Emissions

Striping Crew / 3																				1				
on	Paint Truck	1	12			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000
on	Flat Bed Truck	1	4			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		16	3.1481	0.6116	6.9901
off	Parking Lot Paint Machines	3	12			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		24	45.4674	2.3555	0.2191
on	Pickup	1	4			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		8	3.1187	0.2414	0.3841
Jack & Bore Crew / 5				1								2								2				
off	Jack & Bore Machine	1	16		400	58.2874	8.5927	59.2709	0.0750	1.0448	0.0000		800	116.5749	17.1853	118.5418	0.1500	2.0897	0.0000		800	116.5749	17.1853	118.5418
off	CAT 325C L Excavator	1	8		200	114.8063	10.0271	144.3939	0.2019	1.2279	6.1895		400	229.6126	20.0543	288.7878	0.4038	2.4559	12.3790		400	229.6126	20.0543	288.7878
off	CAT 966 Loader	1	8		200	39.7787	7.9627	142.7236	0.2023	0.7660	33.8755		400	79.5574	15.9254	285.4472	0.4046	1.5320	67.7510		400	79.5574	15.9254	285.4472
on	Flat Bed Truck	1	4		100	19.6759	3.8228	43.6883	0.3968	1.8673	3.4239		200	39.3519	7.6455	87.3765	0.7937	3.7346	6.8478		200	39.3519	7.6455	87.3765
on	Pickup	1	4		100	38.9837	3.0179	4.8014	0.0348	0.1673	0.9647		200	77.9674	6.0357	9.6027	0.0697	0.3347	1.9294		200	77.9674	6.0357	9.6027
on	Tri-axle Dump Truck	1	20		500	98.3796	19.1138	218.4414	1.9841	9.3364	118.5190		1000	196.7593	38.2275	436.8827	3.9683	18.6728	237.0379		1000	196.7593	38.2275	436.8827
Bridge Crew / 10																								
on	Pickup	3	4			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000
off	Air Compressor	1	4			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000
off	Walk Behind Saw	1	8			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000
Drainage Crew / 6																				1				
off	CAT 330C L Excavator	1	18			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		112	28.7817	5.4379	103.8877
off	CAT 966 Loader	1	12			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		84	16.7071	3.3443	59.9439
off	CAT CS 531D Compactor	1	12			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		84	36.2797	3.0054	45.9323
on	Flat Bed Truck	1	4			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		28	5.5093	1.0704	12.2327
on	Pickup	1	4			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		100	38.9837	3.0179	4.8014
Saw Crew / 4																								
on	1 Ton Trucks w/ Lift	2	4			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000
on	Water Truck	1	2			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000
off	Walk Behind Saw	4	18			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000
Demolition Crew / 7																								
off	CAT 988 Loaders	2	18			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000
off	Air Compressor	1	12			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000
on	Pickup	1	6			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000
off	Truck/Tractor Low Boys	8	20			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000
Sealing Crew / 6																								
off	Air Compressor	1	4			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000
off	Walk Behind Saw	3	18			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000
on	Pickup	2	4			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000
Milling Crew / 6																								
off	CAT PM 565B Milling Machine	1	16			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000
on	Water Truck	1	8			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000
on	Pickup	1	6			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000
on	Tri-axle Dump Truck	8	20			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000
Lighting - Night Shift												1								1				
off	Light Plants	16	8			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		3200	310.8664	45.8275	316.1115	0.3999	5.5725	0.0000		3200	310.8664	45.8275	316.1115
LAWA/CM Staff				1								1								1				
on	Pickup	8	4		800	311.8695	24.1429	38.4109	0.2787	1.3386	7.7175		800	311.8695	24.1429	38.4109	0.2787	1.3386	7.7175		800	311.8695	24.1429	38.4109
on	Pickup	16	12		3600	1403.4127	108.6429	172.8492	1.2540	6.0238	34.7287		4800	1871.2169	144.8571	230.4656	1.6720	8.0317	46.3050		4800	1871.2169	144.8571	230.4656
Totals				7	7375	2619.37	231.31	1094.21	5.16	25.84	261.09	17	21262	6341.16	640.34	4830.53	17.39	92.04	1160.29	17	25264	7588.45	833.78	6745.10
							Total									**Total**								**Total**
					Gasoline	2105.12	162.96	259.27	1.88	9.04	52.09			3709.69	287.18	456.90	3.31	15.92	91.80			4206.34	325.63	518.07
				--	1250	352.29	41.43	557.08	0.76	4.96	85.23	--	9150	2085.71	256.44	3325.40	4.57	31.32	587.06	--	9912	2450.69	337.02	4329.10
							Total Off-Road									**Total Off-Road**								**Total Off-Road**
				--	6125	2267.08	189.87	537.13	4.40	20.87	175.86	--	12112	4255.45	383.90	1505.13	12.83	60.72	573.23	--	15352	5137.75	496.76	2416.00
							Total On-Road									**Total On-Road**								**Total On-Road**
				41	53901	16548.98	1705.43	12669.84	50.02	253.32	3047.84													
							Quarter 1 -Total																	
					Gasoline	10021.15	775.77	1234.24	8.95	43.01	247.98													
				--	20312	4888.70	634.90	8211.59	11.80	72.50	1324.91													
							Quarter 1 - Off-Road																	
				--	33589	11660.28	1070.53	4458.26	38.22	180.82	1722.93													
			32.99389666				**Quarter 1 - On-Road**																	
							Annual - On-Road																	
				On-Road	Total	65987.79332	7172.71041	46113.98854	409.01535	1930.74859	21608.78505													
				On-Road	Gasoline	46774.96556	3621.00607	5760.96802	41.79407	200.77022	1157.48946													
				On-Road	Diesel	19212.82776	3551.70434	40353.02052	367.22129	1729.97837	20451.29558													

Table L.1-4
Construction Equipment Calculations - Parameters and Emissions

Off-Site Equipment — Quarter 1

Trip Type/Equipment		Days per Year	Months per Year	April '05 Distribution	April '05 Monthly Emissions (lb/month) CO	ROC	NOx	SOx	PM-10	Fugitive
Personal Vehicles										
	Contractor Personnel	312	12	1.89%	825.4000	45.4717	71.8555	0.7809	3.1238	2.9096
	LAWA / CM / Inspectors	312	12	6.85%	396.3598	10.3595	36.8599	0.2266	0.9638	3.1023
Batch Plant Stocking										
	Course Aggregate	75	3	0.00%	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	Fine Aggregate	75	3	0.00%	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	Cement	75	3	0.00%	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Soil Disposal Trucking										
	Soil Disposal	62	2	0.00%	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Miscellaneous Deliveries										
	Misc. Deliveries	312	12	1.89%	75.0400	18.6819	273.3574	3.5138	9.1165	2.9140
Base Course Haul										
	Base Course	102	4	0.00%	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Transport from Parking to Staging Area										
	Bus from parking to staging	312	12	1.89%	7.5040	1.8682	27.3357	0.3514	0.9116	14.0248
Totals					1304.30387	76.38136	409.40847	4.87269	14.11577	22.95068
					Total					
					11933.84181	1488.39559	17034.11031	217.04313	572.46291	326.28936
					Quarter 1					

Trip Type/Equipment		May '05 Distribution	May '05 Monthly Emissions (lb/month) CO	ROC	NOx	SOx	PM-10	Fugitive
Personal Vehicles								
	Contractor Personnel	5.45%	2379.6142	131.0942	207.1582	2.2513	9.0059	8.3883
	LAWA / CM / Inspectors	8.72%	504.4580	13.1849	46.9126	0.2883	1.2267	3.9483
Batch Plant Stocking								
	Course Aggregate	22.58%	1205.5556	300.1344	4391.6219	56.4516	146.4606	55.3280
	Fine Aggregate	0.00%	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	Cement	0.00%	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Soil Disposal Trucking								
	Soil Disposal	0.00%	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Miscellaneous Deliveries								
	Misc. Deliveries	5.45%	216.3392	53.8597	788.0847	10.1303	26.2826	8.4010
Base Course Haul								
	Base Course	1.71%	29.5158	7.3482	107.5208	1.3821	3.5858	0.9537
Transport from Parking to Staging Area								
	Bus from parking to staging	5.45%	21.6339	5.3860	78.8085	1.0130	2.6283	40.4334
Totals			4357.11663	511.00733	5620.10651	71.51680	189.18987	117.45263
			Total					

Trip Type/Equipment		June '05 Distribution	June '05 Monthly Emissions (lb/month) CO	ROC	NOx	SOx	PM-10	Fugitive
Personal Vehicles								
	Contractor Personnel	6.48%	2827.5126	155.7691	246.1501	2.6751	10.7010	9.9671
	LAWA / CM / Inspectors	8.72%	504.4580	13.1849	46.9126	0.2883	1.2267	3.9483
Batch Plant Stocking								
	Course Aggregate	38.71%	2066.6667	514.5161	7528.4946	96.7742	251.0753	94.8479
	Fine Aggregate	0.00%	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	Cement	0.00%	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Soil Disposal Trucking								
	Soil Disposal	0.00%	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Miscellaneous Deliveries								
	Misc. Deliveries	6.48%	257.0592	63.9973	936.4204	12.0371	31.2296	9.9823
Base Course Haul								
	Base Course	34.19%	591.0189	147.1397	2152.9756	27.6752	71.8017	19.0965
Transport from Parking to Staging Area								
	Bus from parking to staging	6.48%	25.7059	6.3997	93.6420	1.2037	3.1230	48.0439
Totals			6272.42131	901.00690	11004.59534	140.65364	369.15728	185.88605
			Total					

Distribution assumptions:
1. Contractor personnel emissions distribution based on percentage of total hours per month.
2. LAWA/CM/Inspectors emissions distribution based on percentage of total hours of LAWA/CM staff per month.
3. Batch plant stocking emissions distribution based on percentage of total batch plant hours with each haul trip type assumed to take three months each.
4. Soil disposal trucking emissions distribution baed on percentage of highest 2 months of tri-axle dump truck hours.
5. Miscellaneous deliveries emissions distribution based on percentage of total hours per month.
6. Base course haul emissions distribution based on percentage of first 4 months of total paving hours.
7. Bus transportation emissions distribution based on percentage of total hours per month.

Generator emissions are calculated by multiplying the appropriate emission factor (per CDM) by the number of hours per day (assumed to be 20), by the number of days per month (25), by the number of pieces (using CDM's inventory), and finally by the number of months per quarter (3).

Generators

Generator		No. of Pieces	Quarter 1 Emissions (lb/quarter) CO	ROC	NOx	SOx	PM-10	Quarter 2 Emissions (lb/quarter) CO	ROC	NOx	SOx	PM-10	Quarter 3 Emissions (lb/quarter) CO	ROC	NOx	SOx	PM-10	Quarter 4 Emissions (lb/quarter) CO	ROC	NOx	SOx	PM-10	CO
Generator, 500kW (CAT 3412TA)		7	7183.60926	1662.30163	26376.517	35.93440786	250.3715787	7183.6093	1662.30163	26376.517	35.9344079	250.37158	7183.609259	1662.30163	26376.517	35.934408	250.371579	7183.60926	1662.3016	26376.517	35.93440786	250.371579	28734.43704

			Quarter 2																								
			July '05								August '05								September '05								
ions (lb/month)			No. of Crews	Monthly Hours	Monthly Emissions (lb/month)						No. of Crews	Monthly Hours	Monthly Emissions (lb/month)						No. of Crews	Monthly Hours	Monthly Emissions (lb/month)						No. of Crews
SOx	PM-10	Fugitive			CO	ROC	NOx	SOx	PM-10	Fugitive			CO	ROC	NOx	SOx	PM-10	Fugitive			CO	ROC	NOx	SOx	PM-10	Fugitive	
			1								1								1								1
0.0522	0.2510	1.4470		150	58.4755	4.5268	7.2021	0.0522	0.2510	1.4470		150	58.4755	4.5268	7.2021	0.0522	0.2510	1.4470		150	58.4755	4.5268	7.2021	0.0522	0.2510	1.4470	
0.0348	0.1673	0.9647		100	38.9837	3.0179	4.8014	0.0348	0.1673	0.9647		100	38.9837	3.0179	4.8014	0.0348	0.1673	0.9647		100	38.9837	3.0179	4.8014	0.0348	0.1673	0.9647	
0.4180	2.0079	11.5762		1200	467.8042	36.2143	57.6164	0.4180	2.0079	11.5762		1200	467.8042	36.2143	57.6164	0.4180	2.0079	11.5762		1200	467.8042	36.2143	57.6164	0.4180	2.0079	11.5762	
0.7937	3.7346	6.8478		200	39.3519	7.6455	87.3765	0.7937	3.7346	6.8478		200	39.3519	7.6455	87.3765	0.7937	3.7346	6.8478		200	39.3519	7.6455	87.3765	0.7937	3.7346	6.8478	
0.4777	1.8023	64.3128		600	93.7475	18.6352	336.6112	0.4777	1.8023	64.3128		600	93.7475	18.6352	336.6112	0.4777	1.8023	64.3128		600	93.7475	18.6352	336.6112	0.4777	1.8023	64.3128	
0.8215	4.9967	96.4691		900	467.1640	40.8019	587.5603	0.8215	4.9967	96.4691		900	467.1640	40.8019	587.5603	0.8215	4.9967	96.4691		900	467.1640	40.8019	587.5603	0.8215	4.9967	96.4691	
			1								1								1								1
0.0871	0.4183	2.4117		250	97.4592	7.5446	12.0034	0.0871	0.4183	2.4117		250	97.4592	7.5446	12.0034	0.0871	0.4183	2.4117		250	97.4592	7.5446	12.0034	0.0871	0.4183	2.4117	
0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
			1								1								1								1
0.0697	0.3347	1.9294		100	38.9837	3.0179	4.8014	0.0348	0.1673	0.9647		100	38.9837	3.0179	4.8014	0.0348	0.1673	0.9647		100	38.9837	3.0179	4.8014	0.0348	0.1673	0.9647	
0.1325	1.2844	28.4760		150	43.1335	4.3262	53.5839	0.0663	0.6422	14.2380		150	43.1335	4.3262	53.5839	0.0663	0.6422	14.2380		150	43.1335	4.3262	53.5839	0.0663	0.6422	14.2380	
			1								1								1								1
0.0000	0.0000	0.0000		100	38.9837	3.0179	4.8014	0.0348	0.1673	0.9647		100	38.9837	3.0179	4.8014	0.0348	0.1673	0.9647		100	38.9837	3.0179	4.8014	0.0348	0.1673	0.9647	
0.0000	0.0000	0.0000		100	39.4818	7.0070	128.1119	0.2045	0.7678	20.0495		800	315.8541	56.0559	1024.8949	1.6358	6.1421	160.3963		800	315.8541	56.0559	1024.8949	1.6358	6.1421	160.3963	
0.0000	0.0000	0.0000		10	5.3518	1.0010	17.3213	0.0275	0.1052	0.0000		400	214.0706	40.0396	692.8526	1.0998	4.2078	0.0000		400	214.0706	40.0396	692.8526	1.0998	4.2078	0.0000	
			1								1								1								1
0.0174	0.0837	0.4823		50	19.4918	1.5089	2.4007	0.0174	0.0837	0.4823		50	19.4918	1.5089	2.4007	0.0174	0.0837	0.4823		50	19.4918	1.5089	2.4007	0.0174	0.0837	0.4823	
0.1045	0.5020	2.8941		300	116.9511	9.0536	14.4041	0.1045	0.5020	2.8941		300	116.9511	9.0536	14.4041	0.1045	0.5020	2.8941		300	116.9511	9.0536	14.4041	0.1045	0.5020	2.8941	
			1								1								1								1
0.5225	2.5099	14.4703		1500	584.7553	45.2679	72.0205	0.5225	2.5099	14.4703		1500	584.7553	45.2679	72.0205	0.5225	2.5099	14.4703		1500	584.7553	45.2679	72.0205	0.5225	2.5099	14.4703	
			1								1								1								1
0.0348	0.1673	0.9647		100	38.9837	3.0179	4.8014	0.0348	0.1673	0.9647		100	38.9837	3.0179	4.8014	0.0348	0.1673	0.9647		100	38.9837	3.0179	4.8014	0.0348	0.1673	0.9647	
1.0223	3.8388	100.2477		500	197.4088	35.0349	640.5593	1.0223	3.8388	100.2477		500	197.4088	35.0349	640.5593	1.0223	3.8388	100.2477		500	197.4088	35.0349	640.5593	1.0223	3.8388	100.2477	
			1								1								1								1
0.3179	1.1921	0.0000		144	61.3537	10.8447	199.1207	0.3179	1.1921	0.0000		144	61.3537	10.8447	199.1207	0.3179	1.1921	0.0000		300	127.8201	22.5932	414.8347	0.6624	2.4836	0.0000	
0.0143	0.0535	0.0000		8	2.7529	0.4866	8.9345	0.0143	0.0535	0.0000		8	2.7529	0.4866	8.9345	0.0143	0.0535	0.0000		50	17.2057	3.0412	55.8403	0.0892	0.3343	0.0000	
0.2355	0.8886	0.0000		240	46.2197	9.1876	165.9572	0.2355	0.8886	0.0000		240	46.2197	9.1876	165.9572	0.2355	0.8886	0.0000		500	96.2911	19.1408	345.7441	0.4906	1.8512	0.0000	
0.0179	0.1733	0.0000		48	11.6409	1.1676	14.4612	0.0179	0.1733	0.0000		48	11.6409	1.1676	14.4612	0.0179	0.1733	0.0000		100	24.2518	2.4324	30.1275	0.0373	0.3611	0.0000	
0.0209	0.2021	0.0000		50	13.5720	1.3612	16.8602	0.0209	0.2021	0.0000		50	13.5720	1.3612	16.8602	0.0209	0.2021	0.0000		750	203.5793	20.4186	252.9026	0.3128	3.0311	0.0000	
0.1567	0.7530	4.3411		450	175.4266	13.5804	21.6062	0.1567	0.7530	4.3411		450	175.4266	13.5804	21.6062	0.1567	0.7530	4.3411		450	175.4266	13.5804	21.6062	0.1567	0.7530	4.3411	
1.1905	5.6019	10.2717		300	59.0278	11.4683	131.0648	1.1905	5.6019	10.2717		300	59.0278	11.4683	131.0648	1.1905	5.6019	10.2717		300	59.0278	11.4683	131.0648	1.1905	5.6019	10.2717	
0.0476	0.2410	0.8024		24	1.9952	0.2360	4.3802	0.0476	0.2410	0.8024		24	1.9952	0.2360	4.3802	0.0476	0.2410	0.8024		50	4.1567	0.4916	9.1253	0.0992	0.5021	1.6717	
0.3108	0.1554	0.0000		96	1.8645	26.7247	2.4860	0.3108	0.1554	0.0000		96	1.8645	26.7247	2.4860	0.3108	0.1554	0.0000		200	3.8844	55.6764	5.1792	0.6474	0.3237	0.0000	
6.2857	29.5778	375.4681		1584	311.6667	60.5524	692.0222	6.2857	29.5778	375.4681		1584	311.6667	60.5524	692.0222	6.2857	29.5778	375.4681		3300	649.3056	126.1508	1441.7130	13.0952	61.6204	782.2252	
			1								3								4								5
0.1499	0.5685	87.3611		128	29.4974	5.9246	105.7967	0.1499	0.5685	87.3611		1200	276.5383	55.5431	991.8440	1.4053	5.3292	819.0104		1600	368.7178	74.0575	1322.4587	1.8737	7.1056	1092.0139	
0.1036	0.3965	65.1837		64	20.1702	3.7726	65.2821	0.1036	0.3965	65.1837		600	189.0957	35.3683	612.0198	0.9715	3.7169	611.0971		800	252.1276	47.1577	816.0264	1.2953	4.9558	814.7962	
0.2888	1.1843	0.0000		80	57.7389	13.3609	199.0165	0.2888	1.1843	0.0000		400	288.6946	66.8045	995.0824	1.4441	5.9217	0.0000		400	288.6946	66.8045	995.0824	1.4441	5.9217	0.0000	
0.2236	1.3058	30.0126		280	125.1023	10.3634	158.3874	0.2236	1.3058	30.0126		2700	1206.3437	99.9324	1527.3072	2.1558	12.5913	289.4074		3600	1608.4583	133.2432	2036.4096	2.8744	16.7884	385.8765	
0.0635	0.3213	1.0699		32	2.6603	0.3146	5.8402	0.0635	0.3213	1.0699		300	24.9405	2.9497	54.7520	0.5952	3.0126	10.0303		400	33.2540	3.9330	73.0026	0.7937	4.0168	13.3738	
0.0522	0.2510	1.4470		150	58.4755	4.5268	7.2021	0.0522	0.2510	1.4470		450	175.4266	13.5804	21.6062	0.1567	0.7530	4.3411		600	233.9021	18.1071	28.8082	0.2090	1.0040	5.7881	
3.8095	17.9259	227.5564			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		9000	1770.8333	344.0476	3931.9444	35.7143	168.0556	2133.3414		12000	2361.1111	458.7302	5242.5926	47.6190	224.0741	2844.4552	
			1								1								5								6
0.2209	2.1407	47.4600		50	14.3778	1.4421	17.8613	0.0221	0.2141	4.7460		250	71.8892	7.2104	89.3065	0.1105	1.0703	23.7300		1250	359.4459	36.0518	446.5326	0.5523	5.3517	118.6499	
0.1597	1.5475	0.0000		50	10.3936	1.0425	12.9118	0.0160	0.1547	0.0000		250	51.9681	5.2123	64.5589	0.0798	0.7737	0.0000		1250	259.8404	26.0615	322.7946	0.3992	3.8687	0.0000	
0.2090	1.0040	5.7881		300	116.9511	9.0536	14.4041	0.1045	0.5020	2.8941		300	116.9511	9.0536	14.4041	0.1045	0.5020	2.8941		1500	584.7553	45.2679	72.0205	0.5225	2.5099	14.4703	
											1								1								1
0.0768	0.2899	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		90	15.0792	2.9975	54.1435	0.0768	0.2899	0.0000		90	15.0792	2.9975	54.1435	0.0768	0.2899	0.0000	
0.1389	0.8114	19.2938			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		180	77.7422	6.4401	98.4265	0.1389	0.8114	19.2938		180	77.7422	6.4401	98.4265	0.1389	0.8114	19.2938	
0.0474	0.4596	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		90	30.8690	3.0961	38.3480	0.0474	0.4596	0.0000		90	30.8690	3.0961	38.3480	0.0474	0.4596	0.0000	
0.0048	0.0182	6.8251			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		10	0.9427	0.1894	3.3813	0.0048	0.0182	6.8251		10	0.9427	0.1894	3.3813	0.0048	0.0182	6.8251	
0.0139	0.0669	0.3859			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		40	15.5935	1.2071	1.9205	0.0139	0.0669	0.3859		40	15.5935	1.2071	1.9205	0.0139	0.0669	0.3859	
0.0397	0.1867	0.3424			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		10	1.9676	0.3823	4.3688	0.0397	0.1867	0.3424		10	1.9676	0.3823	4.3688	0.0397	0.1867	0.3424	

Table L.1-4
Construction Equipment Calculations - Parameters and Emissions

											1																1
0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
0.0635	0.2988	0.5478			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		16	3.1481	0.6116	6.9901	0.0635	0.2988	0.5478			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
0.0274	0.0137	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		24	45.4674	2.3555	0.2191	0.0274	0.0137	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
0.0028	0.0134	0.0772			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		8	3.1187	0.2414	0.3841	0.0028	0.0134	0.0772			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
0.1500	2.0897	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
0.4038	2.4559	12.3790			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
0.4046	1.5320	67.7510			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
0.7937	3.7346	6.8478			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
0.0697	0.3347	1.9294			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
3.9683	18.6728	237.0379			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
																			1								1
0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		300	116.9511	9.0536	14.4041	0.1045	0.5020	2.8941	
0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		100	27.1439	2.7225	33.7203	0.0417	0.4041	0.0000	
0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		200	3.8844	55.6764	5.1792	0.6474	0.3237	0.0000	
			1								3								3								2
0.1485	0.5470	3.6089		450	115.6409	21.8487	417.4058	0.5968	2.1976	14.5000		1350	346.9227	65.5461	1252.2173	1.7904	6.5928	43.4999		1350	346.9227	65.5461	1252.2173	1.7904	6.5928	43.4999	
0.0850	0.3217	14.2277		300	59.6681	11.9441	214.0854	0.3035	1.1490	50.8133		900	179.0042	35.8322	642.2563	0.9104	3.4469	152.4398		900	179.0042	35.8322	642.2563	0.9104	3.4469	152.4398	
0.0648	0.3787	9.0038		300	129.5703	10.7335	164.0441	0.2315	1.3524	32.1564		900	388.7108	32.2004	492.1323	0.6946	4.0572	96.4691		900	388.7108	32.2004	492.1323	0.6946	4.0572	96.4691	
0.1111	0.5228	0.9587		100	19.6759	3.8228	43.6883	0.3968	1.8673	3.4239		300	59.0278	11.4683	131.0648	1.1905	5.6019	10.2717		300	59.0278	11.4683	131.0648	1.1905	5.6019	10.2717	
0.0348	0.1673	0.9647		100	38.9837	3.0179	4.8014	0.0348	0.1673	0.9647		300	116.9511	9.0536	14.4041	0.1045	0.5020	2.8941		300	116.9511	9.0536	14.4041	0.1045	0.5020	2.8941	
											3								2								1
0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		600	368.5000	13.3016	32.6138	0.1931	0.8479	20.8675		400	245.6667	8.8677	21.7425	0.1287	0.5653	13.9117	
0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		150	12.4702	1.4749	27.3760	0.2976	1.5063	5.0152		100	8.3135	0.9832	18.2507	0.1984	1.0042	3.3434	
0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		5400	104.8788	1503.2628	139.8384	17.4798	8.7399	0.0000		3600	69.9192	1002.1752	93.2256	11.6532	5.8266	0.0000	
											2								2								1
0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		1800	710.6716	126.1258	2306.0136	3.6804	13.8197	360.8917		1800	710.6716	126.1258	2306.0136	3.6804	13.8197	360.8917	
0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		600	162.8635	16.3349	202.3221	0.2502	2.4249	0.0000		600	162.8635	16.3349	202.3221	0.2502	2.4249	0.0000	
0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		300	116.9511	9.0536	14.4041	0.1045	0.5020	2.8941		300	116.9511	9.0536	14.4041	0.1045	0.5020	2.8941	
0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		8000	3493.9447	762.4036	11214.1381	17.4777	71.0698	857.5034		8000	3493.9447	762.4036	11214.1381	17.4777	71.0698	857.5034	
0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
																			1								1
0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		144	129.9126	30.0620	447.7871	0.6499	2.6648	0.0000	
0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		72	5.9857	0.7079	13.1405	0.1429	0.7230	2.4073	
0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		54	21.0512	1.6296	2.5927	0.0188	0.0904	0.5209	
0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		1440	283.3333	55.0476	629.1111	5.7143	26.8889	341.3346	
			1								1								1								1
0.3999	5.5725	0.0000		3200	310.8664	45.8275	316.1115	0.3999	5.5725	0.0000		3200	310.8664	45.8275	316.1115	0.3999	5.5725	0.0000		3200	310.8664	45.8275	316.1115	0.3999	5.5725	0.0000	
			1								1								1								1
0.2787	1.3386	7.7175		800	311.8695	24.1429	38.4109	0.2787	1.3386	7.7175		800	311.8695	24.1429	38.4109	0.2787	1.3386	7.7175		800	311.8695	24.1429	38.4109	0.2787	1.3386	7.7175	
1.6720	8.0317	46.3050		4800	1871.2169	144.8571	230.4656	1.6720	8.0317	46.3050		4800	1871.2169	144.8571	230.4656	1.6720	8.0317	46.3050		4800	1871.2169	144.8571	230.4656	1.6720	8.0317	46.3050	
27.47	135.44	1626.46	13	20438	6364.89	682.24	5308.59	18.29	87.74	1078.78	24	55662	16478.58	3912.44	30429.96	105.53	408.58	6398.63	29	66880	19706.21	3967.22	36005.84	129.80	548.05	8539.73	29
			Total								**Total**								**Total**								
3.76	18.05	104.09		10450.00	4073.80	315.37	501.74	3.64	17.49	100.81			4401.26	340.72	542.07	3.93	18.89	108.91			5065.54	392.14	623.89	4.53	21.74	125.35	
6.47	36.22	652.61	--	7748	1856.72	282.84	3842.47	5.87	28.91	580.09	--	31880	9421.27	3117.35	24783.55	55.19	171.01	3715.83	--	35314	10890.17	2889.20	27579.40	54.27	191.79	4383.92	--
			Total Off-Road								**Total Off-Road**								**Total Off-Road**								
21.00	99.22	973.85	--	12690	4508.17	399.41	1466.12	12.42	58.83	498.69	--	23782	7057.31	795.10	5646.41	50.35	237.57	2682.80	--	31566	8816.04	1078.02	8426.44	75.53	356.26	4155.81	--
			Total On-Road								**Total On-Road**								**Total On-Road**								
			66	142980	42549.68	8561.91	71744.39	253.62	1044.38	16017.14																	68
			Quarter 2 -Total																								
				Gasoline	13540.59	1048.22	1667.71	12.10	58.12	335.07																	
			--	74942	22168.16	6289.39	56205.42	115.32	391.72	8679.85																	--
			Quarter 2 - Off-Road																								
			--	68038	20381.52	2272.52	15538.97	138.30	652.66	7337.30																	--
			Quarter 2 - On-Road																								

Table L.1-4
Construction Equipment Calculations - Parameters and Emissions

Quarter 2																											
July '05							August '05							September '05							October '05						
	Monthly Emissions (lb/month)							Monthly Emissions (lb/month)							Monthly Emissions (lb/month)							Monthly Emissions (lb/month)					
Distribution	CO	ROC	NOx	SOx	PM-10	Fugitive	Distribution	CO	ROC	NOx	SOx	PM-10	Fugitive	Distribution	CO	ROC	NOx	SOx	PM-10	Fugitive	Distribution	CO	ROC	NOx	SOx	PM-10	Fugitive
5.24%	2287.3932	126.0137	199.1298	2.1641	8.6569	8.0632	14.28%	6229.6156	343.1928	542.3214	5.8938	23.5766	21.9597	17.16%	7485.1189	412.3591	651.6197	7.0816	28.3282	26.3854	17.59%	7671.7992	422.6434	667.8712	7.2582	29.0347	27.0435
8.72%	504.4580	13.1849	46.9126	0.2883	1.2267	3.9483	8.72%	504.4580	13.1849	46.9126	0.2883	1.2267	3.9483	8.72%	504.4580	13.1849	46.9126	0.2883	1.2267	3.9483	8.72%	504.4580	13.1849	46.9126	0.2883	1.2267	3.9483
38.71%	2066.6667	514.5161	7528.4946	96.7742	251.0753	94.8479	0.00%	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.00%	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.00%	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.00%	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	33.33%	771.1728	191.9907	2809.2438	36.1111	93.6883	68.8197	33.33%	771.1728	191.9907	2809.2438	36.1111	93.6883	68.8197	33.33%	771.1728	191.9907	2809.2438	36.1111	93.6883	68.8197
0.00%	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.00%	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.00%	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.00%	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.00%	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.00%	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.00%	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	52.79%	4160.3811	1035.7660	15155.5193	194.8149	505.4365	130.2593
5.24%	207.9550	51.7724	757.5428	9.7377	25.2640	8.0754	14.28%	566.3565	140.9998	2063.1347	26.5203	68.8055	21.9931	17.16%	680.4987	169.4166	2478.9344	31.8652	82.6725	26.4255	17.59%	697.4705	173.6419	2540.7595	32.6599	84.7343	27.0845
29.92%	517.2294	128.7691	1884.1736	24.2199	62.8372	16.7123	34.19%	591.0189	147.1397	2152.9756	27.6752	71.8017	19.0965	0.00%	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.00%	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5.24%	20.7955	5.1772	75.7543	0.9738	2.5264	38.8664	14.28%	56.6356	14.1000	206.3135	2.6520	6.8806	105.8509	17.16%	68.0499	16.9417	247.8934	3.1865	8.2672	127.1839	17.59%	69.7471	17.3642	254.0760	3.2660	8.4734	130.3559
	5604.49783	839.43340	10492.00769	134.15805	351.58648	170.51356		8719.25741	850.60785	7820.90149	99.14081	265.97938	241.66823		9509.29833	803.89293	6234.60393	78.53279	214.18283	252.76283		13875.02864	1854.59110	21474.38231	274.39853	722.59391	387.51126
	Total							Total							Total							Total					
	23833.05357	2493.93418	24547.51311	311.83166	831.74869	664.94462																32737.52126	4320.62004	49828.83471	636.45952	1676.65431	932.75321
	Quarter 2																					Quarter 3					

Annual Emissions (lb/year)			
ROC	NOx	SOx	PM-10
6649.20652	105506.068	143.7376315	1001.486315

Table L.1-4
Construction Equipment Calculations - Parameters and Emissions

Quarter 3																											
October '05							November '05								December '05								January '06				
Monthly	Monthly Emissions (lb/month)						No. of	Monthly	Monthly Emissions (lb/month)						No. of	Monthly	Monthly Emissions (lb/month)						No. of	Monthly	Monthly Emissio		
Hours	CO	ROC	NOx	SOx	PM-10	Fugitive	Crews	Hours	CO	ROC	NOx	SOx	PM-10	Fugitive	Crews	Hours	CO	ROC	NOx	SOx	PM-10	Fugitive	Crews	Hours	CO	ROC	NOx
							1								1								1				
150	58.4755	4.5268	7.2021	0.0522	0.2510	1.4470		150	58.4755	4.5268	7.2021	0.0522	0.2510	1.4470		150	58.4755	4.5268	7.2021	0.0522	0.2510	1.4470		150	58.4755	4.5268	7.2021
100	38.9837	3.0179	4.8014	0.0348	0.1673	0.9647		100	38.9837	3.0179	4.8014	0.0348	0.1673	0.9647		100	38.9837	3.0179	4.8014	0.0348	0.1673	0.9647		100	38.9837	3.0179	4.8014
1200	467.8042	36.2143	57.6164	0.4180	2.0079	11.5762		1200	467.8042	36.2143	57.6164	0.4180	2.0079	11.5762		1200	467.8042	36.2143	57.6164	0.4180	2.0079	11.5762		1000	389.8369	30.1786	48.0137
200	39.3519	7.6455	87.3765	0.7937	3.7346	6.8478		200	39.3519	7.6455	87.3765	0.7937	3.7346	6.8478		200	39.3519	7.6455	87.3765	0.7937	3.7346	6.8478		200	39.3519	7.6455	87.3765
600	93.7475	18.6352	336.6112	0.4777	1.8023	64.3128		600	93.7475	18.6352	336.6112	0.4777	1.8023	64.3128		600	93.7475	18.6352	336.6112	0.4777	1.8023	64.3128		500	78.1230	15.5293	280.5094
900	467.1640	40.8019	587.5603	0.8215	4.9967	96.4691		900	467.1640	40.8019	587.5603	0.8215	4.9967	96.4691		900	467.1640	40.8019	587.5603	0.8215	4.9967	96.4691		500	259.5356	22.6677	326.4224
							1								1								1				
250	97.4592	7.5446	12.0034	0.0871	0.4183	2.4117		250	97.4592	7.5446	12.0034	0.0871	0.4183	2.4117		250	97.4592	7.5446	12.0034	0.0871	0.4183	2.4117		250	97.4592	7.5446	12.0034
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000
							1								1								2				
100	38.9837	3.0179	4.8014	0.0348	0.1673	0.9647		100	38.9837	3.0179	4.8014	0.0348	0.1673	0.9647		100	38.9837	3.0179	4.8014	0.0348	0.1673	0.9647		400	155.9347	12.0714	19.2055
150	43.1335	4.3262	53.5839	0.0663	0.6422	14.2380		150	43.1335	4.3262	53.5839	0.0663	0.6422	14.2380		150	43.1335	4.3262	53.5839	0.0663	0.6422	14.2380		600	172.5340	17.3049	214.3356
							1								1												
100	38.9837	3.0179	4.8014	0.0348	0.1673	0.9647		100	38.9837	3.0179	4.8014	0.0348	0.1673	0.9647		100	38.9837	3.0179	4.8014	0.0348	0.1673	0.9647			0.0000	0.0000	0.0000
800	315.8541	56.0559	1024.8949	1.6358	6.1421	160.3963		800	315.8541	56.0559	1024.8949	1.6358	6.1421	160.3963		100	39.4818	7.0070	128.1119	0.2045	0.7678	20.0495			0.0000	0.0000	0.0000
400	214.0706	40.0396	692.8526	1.0998	4.2078	0.0000		400	214.0706	40.0396	692.8526	1.0998	4.2078	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000
							1								1								1				
50	19.4918	1.5089	2.4007	0.0174	0.0837	0.4823		50	19.4918	1.5089	2.4007	0.0174	0.0837	0.4823		50	19.4918	1.5089	2.4007	0.0174	0.0837	0.4823		50	19.4918	1.5089	2.4007
300	116.9511	9.0536	14.4041	0.1045	0.5020	2.8941		300	116.9511	9.0536	14.4041	0.1045	0.5020	2.8941		300	116.9511	9.0536	14.4041	0.1045	0.5020	2.8941		200	77.9674	6.0357	9.6027
							1								1								1				
1500	584.7553	45.2679	72.0205	0.5225	2.5099	14.4703		1000	389.8369	30.1786	48.0137	0.3483	1.6733	9.6469		600	233.9021	18.1071	28.8082	0.2090	1.0040	5.7881		600	233.9021	18.1071	28.8082
							1								1								1				
100	38.9837	3.0179	4.8014	0.0348	0.1673	0.9647		100	38.9837	3.0179	4.8014	0.0348	0.1673	0.9647		100	38.9837	3.0179	4.8014	0.0348	0.1673	0.9647		100	38.9837	3.0179	4.8014
500	197.4088	35.0349	640.5593	1.0223	3.8388	100.2477		500	197.4088	35.0349	640.5593	1.0223	3.8388	100.2477		500	197.4088	35.0349	640.5593	1.0223	3.8388	100.2477		250	98.7044	17.5175	320.2797
							1								1												
300	127.8201	22.5932	414.8347	0.6624	2.4836	0.0000		144	61.3537	10.8447	199.1207	0.3179	1.1921	0.0000		144	61.3537	10.8447	199.1207	0.3179	1.1921	0.0000			0.0000	0.0000	0.0000
50	17.2057	3.0412	55.8403	0.0892	0.3343	0.0000		8	2.7529	0.4866	8.9345	0.0143	0.0535	0.0000		8	2.7529	0.4866	8.9345	0.0143	0.0535	0.0000			0.0000	0.0000	0.0000
500	96.2911	19.1408	345.7441	0.4906	1.8512	0.0000		240	46.2197	9.1876	165.9572	0.2355	0.8886	0.0000		240	46.2197	9.1876	165.9572	0.2355	0.8886	0.0000			0.0000	0.0000	0.0000
100	24.2518	2.4324	30.1275	0.0373	0.3611	0.0000		48	11.6409	1.1676	14.4612	0.0179	0.1733	0.0000		48	11.6409	1.1676	14.4612	0.0179	0.1733	0.0000			0.0000	0.0000	0.0000
750	203.5793	20.4186	252.9026	0.3128	3.0311	0.0000		50	13.5720	1.3612	16.8602	0.0209	0.2021	0.0000		50	13.5720	1.3612	16.8602	0.0209	0.2021	0.0000			0.0000	0.0000	0.0000
450	175.4266	13.5804	21.6062	0.1567	0.7530	4.3411		450	175.4266	13.5804	21.6062	0.1567	0.7530	4.3411		450	175.4266	13.5804	21.6062	0.1567	0.7530	4.3411			0.0000	0.0000	0.0000
300	59.0278	11.4683	131.0648	1.1905	5.6019	10.2717		300	59.0278	11.4683	131.0648	1.1905	5.6019	10.2717		300	59.0278	11.4683	131.0648	1.1905	5.6019	10.2717			0.0000	0.0000	0.0000
50	4.1567	0.4916	9.1253	0.0992	0.5021	1.6717		24	1.9952	0.2360	4.3802	0.0476	0.2410	0.8024		24	1.9952	0.2360	4.3802	0.0476	0.2410	0.8024			0.0000	0.0000	0.0000
200	3.8844	55.6764	5.1792	0.6474	0.3237	0.0000		96	1.8645	26.7247	2.4860	0.3108	0.1554	0.0000		96	1.8645	26.7247	2.4860	0.3108	0.1554	0.0000			0.0000	0.0000	0.0000
3300	649.3056	126.1508	1441.7130	13.0952	61.6204	782.2252		1584	311.6667	60.5524	692.0222	6.2857	29.5778	375.4681		1584	311.6667	60.5524	692.0222	6.2857	29.5778	375.4681			0.0000	0.0000	0.0000
							5								2												
2000	460.8972	92.5719	1653.0734	2.3421	8.8820	1365.0174		2000	460.8972	92.5719	1653.0734	2.3421	8.8820	1365.0174		800	184.3589	37.0287	661.2294	0.9368	3.5528	546.0069			0.0000	0.0000	0.0000
1000	315.1595	58.9471	1020.0330	1.6191	6.1948	1018.4952		1000	315.1595	58.9471	1020.0330	1.6191	6.1948	1018.4952		400	126.0638	23.5789	408.0132	0.6476	2.4779	407.3981			0.0000	0.0000	0.0000
400	288.6946	66.8045	995.0824	1.4441	5.9217	0.0000		400	288.6946	66.8045	995.0824	1.4441	5.9217	0.0000		120	86.6084	20.0414	298.5247	0.4332	1.7765	0.0000			0.0000	0.0000	0.0000
4500	2010.5729	166.5540	2545.5120	3.5930	20.9855	482.3457		4500	2010.5729	166.5540	2545.5120	3.5930	20.9855	482.3457		1800	804.2291	66.6216	1018.2048	1.4372	8.3942	192.9383			0.0000	0.0000	0.0000
500	41.5675	4.9162	91.2533	0.9921	5.0209	16.7172		500	41.5675	4.9162	91.2533	0.9921	5.0209	16.7172		200	16.6270	1.9665	36.5013	0.3968	2.0084	6.6869			0.0000	0.0000	0.0000
750	292.3776	22.6339	36.0103	0.2612	1.2550	7.2352		750	292.3776	22.6339	36.0103	0.2612	1.2550	7.2352		300	116.9511	9.0536	14.4041	0.1045	0.5020	2.8941			0.0000	0.0000	0.0000
15000	2951.3889	573.4127	6553.2407	59.5238	280.0926	3555.5691		15000	2951.3889	573.4127	6553.2407	59.5238	280.0926	3555.5691		6000	1180.5556	229.3651	2621.2963	23.8095	112.0370	1422.2276			0.0000	0.0000	0.0000
							3								1								1				
1500	431.3351	43.2622	535.8391	0.6627	6.4221	142.3799		750	215.6675	21.6311	267.9195	0.3314	3.2110	71.1899		750	215.6675	21.6311	267.9195	0.3314	3.2110	71.1899		100	28.7557	2.8841	35.7226
1500	311.8085	31.2738	387.3535	0.4791	4.6425	0.0000		750	155.9042	15.6369	193.6768	0.2395	2.3212	0.0000		750	155.9042	15.6369	193.6768	0.2395	2.3212	0.0000		100	20.7872	2.0849	25.8236
1800	701.7063	54.3214	86.4246	0.6270	3.0119	17.3644		900	350.8532	27.1607	43.2123	0.3135	1.5060	8.6822		900	350.8532	27.1607	43.2123	0.3135	1.5060	8.6822		900	350.8532	27.1607	43.2123
							1								1												
450	75.3959	14.9873	270.7176	0.3842	1.4495	0.0000		450	75.3959	14.9873	270.7176	0.3842	1.4495	0.0000		450	75.3959	14.9873	270.7176	0.3842	1.4495	0.0000			0.0000	0.0000	0.0000
900	388.7108	32.2004	492.1323	0.6946	4.0572	96.4691		900	388.7108	32.2004	492.1323	0.6946	4.0572	96.4691		900	388.7108	32.2004	492.1323	0.6946	4.0572	96.4691			0.0000	0.0000	0.0000
450	154.3452	15.4806	191.7400	0.2371	2.2980	0.0000		450	154.3452	15.4806	191.7400	0.2371	2.2980	0.0000		450	154.3452	15.4806	191.7400	0.2371	2.2980	0.0000			0.0000	0.0000	0.0000
50	4.7137	0.9468	16.9064	0.0240	0.0908	34.1254		50	4.7137	0.9468	16.9064	0.0240	0.0908	34.1254		50	4.7137	0.9468	16.9064	0.0240	0.0908	34.1254			0.0000	0.0000	0.0000
200	77.9674	6.0357	9.6027	0.0697	0.3347	1.9294		200	77.9674	6.0357	9.6027	0.0697	0.3347	1.9294		200	77.9674	6.0357	9.6027	0.0697	0.3347	1.9294			0.0000	0.0000	0.0000
50	9.8380	1.9114	21.8441	0.1984	0.9336	1.7120		50	9.8380	1.9114	21.8441	0.1984	0.9336	1.7120		50	9.8380	1.9114	21.8441	0.1984	0.9336	1.7120			0.0000	0.0000	0.0000

Table L.1-4
Construction Equipment Calculations - Parameters and Emissions

	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000
16	3.1481	0.6116	6.9901	0.0635	0.2988	0.5478			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000
24	45.4674	2.3555	0.2191	0.0274	0.0137	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000
8	3.1187	0.2414	0.3841	0.0028	0.0134	0.0772			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000
300	116.9511	9.0536	14.4041	0.1045	0.5020	2.8941			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000
100	27.1439	2.7225	33.7203	0.0417	0.4041	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000
200	3.8844	55.6764	5.1792	0.6474	0.3237	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000
							1								1												
900	231.2818	43.6974	834.8116	1.1936	4.3952	28.9999		112	28.7817	5.4379	103.8877	0.1485	0.5470	3.6089		112	28.7817	5.4379	103.8877	0.1485	0.5470	3.6089			0.0000	0.0000	0.0000
600	119.3361	23.8881	428.1708	0.6070	2.2979	101.6265		84	16.7071	3.3443	59.9439	0.0850	0.3217	14.2277		84	16.7071	3.3443	59.9439	0.0850	0.3217	14.2277			0.0000	0.0000	0.0000
600	259.1405	21.4670	328.0882	0.4631	2.7048	64.3128		84	36.2797	3.0054	45.9323	0.0648	0.3787	9.0038		84	36.2797	3.0054	45.9323	0.0648	0.3787	9.0038			0.0000	0.0000	0.0000
200	39.3519	7.6455	87.3765	0.7937	3.7346	6.8478		28	5.5093	1.0704	12.2327	0.1111	0.5228	0.9587		28	5.5093	1.0704	12.2327	0.1111	0.5228	0.9587			0.0000	0.0000	0.0000
200	77.9674	6.0357	9.6027	0.0697	0.3347	1.9294		100	38.9837	3.0179	4.8014	0.0348	0.1673	0.9647		100	38.9837	3.0179	4.8014	0.0348	0.1673	0.9647			0.0000	0.0000	0.0000
															1												
200	122.8333	4.4339	10.8713	0.0644	0.2826	6.9558			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		200	122.8333	4.4339	10.8713	0.0644	0.2826	6.9558			0.0000	0.0000	0.0000
50	4.1567	0.4916	9.1253	0.0992	0.5021	1.6717			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		50	4.1567	0.4916	9.1253	0.0992	0.5021	1.6717			0.0000	0.0000	0.0000
1800	34.9596	501.0876	46.6128	5.8266	2.9133	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		1800	34.9596	501.0876	46.6128	5.8266	2.9133	0.0000			0.0000	0.0000	0.0000
							1																				
900	355.3358	63.0629	1153.0068	1.8402	6.9098	180.4459		900	355.3358	63.0629	1153.0068	1.8402	6.9098	180.4459			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000
300	81.4317	8.1675	101.1610	0.1251	1.2124	0.0000		300	81.4317	8.1675	101.1610	0.1251	1.2124	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000
150	58.4755	4.5268	7.2021	0.0522	0.2510	1.4470		150	58.4755	4.5268	7.2021	0.0522	0.2510	1.4470			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000
4000	1746.9723	381.2018	5607.0691	8.7388	35.5349	428.7517		4000	1746.9723	381.2018	5607.0691	8.7388	35.5349	428.7517			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000
															1								1				
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		100	27.1439	2.7225	33.7203	0.0417	0.4041	0.0000		100	27.1439	2.7225	33.7203
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		1350	26.2197	375.8157	34.9596	4.3700	2.1850	0.0000		1350	26.2197	375.8157	34.9596
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		200	77.9674	6.0357	9.6027	0.0697	0.3347	1.9294		200	77.9674	6.0357	9.6027
							1																				
400	360.8682	83.5056	1243.8530	1.8052	7.4022	0.0000		336	303.1293	70.1447	1044.8365	1.5163	6.2178	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000
200	16.6270	1.9665	36.5013	0.3968	2.0084	6.6869		168	13.9667	1.6519	30.6611	0.3333	1.6870	5.6170			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000
150	58.4755	4.5268	7.2021	0.0522	0.2510	1.4470		126	49.1194	3.8025	6.0497	0.0439	0.2108	1.2155			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000
4000	787.0370	152.9101	1747.5309	15.8730	74.6914	948.1517		3360	661.1111	128.4444	1467.9259	13.3333	62.7407	796.4475			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000
							1								1												
3200	310.8664	45.8275	316.1115	0.3999	5.5725	0.0000		3200	310.8664	45.8275	316.1115	0.3999	5.5725	0.0000		3200	310.8664	45.8275	316.1115	0.3999	5.5725	0.0000			0.0000	0.0000	0.0000
							1								1								1				
800	311.8695	24.1429	38.4109	0.2787	1.3386	7.7175		800	311.8695	24.1429	38.4109	0.2787	1.3386	7.7175		800	311.8695	24.1429	38.4109	0.2787	1.3386	7.7175		800	311.8695	24.1429	38.4109
4800	1871.2169	144.8571	230.4656	1.6720	8.0317	46.3050		4800	1871.2169	144.8571	230.4656	1.6720	8.0317	46.3050		4800	1871.2169	144.8571	230.4656	1.6720	8.0317	46.3050		4800	1871.2169	144.8571	230.4656
68548	19796.95	3374.08	33527.27	138.43	622.19	9854.34	22	57042	17046.01	2452.78	29472.83	116.73	546.01	9021.91	17	35372	9578.11	1983.02	10754.94	56.54	230.01	3607.11	10	13250	4474.10	752.38	1817.68
			Total								**Total**								**Total**								**Total**
	5243.31	405.90	645.78	4.68	22.51	129.75			4532.24	350.86	558.21	4.05	19.45	112.15			4171.25	322.91	513.75	3.73	17.90	103.22			3722.94	288.21	458.53
31024	9822.73	2073.88	22647.08	40.56	160.64	4378.63	--	24202	8418.35	1310.62	19822.62	29.87	136.40	4139.34	--	16036	3655.29	1340.97	6614.48	19.81	56.66	1670.29	--	3500	711.80	456.53	1271.77
			Total Off-Road								**Total Off-Road**								**Total Off-Road**								**Total Off-Road**
37524	9974.21	1300.20	10880.18	97.87	461.54	5475.70	--	32840	8627.67	1142.17	9650.21	86.86	409.61	4882.57	--	19336	5922.82	642.05	4140.46	36.72	173.35	1936.82	--	9750	3762.29	295.85	545.91
			Total On-Road								**Total On-Road**								**Total On-Road**								**Total On-Road**
160962	46421.07	7809.89	73755.04	311.69	1398.20	22483.36																	24	31942	12182.19	1368.96	4518.54
			Quarter 3 -Total																								**Quarter 4 -Total**
Gasoline	13946.80353	1079.66857	1717.73700	12.46166	59.86328	345.12646																		Gasoline	9266.42	717.34	1141.28
71262	21896.38	4725.48	49084.19	90.24	353.71	10188.26																	--	7432	2760.90	623.72	3072.63
			Quarter 3 - Off-Road																								**Quarter 4 - Off-Road**
89700	24524.70	3084.42	24670.85	221.45	1044.50	12295.09																	--	24510	9421.29	745.25	1445.91
			Quarter 3 - On-Road																								**Quarter 4 - On-Road**

Table L.1-4
Construction Equipment Calculations - Parameters and Emissions

Quarter 3													
November '05							December '05						
	Monthly Emissions (lb/month)							Monthly Emissions (lb/month)					
Distribution	CO	ROC	NOx	SOx	PM-10	Fugitive	Distribution	CO	ROC	NOx	SOx	PM-10	Fugitive
14.63%	6384.0633	351.7014	555.7669	6.0399	24.1611	22.5042	9.07%	3958.7863	218.0916	344.6335	3.7454	14.9824	13.9549
8.72%	504.4580	13.1849	46.9126	0.2883	1.2267	3.9483	8.72%	504.4580	13.1849	46.9126	0.2883	1.2267	3.9483
0.00%	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.00%	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.00%	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.00%	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
38.71%	1377.7778	343.0108	5018.9964	64.5161	167.3835	86.0666	38.71%	1377.7778	343.0108	5018.9964	64.5161	167.3835	86.0666
47.21%	3720.8359	926.3371	13554.3352	174.2327	452.0370	116.4974	0.00%	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
14.63%	580.3979	144.4955	2114.2849	27.1778	70.5114	22.5383	9.07%	359.9073	89.6023	1311.0776	16.8531	43.7244	13.9761
0.00%	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.00%	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
14.63%	58.0398	14.4496	211.4285	2.7178	7.0511	108.4752	9.07%	35.9907	8.9602	131.1078	1.6853	4.3724	67.2660
	12625.57255	1793.17918	21501.72455	274.97271	722.37089	360.03002		6236.92007	672.84976	6852.72785	87.08827	231.68951	185.21193
	Total							Total					

Quarter 4													
January '06							February '06						
	Monthly Emissions (lb/month)							Monthly Emissions (lb/month)					
Distribution	CO	ROC	NOx	SOx	PM-10	Fugitive	Distribution	CO	ROC	NOx	SOx	PM-10	Fugitive
3.40%	1482.9220	81.6949	129.0963	1.4030	5.6123	5.2274	2.92%	1274.9772	70.2392	110.9936	1.2062	4.8253	4.4944
8.72%	504.4580	13.1849	46.9126	0.2883	1.2267	3.9483	8.72%	504.4580	13.1849	46.9126	0.2883	1.2267	3.9483
0.00%	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.00%	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.00%	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.00%	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
22.58%	803.7037	200.0896	2927.7479	37.6344	97.6404	50.2055	0.00%	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.00%	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.00%	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3.40%	134.8177	33.5641	491.1166	6.3130	16.3787	5.2353	2.92%	115.9127	28.8576	422.2491	5.4278	14.0820	4.5012
0.00%	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.00%	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3.40%	13.4818	3.3564	49.1117	0.6313	1.6379	25.1972	2.92%	11.5913	2.8858	42.2249	0.5428	1.4082	21.6639
	2939.38318	331.88996	3643.98508	46.27005	122.49597	89.81370		1906.93913	115.16733	622.38018	7.46513	21.54219	34.60774
	Total							Total					
	6087.34378	521.35458	4666.95875	58.52972	157.88874	146.74724							
	Quarter 4												

			Quarter 4																Total Emissions							
			February '06								March '06								Excludes March 2005							
ns (lb/month)			No. of Crews	Monthly Hours	Monthly Emissions (lb/month)						No. of Crews	Monthly Hours	Monthly Emissions (lb/month)						No. of Crews	Monthly Hours	Annual Emissions (lb/year)					
SOx	PM-10	Fugitive			CO	ROC	NOx	SOx	PM-10	Fugitive			CO	ROC	NOx	SOx	PM-10	Fugitive			CO	ROC	NOx	SOx	PM-10	Fugitive
			1								1								12							
0.0522	0.2510	1.4470		150	58.4755	4.5268	7.2021	0.0522	0.2510	1.4470		150	58.4755	4.5268	7.2021	0.0522	0.2510	1.4470		1650	643.2308	49.7946	79.2226	0.5747	2.7609	15.9173
0.0348	0.1673	0.9647		100	38.9837	3.0179	4.8014	0.0348	0.1673	0.9647		100	38.9837	3.0179	4.8014	0.0348	0.1673	0.9647		1150	448.3124	34.7054	55.2157	0.4006	1.9243	11.0939
0.3483	1.6733	9.6469		1000	389.8369	30.1786	48.0137	0.3483	1.6733	9.6469		1000	389.8369	30.1786	48.0137	0.3483	1.6733	9.6469		12600	4911.9444	380.2500	604.9722	4.3889	21.0833	121.5506
0.7937	3.7346	6.8478		200	39.3519	7.6455	87.3765	0.7937	3.7346	6.8478		100	19.6759	3.8228	43.6883	0.3968	1.8673	3.4239		2125	418.1134	81.2335	928.3758	8.4325	39.6798	72.7580
0.3981	1.5019	53.5940		500	78.1230	15.5293	280.5094	0.3981	1.5019	53.5940		200	31.2492	6.2117	112.2037	0.1592	0.6008	21.4376		6000	937.4754	186.3521	3366.1123	4.7767	18.0227	643.1276
0.4564	2.7759	53.5940		500	259.5356	22.6677	326.4224	0.4564	2.7759	53.5940		900	467.1640	40.8019	587.5603	0.8215	4.9967	96.4691		8800	4567.8257	398.9516	5745.0339	8.0323	48.8565	943.2538
			1																11							
0.0871	0.4183	2.4117		120	46.7804	3.6214	5.7616	0.0418	0.2008	1.1576			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		2520	982.3889	76.0500	120.9944	0.8778	4.2167	24.3101
																			0							
0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
			2								2								17							
0.1393	0.6693	3.8587		400	155.9347	12.0714	19.2055	0.1393	0.6693	3.8587		400	155.9347	12.0714	19.2055	0.1393	0.6693	3.8587		2650	1033.0677	79.9732	127.2362	0.9231	4.4342	25.5642
0.2651	2.5688	56.9520		600	172.5340	17.3049	214.3356	0.2651	2.5688	56.9520		600	172.5340	17.3049	214.3356	0.2651	2.5688	56.9520		4150	1193.3604	119.6920	1482.4881	1.8335	17.7678	393.9177
																			6							
0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		600	233.9021	18.1071	28.8082	0.2090	1.0040	5.7881
0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		3400	1342.3798	238.2376	4355.8034	6.9520	26.1038	681.6843
0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		1610	861.6343	161.1593	2788.7317	4.4265	16.9363	0.0000
			1								1								12							
0.0174	0.0837	0.4823		50	19.4918	1.5089	2.4007	0.0174	0.0837	0.4823		50	19.4918	1.5089	2.4007	0.0174	0.0837	0.4823		600	233.9021	18.1071	28.8082	0.2090	1.0040	5.7881
0.0697	0.3347	1.9294		100	38.9837	3.0179	4.8014	0.0348	0.1673	0.9647			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		3000	1169.5106	90.5357	144.0410	1.0450	5.0198	28.9406
			1																11							
0.2090	1.0040	5.7881		300	116.9511	9.0536	14.4041	0.1045	0.5020	2.8941			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		10500	4093.2870	316.8750	504.1435	3.6574	17.5694	101.2921
																			9							
0.0348	0.1673	0.9647			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		900	350.8532	27.1607	43.2123	0.3135	1.5060	8.6822
0.5112	1.9194	50.1238			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		4000	1579.2703	280.2795	5124.4746	8.1788	30.7103	801.9816
																			7							
0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		1320	562.4086	99.4101	1825.2727	2.9144	10.9277	0.0000
0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		140	48.1760	8.5155	156.3530	0.2496	0.9361	0.0000
0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		2200	423.6807	84.2196	1521.2740	2.1588	8.1452	0.0000
0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		440	106.7078	10.7026	132.5610	0.1639	1.5888	0.0000
0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		1750	475.0184	47.6435	590.1060	0.7298	7.0725	0.0000
0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		3150	1227.9861	95.0625	151.2431	1.0972	5.2708	30.3876
0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		2100	413.1944	80.2778	917.4537	8.3333	39.2130	71.9020
0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		220	18.2897	2.1631	40.1515	0.4365	2.2092	7.3556
0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		880	17.0914	244.9762	22.7885	2.8486	1.4243	0.0000
0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		14520	2856.9444	555.0635	6343.5370	57.6190	271.1296	3441.7908
																			22							
0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		7984	1839.9018	369.5469	6599.0689	9.3496	35.4571	5449.1493
0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		3992	1258.1169	235.3170	4071.9717	6.4634	24.7296	4065.8328
0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		1960	1414.6034	327.3421	4875.9037	7.0762	29.0165	0.0000
0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		17940	8015.4838	663.9954	10148.1077	14.3240	83.6624	1922.9514
0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		1996	165.9373	19.6256	364.2832	3.9603	20.0436	66.7350
0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		3300	1286.4616	99.5893	158.4451	1.1495	5.5218	31.8347
0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		58920	11593.0556	2252.3651	25741.1296	233.8095	1100.2037	13966.2752
			1																24							
0.0442	0.4281	9.4920		100	28.7557	2.8841	35.7226	0.0442	0.4281	9.4920			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		6000	1725.3403	173.0486	2143.3563	2.6508	25.6884	569.5195
0.0319	0.3095	0.0000		100	20.7872	2.0849	25.8236	0.0319	0.3095	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		6000	1247.2340	125.0954	1549.4142	1.9163	18.5699	0.0000
0.3135	1.5060	8.6822		900	350.8532	27.1607	43.2123	0.3135	1.5060	8.6822			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		9000	3508.5317	271.6071	432.1230	3.1349	15.0595	86.8218
																			7							
0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		1656	277.4570	55.1531	996.2409	1.4137	5.3340	0.0000
0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		3312	1430.4556	118.4976	1811.0469	2.5563	14.9305	355.0064
0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		1656	567.9904	56.9684	705.6032	0.8727	8.4567	0.0000
0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		184	17.3465	3.4841	62.2157	0.0881	0.3343	125.5816
0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		736	286.9199	22.2114	35.3381	0.2564	1.2315	7.1001
0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		184	36.2037	7.0339	80.3864	0.7302	3.4358	6.3000

Max Monthly Hours by	
Quarter	Month
Quarter 1	June
Quarter 2	September
Quarter 3	October
Quarter 4	January

Table L.1-4
Construction Equipment Calculations - Parameters and Emissions

			1																4							
0.0000	0.0000	0.0000		144	28.3333	5.5048	62.9111	0.5714	2.6889	4.9304			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		144	28.3333	5.5048	62.9111	0.5714	2.6889	4.9304
0.0000	0.0000	0.0000		48	9.4444	1.8349	20.9704	0.1905	0.8963	1.6435			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		96	18.8889	3.6698	41.9407	0.3810	1.7926	3.2870
0.0000	0.0000	0.0000		432	818.4132	42.3997	3.9442	0.4930	0.2465	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		504	954.8154	49.4663	4.6015	0.5752	0.2876	0.0000
0.0000	0.0000	0.0000		48	18.7122	1.4486	2.3047	0.0167	0.0803	0.4630			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		72	28.0683	2.1729	3.4570	0.0251	0.1205	0.6946
																			5							
0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		2000	291.4372	42.9633	296.3545	0.3749	5.2242	0.0000
0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		1000	574.0316	50.1356	721.9695	1.0094	6.1397	30.9475
0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		1000	198.8936	39.8135	713.6181	1.0116	3.8299	169.3776
0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		500	98.3796	19.1138	218.4414	1.9841	9.3364	17.1195
0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		500	194.9184	15.0893	24.0068	0.1742	0.8366	4.8234
0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		2500	491.8981	95.5688	1092.2068	9.9206	46.6821	592.5948
																			2							
0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		600	233.9021	18.1071	28.8082	0.2090	1.0040	5.7881
0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		200	54.2878	5.4450	67.4407	0.0834	0.8083	0.0000
0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		400	7.7688	111.3528	10.3584	1.2948	0.6474	0.0000
																			12							
0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		4386	1127.1133	212.9520	4068.3150	5.8167	21.4194	141.3264
0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		2952	587.1338	117.5295	2106.6006	2.9862	11.3059	500.0026
0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		2952	1274.9713	105.6175	1614.1940	2.2784	13.3076	316.4188
0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		984	193.6111	37.6159	429.8926	3.9048	18.3741	33.6912
0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		1200	467.8042	36.2143	57.6164	0.4180	2.0079	11.5762
																			7							
0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		1400	859.8333	31.0370	76.0988	0.4506	1.9784	48.6909
0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		350	29.0972	3.4414	63.8773	0.6944	3.5147	11.7020
0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		12600	244.7172	3507.6132	326.2896	40.7862	20.3931	0.0000
																			6							
0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		5400	2132.0149	378.3773	6918.0407	11.0413	41.4590	1082.6751
0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		1800	488.5904	49.0048	606.9662	0.7507	7.2746	0.0000
0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		900	350.8532	27.1607	43.2123	0.3135	1.5060	8.6822
0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		24000	10481.8340	2287.2109	33642.4143	52.4330	213.2095	2572.5103
																			2							
0.0417	0.4041	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		200	54.2878	5.4450	67.4407	0.0834	0.8083	0.0000
4.3700	2.1850	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		2700	52.4394	751.6314	69.9192	8.7399	4.3700	0.0000
0.0697	0.3347	1.9294			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		400	155.9347	12.0714	19.2055	0.1393	0.6693	3.8587
																			3							
0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		880	793.9101	183.7124	2736.4766	3.9714	16.2848	0.0000
0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		440	36.5794	4.3263	80.3029	0.8730	4.4184	14.7111
0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		330	128.6462	9.9589	15.8445	0.1149	0.5522	3.1835
0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		8800	1731.4815	336.4021	3844.5679	34.9206	164.3210	2085.9338
																			8							
0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		25600	2486.9310	366.6201	2528.8919	3.1993	44.5796	0.0000
			1								1								12							
0.2787	1.3386	7.7175		800	311.8695	24.1429	38.4109	0.2787	1.3386	7.7175		800	311.8695	24.1429	38.4109	0.2787	1.3386	7.7175		9600	3742.4339	289.7143	460.9312	3.3439	16.0635	92.6100
1.6720	8.0317	46.3050		4800	1871.2169	144.8571	230.4656	1.6720	8.0317	46.3050		3000	1169.5106	90.5357	144.0410	1.0450	5.0198	28.9406		54600	21285.0926	1647.7500	2621.5463	19.0185	91.3611	526.7192
10.24	31.81	322.73	9	11392	4873.37	382.46	1479.00	6.30	29.82	271.64	5	7300	2834.73	234.12	1221.86	3.56	19.24	231.34	199	389785	117701.93	19446.19	162687.81	635.43	2776.77	42374.05
							Total							**Total**									**Total**			
3.33	15.98	92.13			3399.38	263.16	418.68	3.04	14.59	84.12			2144.10	165.98	264.08	1.92	9.20	53.06		119986.00	46774.97	3621.01	5760.97	41.79	200.77	1157.49
6.12	12.09	223.76	--	2232	1378.15	102.87	886.76	1.69	7.83	173.63	--	1700	670.95	64.32	914.10	1.25	8.17	174.86	--	173948	51714.14	12273.48	116573.82	226.41	846.02	20765.26
							Total Off-Road							**Total Off-Road**									**Total Off-Road**			
4.12	19.71	98.98	--	9160	3495.22	279.59	592.24	4.61	21.99	98.01	--	5600	2163.78	169.80	307.76	2.31	11.07	56.48	--	215837	65987.79	7172.71	46113.99	409.02	1930.75	21608.79
							Total On-Road							**Total On-Road**									**Total On-Road**			
20.10	80.87	825.71																								
8.28	39.77	229.31																								
9.05	28.09	572.25																								
11.04	52.78	253.46																								

Table L.1-4
Construction Equipment Calculations - Parameters and Emissions

March '06							Total Emissions Excludes March 2005						
	Monthly Emissions (lb/month)							Monthly Emissions (lb/month)					
Distribution	CO	ROC	NOx	SOx	PM-10	Fugitive	Distribution	CO	ROC	NOx	SOx	PM-10	Fugitive
1.87%	817.0061	45.0093	71.1248	0.7730	3.0920	2.8800	100.00%	43624.2087	2403.2804	3797.7210	41.2726	165.1000	153.7777
5.92%	342.3108	8.9469	31.8335	0.1957	0.8324	2.6792	100.00%	5783.2502	151.1549	537.8189	3.3057	14.0634	45.2649
0.00%	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	100.00%	5338.8889	1329.1667	19448.6111	250.0000	648.6111	245.0238
0.00%	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	100.00%	2313.5185	575.9722	8427.7315	108.3333	281.0648	206.4590
0.00%	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	100.00%	3559.2593	886.1111	12965.7407	166.6667	432.4074	222.3386
0.00%	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	100.00%	7881.2169	1962.1032	28709.8545	369.0476	957.4735	246.7567
1.87%	74.2769	18.4919	270.5775	3.4781	9.0238	2.8844	100.00%	3966.0317	987.3810	14447.5397	185.7143	481.8254	154.0111
0.00%	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	100.00%	1728.7831	430.3968	6297.6455	80.9524	210.0265	55.8590
1.87%	7.4277	1.8492	27.0577	0.3478	0.9024	13.8822	100.00%	396.6032	98.7381	1444.7540	18.5714	48.1825	741.2435
	1241.02148	74.29729	400.59349	4.79455	13.85058	22.32579		74591.76042	8824.30439	96077.41688	1223.86402	3238.75466	2070.73442
	Total							Total					

Peak-day on-site emissions were calculated by selecting the month for each quarter with the most equipment hours.
For each month, the max daily hours for each piece of equipment operating in that month was multiplied by the
appropriate emission factor using the same methodology as monthly, quarterly, and annual emissions.

Assumed maximum working days per month = 25

' Quarter Hours		On-Site Equipment Crew / Crew Members per Shift on-/off-road	Equipment	No. of Pieces	Max. Daily Hrs.	Quarter 1 June '05 Monthly Hours	Max. Daily Hrs.	No. of Pieces	No. of Crews	Avg. Daily Hrs.	Max Daily Emissions (lb/day) CO	ROC	NOx	SOx	PM-10	Fugitive	Quarter 2 September '05 Monthly Hours	Max. Daily Hrs.	No. of Pieces	No. of Crews	Avg. Daily Hrs.	Max Daily Emissions (lb/day) CO	ROC	NOx	SOx	PM-10	Fugitive	Monthly Hours
25264																												
66880																												
68548		**Administrative Support / 14**							1											1								
13250		on	Crew Van	1	6	150	6	1		6.00	2.3390	0.1811	0.2881	0.0021	0.0100	0.0579	150	6	1		6.00	2.3390	0.1811	0.2881	0.0021	0.0100	0.0579	150
		on	SUV	1	4	100	4	1		4.00	1.5593	0.1207	0.1921	0.0014	0.0067	0.0386	100	4	1		4.00	1.5593	0.1207	0.1921	0.0014	0.0067	0.0386	100
		on	Pickup	8	6	1200	6	8		6.00	18.7122	1.4486	2.3047	0.0167	0.0803	0.4630	1200	6	8		6.00	18.7122	1.4486	2.3047	0.0167	0.0803	0.4630	1200
		on	Fuel Truck	1	8	200	8	1		8.00	1.5741	0.3058	3.4951	0.0317	0.1494	0.2739	200	8	1		8.00	1.5741	0.3058	3.4951	0.0317	0.1494	0.2739	200
		off	Mechanics Trucks w/ Crane	2	12	600	12	2		12.00	3.7499	0.7454	13.4644	0.0191	0.0721	2.5725	600	12	2		12.00	3.7499	0.7454	13.4644	0.0191	0.0721	2.5725	600
		off	Vacum Sweeper	2	18	900	18	2		18.00	18.6866	1.6321	23.5024	0.0329	0.1999	3.8588	900	18	2		18.00	18.6866	1.6321	23.5024	0.0329	0.1999	3.8588	900
		Environmental Crew / 2							1											1								
		on	Pickup	1	10	250	10	1		10.00	3.8984	0.3018	0.4801	0.0035	0.0167	0.0965	250	10	1		10.00	3.8984	0.3018	0.4801	0.0035	0.0167	0.0965	250
		Fence Crew - Subcontractor / 3																										
		on	Pickup	1	4																							
		on	Flat Bed Truck	1	4																							
		Miscellaneous Labor Crew / 5							1											1								
		on	Pickup	1	8	200	8	1		8.00	3.1187	0.2414	0.3841	0.0028	0.0134	0.0772	100	8	1		4.00	3.1187	0.2414	0.3841	0.0028	0.0134	0.0772	100
		off	CAT 428 Backhoe	1	12	300	12	1		12.00	3.4507	0.3461	4.2867	0.0053	0.0514	1.1390	150	12	1		6.00	3.4507	0.3461	4.2867	0.0053	0.0514	1.1390	150
		Crusher Crew / 4																		1								
		on	Pickup	1	4												100	4	1		4.00	1.5593	0.1207	0.1921	0.0014	0.0067	0.0386	100
		off	CAT 988 Loaders	2	16												800	16	2		16.00	12.6342	2.2422	40.9958	0.0654	0.2457	6.4159	800
		off	Crusher	1	16												400	16	1		16.00	8.5628	1.6016	27.7141	0.0440	0.1683	0.0000	400
		Survey Crew / 11							1											1								
		on	Pickup	1	2	50	2	1		2.00	0.7797	0.0604	0.0960	0.0007	0.0033	0.0193	50	2	1		2.00	0.7797	0.0604	0.0960	0.0007	0.0033	0.0193	50
		on	Crew Van	3	4	300	4	3		4.00	4.6780	0.3621	0.5762	0.0042	0.0201	0.1158	300	4	3		4.00	4.6780	0.3621	0.5762	0.0042	0.0201	0.1158	300
		Quality Control Team / 6							1											1								
		on	Pickup	6	10	1500	10	6		10.00	23.3902	1.8107	2.8808	0.0209	0.1004	0.5788	1500	10	6		10.00	23.3902	1.8107	2.8808	0.0209	0.1004	0.5788	1500
		Batch Plant Crew / 6							1											1								
		on	Pickup	1	4	100	4	1		4.00	1.5593	0.1207	0.1921	0.0014	0.0067	0.0386	100	4	1		4.00	1.5593	0.1207	0.1921	0.0014	0.0067	0.0386	100
		off	CAT 988 Loaders	2	10	500	10	2		10.00	7.8964	1.4014	25.6224	0.0409	0.1536	4.0099	500	10	2		10.00	7.8964	1.4014	25.6224	0.0409	0.1536	4.0099	500
		PCCP Paving Crew / 24							1											1								
		off	Gomaco GP-4000 Paver	1	12	144	12	1		5.76	5.1128	0.9037	16.5934	0.0265	0.0993	0.0000	300	12	1		12.00	5.1128	0.9037	16.5934	0.0265	0.0993	0.0000	300
		off	Gomaco GHP-2800	1	2	8	2	1		0.32	0.6882	0.1216	2.2336	0.0036	0.0134	0.0000	50	2	1		2.00	0.6882	0.1216	2.2336	0.0036	0.0134	0.0000	50
		off	Gomaco RTP-500 Belt Placers	2	10	240	10	2		4.80	3.8516	0.7656	13.8298	0.0196	0.0740	0.0000	500	10	2		10.00	3.8516	0.7656	13.8298	0.0196	0.0740	0.0000	500
		off	Gomaco TC-400 Cure /Texture Rig	1	4	48	4	1		1.92	0.9701	0.0973	1.2051	0.0015	0.0144	0.0000	100	4	1		4.00	0.9701	0.0973	1.2051	0.0015	0.0144	0.0000	100
		off	Compressors (Gang Drills)	3	10	50	10	3		0.67	8.1432	0.8167	10.1161	0.0125	0.1212	0.0000	750	10	3		10.00	8.1432	0.8167	10.1161	0.0125	0.1212	0.0000	750
		on	Pickup	3	6	450	6	3		6.00	7.0171	0.5432	0.8642	0.0063	0.0301	0.1736	450	6	3		6.00	7.0171	0.5432	0.8642	0.0063	0.0301	0.1736	450
		on	1 Ton Flat Beds	2	6	300	6	2		6.00	2.3611	0.4587	5.2426	0.0476	0.2241	0.4109	300	6	2		6.00	2.3611	0.4587	5.2426	0.0476	0.2241	0.4109	300
		on	Water Truck	1	2	24	2	1		0.96	0.1663	0.0197	0.3650	0.0040	0.0201	0.0669	50	2	1		2.00	0.1663	0.0197	0.3650	0.0040	0.0201	0.0669	50
		off	Walk Behind Saw	2	4	96	4	2		1.92	0.1554	2.2271	0.2072	0.0259	0.0129	0.0000	200	4	2		4.00	0.1554	2.2271	0.2072	0.0259	0.0129	0.0000	200
		on	Tri-axle Dump Truck	12	11	1584	11	12		5.28	25.9722	5.0460	57.6685	0.5238	2.4648	31.2890	3300	11	12		11.00	25.9722	5.0460	57.6685	0.5238	2.4648	31.2890	3300
		Grading Crew / 6							1											4								
		off	CAT 14H Motor Grader	1	16	128	16	1		5.12	3.6872	0.7406	13.2246	0.0187	0.0711	10.9201	1600	16	1		16.00	14.7487	2.9623	52.8983	0.0749	0.2842	43.6806	2000
		off	CAT 615C Scraper	1	8	64	8	1		2.56	2.5213	0.4716	8.1603	0.0130	0.0496	8.1480	800	8	1		8.00	10.0851	1.8863	32.6411	0.0518	0.1982	32.5918	1000
		off	CAT RM350B Reclaimer	1	16	80	16	1		3.20	11.5478	2.6722	39.8033	0.0578	0.2369	0.0000	400	16	1		4.00	46.1911	10.6887	159.2132	0.2311	0.9475	0.0000	400
		off	CAT CS 583E Compactors	2	18	280	18	2		5.60	16.0846	1.3324	20.3641	0.0287	0.1679	3.8588	3600	18	2		18.00	64.3383	5.3297	81.4564	0.1150	0.6715	15.4351	4500
		on	Water Truck	1	4	32	4	1		1.28	0.3325	0.0393	0.7300	0.0079	0.0402	0.1337	400	4	1		4.00	1.3302	0.1573	2.9201	0.0317	0.1607	0.5350	500
		on	Pickup	1	6	150	6	1		6.00	2.3390	0.1811	0.2881	0.0021	0.0100	0.0579	600	6	1		6.00	9.3561	0.7243	1.1523	0.0084	0.0402	0.2315	750
		on	Tri-axle Dump Truck	6	20	960	20	6		6.40	23.6111	4.5873	52.4259	0.4762	2.2407	28.4446	12000	20	6		20.00	94.4444	18.3492	209.7037	1.9048	8.9630	113.7782	15000
		Electrical Crew / 4							2											5								
		off	CAT 428 Backhoe	1	10	500	10	1		10.00	5.7511	0.5768	7.1445	0.0088	0.0856	1.8984	1250	10	1		10.00	14.3778	1.4421	17.8613	0.0221	0.2141	4.7460	1500
		off	Ditch Witch RT 55 Trencher	1	10	500	10	1		10.00	4.1574	0.4170	5.1647	0.0064	0.0619	0.0000	1250	10	1		10.00	10.3936	1.0425	12.9118	0.0160	0.1547	0.0000	1500
		on	Pickup	2	6	600	6	2		6.00	9.3561	0.7243	1.1523	0.0084	0.0402	0.2315	1500	6	2		6.00	23.3902	1.8107	2.8808	0.0209	0.1004	0.5788	1800
		ACP Paving Crew / 9							1											1								
		off	Barber-Greene BG260C Paver	1	18	90	18	1		3.60	3.0158	0.5995	10.8287	0.0154	0.0580	0.0000	90	18	1		3.60	3.0158	0.5995	10.8287	0.0154	0.0580	0.0000	450
		off	CAT CB 634D Rollers	2	18	180	18	2		3.60	15.5484	1.2880	19.6853	0.0278	0.1623	3.8588	180	18	2		3.60	15.5484	1.2880	19.6853	0.0278	0.1623	3.8588	900
		off	CAT PS 300 B Rubber Tire	1	18	90	18	1		3.60	6.1738	0.6192	7.6696	0.0095	0.0919	0.0000	90	18	1		3.60	6.1738	0.6192	7.6696	0.0095	0.0919	0.0000	450
		off	CAT IT 14G Loader	1	2	10	2	1		0.40	0.1885	0.0379	0.6763	0.0010	0.0036	1.3650	10	2	1		0.40	0.1885	0.0379	0.6763	0.0010	0.0036	1.3650	50
		on	Pickup	1	8	40	8	1		1.60	3.1187	0.2414	0.3841	0.0028	0.0134	0.0772	40	8	1		1.60	3.1187	0.2414	0.3841	0.0028	0.0134	0.0772	200
		on	Flat Bed Truck	1	2	10	2	1		0.40	0.3935	0.0765	0.8738	0.0079	0.0373	0.0685	10	2	1		0.40	0.3935	0.0765	0.8738	0.0079	0.0373	0.0685	50
							0	0																				

Table L.1-4
Construction Equipment Calculations - Parameters and Emissions

Striping Crew / 3					0	0	1																			
on	Paint Truck	1	12		0	0																				
on	Flat Bed Truck	1	4	16	4	1		0.64	0.7870	0.1529	1.7475	0.0159	0.0747	0.1370												16
off	Parking Lot Paint Machines	3	12	24	12	3		0.32	68.2011	3.5333	0.3287	0.0411	0.0205	0.0000												24
on	Pickup	1	4	8	4	1		0.32	1.5593	0.1207	0.1921	0.0014	0.0067	0.0386												8
Jack & Bore Crew / 5							2																			
off	Jack & Bore Machine	1	16	800	16	1		16.00	4.6630	0.6874	4.7417	0.0060	0.0836	0.0000												
off	CAT 325C L Excavator	1	8	400	8	1		8.00	9.1845	0.8022	11.5515	0.0162	0.0982	0.4952												
off	CAT 966 Loader	1	8	400	8	1		8.00	3.1823	0.6370	11.4179	0.0162	0.0613	2.7100												
on	Flat Bed Truck	1	4	200	4	1		4.00	1.5741	0.3058	3.4951	0.0317	0.1494	0.2739												
on	Pickup	1	4	200	4	1		4.00	3.1187	0.2414	0.3841	0.0028	0.0134	0.0772												
on	Tri-axle Dump Truck	1	20	1000	20	1		20.00	7.8704	1.5291	17.4753	0.1587	0.7469	9.4815												
Bridge Crew / 10																		1								
on	Pickup	3	4												300	4	3		4.00	4.6780	0.3621	0.5762	0.0042	0.0201	0.1158	300
off	Air Compressor	1	4												100	4	1		4.00	1.0858	0.1089	1.3488	0.0017	0.0162	0.0000	100
off	Walk Behind Saw	1	8												200	8	1		8.00	0.1554	2.2271	0.2072	0.0259	0.0129	0.0000	200
Drainage Crew / 6							1											3								
off	CAT 330C L Excavator	1	18	112	18	1		4.48	4.6256	0.8739	16.6962	0.0239	0.0879	0.5800	1350	18	1		18.00	13.8769	2.6218	50.0887	0.0716	0.2637	1.7400	900
off	CAT 966 Loader	1	12	84	12	1		3.36	2.3867	0.4778	8.5634	0.0121	0.0460	2.0325	900	12	1		12.00	7.1602	1.4333	25.6903	0.0364	0.1379	6.0976	600
off	CAT CS 531D Compactor	1	12	84	12	1		3.36	5.1828	0.4293	6.5618	0.0093	0.0541	1.2863	900	12	1		12.00	15.5484	1.2880	19.6853	0.0278	0.1623	3.8588	600
on	Flat Bed Truck	1	4	28	4	1		1.12	0.7870	0.1529	1.7475	0.0159	0.0747	0.1370	300	4	1		4.00	2.3611	0.4587	5.2426	0.0476	0.2241	0.4109	200
on	Pickup	1	4	100	4	1		4.00	1.5593	0.1207	0.1921	0.0014	0.0067	0.0386	300	4	1		4.00	4.6780	0.3621	0.5762	0.0042	0.0201	0.1158	200
Saw Crew / 4																		2								
on	1 Ton Trucks w/ Lift	2	4												400	4	2		4.00	9.8267	0.3547	0.8697	0.0051	0.0226	0.5565	200
on	Water Truck	1	2												100	2	1		2.00	0.3325	0.0393	0.7300	0.0079	0.0402	0.1337	50
off	Walk Behind Saw	4	18												3600	18	4		18.00	2.7968	40.0870	3.7290	0.4661	0.2331	0.0000	1800
Demolition Crew / 7																		2								
off	CAT 988 Loaders	2	18												1800	18	2		18.00	28.4269	5.0450	92.2405	0.1472	0.5528	14.4357	900
off	Air Compressor	1	12												600	12	1		12.00	6.5145	0.6534	8.0929	0.0100	0.0970	0.0000	300
on	Pickup	1	6												300	6	1		6.00	4.6780	0.3621	0.5762	0.0042	0.0201	0.1158	150
off	Truck/Tractor Low Boys	8	20												8000	20	8		20.00	139.7578	30.4961	448.5655	0.6991	2.8428	34.3001	4000
Sealing Crew / 6																										
off	Air Compressor	1	4																							
off	Walk Behind Saw	3	18																							
on	Pickup	2	4																							
Milling Crew / 6																		1								
off	CAT PM 565B Milling Machine	1	16												144	16	1		5.76	14.4347	3.3402	49.7541	0.0722	0.2961	0.0000	400
on	Water Truck	1	8												72	8	1		2.88	0.6651	0.0787	1.4601	0.0159	0.0803	0.2675	200
on	Pickup	1	6												54	6	1		2.16	2.3390	0.1811	0.2881	0.0021	0.0100	0.0579	150
on	Tri-axle Dump Truck	8	20												1440	20	8		7.20	31.4815	6.1164	69.9012	0.6349	2.9877	37.9261	4000
Lighting - Night Shift							1											1								
off	Light Plants	16	8	3200	8	16		8.00	12.4347	1.8331	12.6445	0.0160	0.2229	0.0000	3200	8	16		8.00	12.4347	1.8331	12.6445	0.0160	0.2229	0.0000	3200
LAWA/CM Staff							1											1								
on	Pickup	8	4	800	4	8		4.00	12.4748	0.9657	1.5364	0.0111	0.0535	0.3087	800	4	8		4.00	12.4748	0.9657	1.5364	0.0111	0.0535	0.3087	800
on	Pickup	16	12	4800	12	16		12.00	74.8487	5.7943	9.2186	0.0669	0.3213	1.8522	4800	12	16		12.00	74.8487	5.7943	9.2186	0.0669	0.3213	1.8522	4800
Totals				25264	515	139	17	318.59	472.10	53.34	483.16	1.99	9.45	123.79	66880	617	167	29	510.20	880.24	175.51	1671.77	5.88	25.12	370.97	68548
									Total											**Total**						
																				208.17	16.12	25.64	0.19	0.89	5.15	13450.00
				9912	322	54	--	166.59	231.24	27.09	316.29	0.52	2.48	48.73	35314	406	69	--	332.96	501.16	127.93	1287.66	2.44	8.85	180.11	31024
									Total Off-Road											**Total Off-Road**						
				15352	193	85	--	152.00	240.86	26.25	166.87	1.48	6.98	75.06	31566	211	98	--	177.24	379.08	47.58	384.11	3.45	16.27	190.87	37524
									Total On-Road											**Total On-Road**						
					Max Daily Hours =		515.00									Max Daily Hours =		617.00	0.826904376							
					Avg. Daily Hours =		318.59									Avg. Daily Hours =		510.20								
					Peaking Factor =		1.62									Peaking Factor =		1.21								

Max daily off-site emissions were calculated by dividing emissions of each peak month by 25 to get average emissions per day for that month. That value was then multiplied by a peaking factor derived by dividing the max daily hours in each peak month by the average daily hours for that month. Average daily hours were calculated by dividing monthly hours by 25 days per month, then by number of pieces of equipment, and finally by the number of crews.

Table L.1-4
Construction Equipment Calculations - Parameters and Emissions

Off-Site Equipment		Quarter 1						Quarter 2					
		June '05						September '05					
		Max Daily Emissions (lb/day)						Max Daily Emissions (lb/day)					
Trip Type/Equipment		CO	ROC	NOx	SOx	PM-10	Fugitive	CO	ROC	NOx	SOx	PM-10	Fugitive
Personal Vehicles													
	Contractor Personnel	182.82862	10.07212	15.91621	0.17297	0.69193	0.64448	362.07906	19.94712	31.52092	0.34256	1.37032	1.27635
	LAWA / CM / Inspectors	32.61855	0.85254	3.03339	0.01864	0.07932	0.25530	24.40224	0.63779	2.26931	0.01395	0.05934	0.19099
Batch Plant Stocking													
	Course Aggregate	133.63187	33.26891	486.79686	6.25748	16.23467	6.13292	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
	Fine Aggregate	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	37.30409	9.28720	135.89208	1.74681	4.53200	3.32903
	Cement	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
		0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Soil Disposal Trucking													
	Soil Disposal	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
		0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Miscellaneous Deliveries													
	Misc. Deliveries	16.62160	4.13810	60.54949	0.77833	2.01933	0.64546	32.91789	8.19522	119.91396	1.54142	3.99913	1.27829
Base Course Haul													
	Base Course	38.21563	9.51414	139.21266	1.78949	4.64274	1.23479	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Transport from Parking to Staging Area													
	Bus from parking to staging	1.66216	0.41381	6.05495	0.07783	0.20193	3.10654	3.29179	0.81952	11.99140	0.15414	0.39991	6.15229
Totals		405.57843	58.25963	711.56356	9.09475	23.86993	12.01950	459.99507	38.88686	301.58766	3.79888	10.36071	12.22694

Off-Site Equipment		Quarter 3						Quarter 4					
		October '05						January '06					
		Max Daily Emissions (lb/day)						Max Daily Emissions (lb/day)					
Trip Type/Equipment		CO	ROC	NOx	SOx	PM-10	Fugitive	CO	ROC	NOx	SOx	PM-10	Fugitive
Personal Vehicles													
	Contractor Personnel	328.26870	18.08449	28.57755	0.31057	1.24236	1.15716	68.03995	3.74836	5.92324	0.06437	0.25750	0.23984
	LAWA / CM / Inspectors	21.58526	0.56417	2.00734	0.01234	0.05249	0.16895	23.14572	0.60495	2.15246	0.01323	0.05628	0.18116
Batch Plant Stocking													
	Course Aggregate	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
	Fine Aggregate	32.99772	8.21509	120.20476	1.54516	4.00883	2.94473	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
	Cement	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	36.87582	9.18058	134.33196	1.72676	4.47997	2.30355
		0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Soil Disposal Trucking													
	Soil Disposal	178.01859	44.31940	648.48967	8.33594	21.62713	5.57367	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
		0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Miscellaneous Deliveries													
	Misc. Deliveries	29.84407	7.42996	108.71659	1.39749	3.62570	1.15892	6.18575	1.54000	22.53359	0.28966	0.75150	0.24021
Base Course Haul													
	Base Course	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Transport from Parking to Staging Area													
	Bus from parking to staging	2.98441	0.74300	10.87166	0.13975	0.36257	5.57780	0.61858	0.15400	2.25336	0.02897	0.07515	1.15611
Totals		593.69875	79.35612	918.86757	11.74124	30.91908	16.58122	134.86582	15.22789	167.19461	2.12298	5.62040	4.12086

Peak day generator emissions are assumed to be calculated as an average day
by multiplying the lb/day emissions by the number of pieces (7).
The same peak day emissions value is assumed to apply to each quarter.

Peak Day Generator Emissions		All Quarters																							
		Max Daily Emissions (lb/day)					Quarter 2 Emissions (lb/quarter)					Quarter 3 Emissions (lb/quarter)					Quarter 4 Emissions (lb/quarter)					Annual Emissions			
Generator	**No. of Pieces**	CO	ROC	NOx	SOx	PM-10	CO	ROC	NOx	SOx	PM-10	CO	ROC	NOx	SOx	PM-10	CO	ROC	NOx	SOx	PM-10	CO	ROC	NOx	
Generator, 500kW (CAT 3412TA)	7	95.78145679	22.16402173	351.68689	0.4791254	3.338287716	7183.6093	1662.30163	26376.517	35.93441	250.3716	7183.6093	1662.3016	26376.517	35.93441	250.3716	7183.609259	1662.3016	26376.517	35.9344079	250.3716	21646.61	5009.069	79481.238	

Quarter 3 October '05										Quarter 4 January '06										
				Max Daily Emissions (lb/day)											Max Daily Emissions (lb/day)					
Max. Daily Hrs.	No. of Pieces	No. of Crews	Avg. Daily Hrs.	CO	ROC	NOx	SOx	PM-10	Fugitive	Monthly Hours	Max. Daily Hrs.	No. of Pieces	No. of Crews	Avg. Daily Hrs.	CO	ROC	NOx	SOx	PM-10	Fugitive
		1											1							
6	1		6.00	2.3390	0.1811	0.2881	0.0021	0.0100	0.0579	150	6	1		6.00	2.3390	0.1811	0.2881	0.0021	0.0100	0.0579
4	1		4.00	1.5593	0.1207	0.1921	0.0014	0.0067	0.0386	100	4	1		4.00	1.5593	0.1207	0.1921	0.0014	0.0067	0.0386
6	8		6.00	18.7122	1.4486	2.3047	0.0167	0.0803	0.4630	1000	6	8		5.00	18.7122	1.4486	2.3047	0.0167	0.0803	0.4630
8	1		8.00	1.5741	0.3058	3.4951	0.0317	0.1494	0.2739	200	8	1		8.00	1.5741	0.3058	3.4951	0.0317	0.1494	0.2739
12	2		12.00	3.7499	0.7454	13.4644	0.0191	0.0721	2.5725	500	12	2		10.00	3.7499	0.7454	13.4644	0.0191	0.0721	2.5725
18	2		18.00	18.6866	1.6321	23.5024	0.0329	0.1999	3.8588	500	18	2		10.00	18.6866	1.6321	23.5024	0.0329	0.1999	3.8588
		1											1							
10	1		10.00	3.8984	0.3018	0.4801	0.0035	0.0167	0.0965	250	10	1		10.00	3.8984	0.3018	0.4801	0.0035	0.0167	0.0965
		1											2							
8	1		4.00	3.1187	0.2414	0.3841	0.0028	0.0134	0.0772	400	8	1		8.00	6.2374	0.4829	0.7682	0.0056	0.0268	0.1543
12	1		6.00	3.4507	0.3461	4.2867	0.0053	0.0514	1.1390	600	12	1		12.00	6.9014	0.6922	8.5734	0.0106	0.1028	2.2781
		1																		
4	1		4.00	1.5593	0.1207	0.1921	0.0014	0.0067	0.0386											
16	2		16.00	12.6342	2.2422	40.9958	0.0654	0.2457	6.4159											
16	1		16.00	8.5628	1.6016	27.7141	0.0440	0.1683	0.0000											
		1											1							
2	1		2.00	0.7797	0.0604	0.0960	0.0007	0.0033	0.0193	50	2	1		2.00	0.7797	0.0604	0.0960	0.0007	0.0033	0.0193
4	3		4.00	4.6780	0.3621	0.5762	0.0042	0.0201	0.1158	200	4	3		2.67	4.6780	0.3621	0.5762	0.0042	0.0201	0.1158
		1											1							
10	6		10.00	23.3902	1.8107	2.8808	0.0209	0.1004	0.5788	600	10	6		4.00	23.3902	1.8107	2.8808	0.0209	0.1004	0.5788
		1											1							
4	1		4.00	1.5593	0.1207	0.1921	0.0014	0.0067	0.0386	100	4	1		4.00	1.5593	0.1207	0.1921	0.0014	0.0067	0.0386
10	2		10.00	7.8964	1.4014	25.6224	0.0409	0.1536	4.0099	250	10	2		5.00	7.8964	1.4014	25.6224	0.0409	0.1536	4.0099
		1																		
12	1		12.00	5.1128	0.9037	16.5934	0.0265	0.0993	0.0000											
2	1		2.00	0.6882	0.1216	2.2336	0.0036	0.0134	0.0000											
10	2		10.00	3.8516	0.7656	13.8298	0.0196	0.0740	0.0000											
4	1		4.00	0.9701	0.0973	1.2051	0.0015	0.0144	0.0000											
10	3		10.00	8.1432	0.8167	10.1161	0.0125	0.1212	0.0000											
6	3		6.00	7.0171	0.5432	0.8642	0.0063	0.0301	0.1736											
6	2		6.00	2.3611	0.4587	5.2426	0.0476	0.2241	0.4109											
2	1		2.00	0.1663	0.0197	0.3650	0.0040	0.0201	0.0669											
4	2		4.00	0.1554	2.2271	0.2072	0.0259	0.0129	0.0000											
11	12		11.00	25.9722	5.0460	57.6685	0.5238	2.4648	31.2890											
		5																		
16	1		16.00	18.4359	3.7029	66.1229	0.0937	0.3553	54.6007											
8	1		8.00	12.6064	2.3579	40.8013	0.0648	0.2478	40.7398											
16	1		3.20	57.7389	13.3609	199.0165	0.2888	1.1843	0.0000											
18	2		18.00	80.4229	6.6622	101.8205	0.1437	0.8394	19.2938											
4	1		4.00	1.6627	0.1966	3.6501	0.0397	0.2008	0.6687											
6	1		6.00	11.6951	0.9054	1.4404	0.0104	0.0502	0.2894											
20	6		20.00	118.0556	22.9365	262.1296	2.3810	11.2037	142.2228											
		6											1							
10	1		10.00	17.2534	1.7305	21.4336	0.0265	0.2569	5.6952	100	10	1		4.00	2.8756	0.2884	3.5723	0.0044	0.0428	0.9492
10	1		10.00	12.4723	1.2510	15.4941	0.0192	0.1857	0.0000	100	10	1		4.00	2.0787	0.2085	2.5824	0.0032	0.0309	0.0000
6	2		6.00	28.0683	2.1729	3.4570	0.0251	0.1205	0.6946	900	6	2		18.00	4.6780	0.3621	0.5762	0.0042	0.0201	0.1158
		1																		
18	1		18.00	3.0158	0.5995	10.8287	0.0154	0.0580	0.0000											
18	2		18.00	15.5484	1.2880	19.6853	0.0278	0.1623	3.8588											
18	1		18.00	6.1738	0.6192	7.6696	0.0095	0.0919	0.0000											
2	1		2.00	0.1885	0.0379	0.6763	0.0010	0.0036	1.3650											
8	1		8.00	3.1187	0.2414	0.3841	0.0028	0.0134	0.0772											
2	1		2.00	0.3935	0.0765	0.8738	0.0079	0.0373	0.0685											

		1																				
4	1		0.64	0.7870	0.1529	1.7475	0.0159	0.0747	0.1370													
12	3		0.32	68.2011	3.5333	0.3287	0.0411	0.0205	0.0000													
4	1		0.32	1.5593	0.1207	0.1921	0.0014	0.0067	0.0386													
		1																				
4	3		4.00	4.6780	0.3621	0.5762	0.0042	0.0201	0.1158													
4	1		4.00	1.0858	0.1089	1.3488	0.0017	0.0162	0.0000													
8	1		8.00	0.1554	2.2271	0.2072	0.0259	0.0129	0.0000													
		2																				
18	1		18.00	9.2513	1.7479	33.3925	0.0477	0.1758	1.1600													
12	1		12.00	4.7734	0.9555	17.1268	0.0243	0.0919	4.0651													
12	1		12.00	10.3656	0.8587	13.1235	0.0185	0.1082	2.5725													
4	1		4.00	1.5741	0.3058	3.4951	0.0317	0.1494	0.2739													
4	1		4.00	3.1187	0.2414	0.3841	0.0028	0.0134	0.0772													
		1																				
4	2		4.00	4.9133	0.1774	0.4349	0.0026	0.0113	0.2782													
2	1		2.00	0.1663	0.0197	0.3650	0.0040	0.0201	0.0669													
18	4		18.00	1.3984	20.0435	1.8645	0.2331	0.1165	0.0000													
		1																				
18	2		18.00	14.2134	2.5225	46.1203	0.0736	0.2764	7.2178													
12	1		12.00	3.2573	0.3267	4.0464	0.0050	0.0485	0.0000													
6	1		6.00	2.3390	0.1811	0.2881	0.0021	0.0100	0.0579													
20	8		20.00	69.8789	15.2481	224.2828	0.3496	1.4214	17.1501													
													1									
										100	4	1		4.00	1.0858	0.1089	1.3488	0.0017	0.0162	0.0000		
										1350	18	3		18.00	1.0488	15.0326	1.3984	0.1748	0.0874	0.0000		
										200	4	2		4.00	3.1187	0.2414	0.3841	0.0028	0.0134	0.0772		
		1																				
16	1		16.00	14.4347	3.3402	49.7541	0.0722	0.2961	0.0000													
8	1		8.00	0.6651	0.0787	1.4601	0.0159	0.0803	0.2675													
6	1		6.00	2.3390	0.1811	0.2881	0.0021	0.0100	0.0579													
20	8		20.00	31.4815	6.1164	69.9012	0.6349	2.9877	37.9261													
		1																				
8	16		8.00	12.4347	1.8331	12.6445	0.0160	0.2229	0.0000													
		1											1									
4	8		4.00	12.4748	0.9657	1.5364	0.0111	0.0535	0.3087	800	4	8		4.00	12.4748	0.9657	1.5364	0.0111	0.0535	0.3087		
12	16		12.00	74.8487	5.7943	9.2186	0.0669	0.3213	1.8522	4800	12	16		12.00	74.8487	5.7943	9.2186	0.0669	0.3213	1.8522		
637	172	29	595.48	909.83	149.62	1504.60	5.83	25.96	394.93	13250	182	65	10	158.67	204.17	32.67	103.05	0.46	1.53	17.86	90127.16	45.06
				Total											**Total**							
120.00	61.00	0.00	116.00	211.29	16.36	26.02	0.19	0.91	5.23	9550.00	80.00	51.00	0.00	83.67	158.27	12.25	19.49	0.14	0.68	3.92	24222.58	12.11
418	72	--	387.52	507.21	97.26	1067.56	1.90	7.42	175.71	3500	94	13	--	67.00	44.32	20.11	80.06	0.29	0.71	13.67		
				Total Off-Road											**Total Off-Road**							
219	100	--	207.96	402.62	52.37	437.04	3.93	18.54	219.22	9750	88	52	--	91.67	159.85	12.56	22.99	0.17	0.83	4.19		
				Total On-Road											**Total On-Road**							
			0.10398	0.2013118																		
Max Daily Hours =		637.00	Gas	211.29	16.36	26.02	0.19	0.91	5.23		Max Daily Hours =		182.00									
Avg. Daily Hours =		595.48		191.33207	36.01138	411.02051	3.74206	17.63039	213.98869		Avg. Daily Hours =		158.67									
Peaking Factor =		1.07	Gas	0.1056458	0.008178	0.0130117	9.44E-05	0.000453	0.002614		Peaking Factor =		1.15									
			Diesel	0.095666	0.018006	0.2055103	0.001871	0.008815	0.106994													
							Gas	0.008178	0.002614													
							Diesel	0.018006	0.106994													

Table L.1-4
Construction Equipment Calculations - Parameters and Emissions

(lb/year)	
SOx	PM-10
108.282349	754.453

Table L.1-5
Construction Asphalt Paving

Operation: Asphalt Paving					
Materials:					
	Asphalt Concrete (Max Daily)	2.1	acreage/day	2.62	ROG lbs/acreage of asphalt concrete
	Asphalt Concrete (Total)	72.8	acreage/construction period		
Emissions:					
	Asphalt Concrete (Max Daily)	5.4	lbs/day		
	Asphalt Concrete (Total)	190.6	lbs/construction period		
	Asphalt Concrete (Average Dai	0.6	lbs/day	300	Days of Construction
	Asphalt Concrete (Maximum)	0.226	Lbs/Hour		
	Asphalt Concrete (Maximum)	2.8E-02	Grm/Sec		
	Asphalt Concrete (Average)	0.026	Lbs/Hour		
	Asphalt Concrete (Average)	3.3E-03	Grm/Sec		
Speciation:	100% Naptha				
Source: MSDS					

Table L.1-6
Construction Pavement Striping/Painting

Operation: Pavement Marking Paint Evaporation						
Materials:						
	Paint (Max Daily)	926	gal/day	3.92	VOC lbs/gal	
	Paint (Total)	26,833	gal/construction period			
Emissions:						
	Paint (Max Daily	3,628	lbs/day			
	Paint (Total)	105,132	lbs/construction period			
	Paint (Average Daily)	350	lbs/day	300	Days of Construction	
	Paint (Maximum Daily)	151.2	Lbs/Hour			
	Paint (Maximum Daily)	19.05	Grm/Sec			
	Paint (Average Daily)	14.6	Lbs/Hour			
	Paint (Average Daily)	1.840	Grm/Sec			
Speciation:	Methanol (Compound Wt Fraction = 0.0223)					
Notes: Information obtained from Aexcel MSDS 72Y-A038 and 72W-A037.						

Table L.1-7
Construction Painting Emissions

Operation: Valve Piping, Appurtenances, and Connections Paint									
Materials:									
	Prime Coat		8.3	lb/day	Eight 16.5 oz spray cans				
Emissions:									
	Volatile (86.3%)		7.11	lbs/day					
			0.296	Lbs/Hour					
			0.037	Grm/Sec					
			1.24E-04						
Speciation:									
						Compound Wt Fraction		Compound Emissions	Adjusted Wt Fraction
	Paint		Isopropanol			0.348		2.476	0.662
			Propylene Glycol Methyl Ether			0.083		0.590	0.158
			Ethanol			0.055		0.391	0.105
			Toluene			0.04		0.285	0.076
			Total					3.742	1.000
Source: Ameron Coatings MSDS D9L00046.									
The product is 86.23% volatile.									

This page intentionally left blank.

Attachment 2: AERMOD Input Files for 2005 SAIP and 2003 Baseline Diesel PM Runs

This page intentionally left blank.

Table L.2-1
AERMOD Input File for 2005 SAIP Diesel PM Run

```
CO STARTING
   TITLEONE LAX SAIP05 OPERATIONS AND CONSTRUCTIONS COMBINED
   TITLETWO EDMS421
   MODELOPT CONC DFAULT
   AVERTIME 1 ANNUAL
   POLLUTID D-PM10
   FLAGPOLE 1.8
   RUNORNOT RUN
   SAVEFILE
CO FINISHED

SO STARTING
** ---------------------------------------------------------------
**  SOURCE TYPE          EDMS SOURCE NAMES    AERMOD SOURCE NAMES
** ---------------------------------------------------------------
**  Parking Facility     CTA Structure 1      PARK_001
**                       CTA Structure 2      PARK_002
**                       CTA Structure 2A     PARK_003
**                       CTA Structure 3      PARK_004
**                       CTA Structure 4      PARK_005
**                       CTA Structure 5      PARK_006
**                       CTA Structure 6      PARK_007
**                       CTA Structure 7      PARK_008
**                       East Side Private    PARK_009
**                       East Side Staging    PARK_010
**                       Eastside Employee    PARK_011
**                       Eastside RAC         PARK_012
**                       Eastside Remote      PARK_013
**  Stationary Source    East Cup             STAT_001
**                       Restaurant 1         STAT_002
**                       Restaurant 2         STAT_003
**                       Restaurant 3         STAT_004
**                       Restaurant 4         STAT_005
**                       Flight Kitchens      STAT_006
**                       East Cup CT          STAT_007
**                       ENGTEST1             STAT_008
**                       ENGTEST3             STAT_009
**                       ENGTEST4             STAT_010
**                       ENGTEST5             STAT_011
**                       Maint1               STAT_012
**                       Maint2               STAT_013
**                       Maint3               STAT_014
**                       Maint4               STAT_015
**                       Northside            STAT_016
**                       ENGTEST6             STAT_017
**  Gate                 CA3                  GATE_001
**                       GA1                  GATE_002
**                       T1                   GATE_003
**                       T2                   GATE_004
**                       T3                   GATE_005
**                       TBIT N               GATE_006
**                       TBIT S               GATE_007
**                       T4                   GATE_008
**                       T5                   GATE_009
**                       T6                   GATE_010
**                       T7                   GATE_011
**                       T8                   GATE_012
**                       IWP                  GATE_013
**                       UZ                   GATE_014
**                       R1                   GATE_015
**  Roadway              Center Way           RD001001
**                                            RD001002
**                                            RD001003
**                                            RD001004
**                                            RD001005
**                                            RD001006
**                       Century              RD002001
**                       East Way             RD003001
**                                            RD003002
**                       FEDXCAR1             RD004001
**                       FEDXCAR2             RD005001
```

Table L.2-1
AERMOD Input File for 2005 SAIP Diesel PM Run

```
**                                      RD005002
**                    FEDXCAR3          RD006001
**                    GARRETT1          RD007001
**                                      RD007002
**                    N. Sepulveda      RD008001
**                                      RD008002
**                    NECARGO1          RD009001
**                    NECARGO10         RD010001
**                                      RD010002
**                    NECARGO2          RD011001
**                    NECARGO3          RD012001
**                    NECARGO4          RD013001
**                                      RD013002
**                                      RD013003
**                    NECARGO5          RD014001
**                    NECARGO6          RD015001
**                                      RD015002
**                                      RD015003
**                    NECARGO7          RD016001
**                                      RD016002
**                    NECARGO8          RD017001
**                                      RD017002
**                                      RD017003
**                    NECARGO9          RD018001
**                                      RD018002
**                    Re-Circulation    RD019001
**                                      RD019002
**                    S. Sepulveda      RD020001
**                                      RD020002
**                                      RD020003
**                    SCARGO            RD021001
**                                      RD021002
**                    SECARGO1          RD022001
**                                      RD022002
**                                      RD022003
**                    SECARGO2          RD023001
**                                      RD023002
**                                      RD023003
**                    SECARGO3          RD024001
**                                      RD024002
**                                      RD024003
**                    Spine Rd/World Way RD025001
**                                      RD025002
**                                      RD025003
**                                      RD025004
**                                      RD025005
**                                      RD025006
**                                      RD025007
**                                      RD025008
**                                      RD025009
**                                      RD025010
**                    SWANCIL1          RD026001
**                                      RD026002
**                                      RD026003
**                                      RD026004
**                                      RD026005
**                    SWCARGO1          RD027001
**                                      RD027002
**                                      RD027003
**                                      RD027004
**                                      RD027005
**                    T1                RD028001
**                                      RD028002
**                                      RD028003
**                    T2                RD029001
**                                      RD029002
**                    T3                RD030001
**                                      RD030002
**                    T4                RD031001
**                                      RD031002
**                    T5                RD032001
```

Table L.2-1
AERMOD Input File for 2005 SAIP Diesel PM Run

```
**                          T6                  RD033001
**                                              RD033002
**                          T7                  RD034001
**                                              RD034002
**                          T8                  RD035001
**                                              RD035002
**                          TBIT                RD036001
**                                              RD036002
**                          West Way            RD037001
**                                              RD037002
**  Taxiway                 48                  TW001001
**                                              TW001002
**                                              TW001003
**                                              TW001004
**                                              TW001005
**                                              TW001006
**                          49                  TW002001
**                                              TW002002
**                                              TW002003
**                                              TW002004
**                                              TW002005
**                                              TW002006
**                          75                  TW003001
**                                              TW003002
**                                              TW003003
**                                              TW003004
**                                              TW003005
**                                              TW003006
**                          F (East)            TW004001
**                                              TW004002
**                                              TW004003
**                                              TW004004
**                                              TW004005
**                                              TW004006
**                                              TW004007
**                          J (East)            TW005001
**                                              TW005002
**                                              TW005003
**                                              TW005004
**                                              TW005005
**                                              TW005006
**                                              TW005007
**                                              TW005008
**                                              TW005009
**                                              TW005010
**                                              TW005011
**                                              TW005012
**                                              TW005013
**                                              TW005014
**                          J (West)            TW006001
**                                              TW006002
**                                              TW006003
**                                              TW006004
**                                              TW006005
**                                              TW006006
**                                              TW006007
**                                              TW006008
**                          U (West)            TW007001
**                                              TW007002
**                                              TW007003
**                          U (Ctr)             TW008001
**                                              TW008002
**                                              TW008003
**                                              TW008004
**                                              TW008005
**                                              TW008006
**                                              TW008007
**                                              TW008008
**                          U (East)            TW009001
**                                              TW009002
**                                              TW009003
```

Table L.2-1
AERMOD Input File for 2005 SAIP Diesel PM Run

```
**                                     TW009004
**                                     TW009005
**                 CADEP               TW010001
**                                     TW010002
**                                     TW010003
**                                     TW010004
**                                     TW010005
**                                     TW010006
**                                     TW010007
**                                     TW010008
**                 JTERM               TW011001
**                                     TW011002
**                                     TW011003
**                                     TW011004
**                                     TW011005
**                                     TW011006
**                                     TW011007
**                 F(extension)        TW012001
**                                     TW012002
**  Queue          25R                 QU25R001
**                                     QU25R002
**                                     QU25R003
**                                     QU25R004
**  Runway         7L-25R              RW07L001
**                                     RW07L002
**                                     RW07L003
**                                     RW07L004
**                                     RW07L005
**                                     RW07L006
**                                     RW07L007
**                                     RW07L008
**                                     RW07L009
**                                     RW07L010
**                                     RW07L011
**                                     RW07L012
**                                     RW07L013
**                                     RW07L014
**                                     RW07L015
**                                     RW07L016
**                                     RW07L017
**                                     RW07L018
**                                     RW07L019
**                                     RW07L020
**                                     RW07L021
**                                     RW07L022
**                                     RW07L023
**                                     RW07L024
**                                     RW07L025
**                                     RW07L026
**                                     RW07L027
**                                     RW07L028
**                                     RW07L029
**                                     RW07L030
**                                     RW07L031
**                                     RW07L032
**                                     RW07L033
**                                     RW07L034
**                                     RW07L035
**                                     RW07L036
**                                     RW07L037
**                                     RW07L038
**                                     RW07L039
**                                     RW07L040
**                                     RW07L041
**                                     RW07L042
**                                     RW07L043
**                                     RW07L044
**                                     RW07L045
**                                     RW07L046
**                                     RW07L047
**                                     RW07L048
```

Table L.2-1
AERMOD Input File for 2005 SAIP Diesel PM Run

```
**                                              RW07L049
**                                              RW07L050
**                                              RW07L051
**                                              RW07L052
**                                              RW07L053
**                                              RW07L054
**                                              RW07L055
**                                              RW07L056
**                                              RW07L057
**                                              RW07L058
**                                              RW07L059
**                                              RW07L060
**                                              RW07L061
**                                              RW07L062
**                                              RW07L063
**                                              RW07L064
**                                              RW07L065
**                                              RW07L066
**                                              RW07L067
**                                              RW07L068
**                                              RW07L069
**                                              RW07L070
**                                              RW07L071
**                                              RW07L072
**                                              RW07L073
**                                              RW07L074
**  Departure Space      25R                    DS25R002
**                                              DS25R003
**                                              DS25R004
**                                              DS25R005
**                                              DS25R007
**                                              DS25R008
**                                              DS25R009
**                                              DS25R010
**                                              DS25R011
**                                              DS25R012
**                                              DS25R013
**                                              DS25R014
**                                              DS25R015
**                                              DS25R016
**                                              DS25R039
**                                              DS25R040
**                                              DS25R041
**                                              DS25R042
**                                              DS25R043
**                                              DS25R044
**                                              DS25R045
**                                              DS25R046
**                                              DS25R047
**                                              DS25R048
**                                              DS25R049
**                                              DS25R050
**                                              DS25R051
**                                              DS25R052
**                                              DS25R053
**                                              DS25R075
**                                              DS25R076
**                                              DS25R077
**                                              DS25R078
**                                              DS25R079
**                                              DS25R080
**                                              DS25R081
**                                              DS25R082
**                                              DS25R083
**                                              DS25R084
**                                              DS25R085
**                                              DS25R086
**                                              DS25R087
**                                              DS25R088
**                                              DS25R089
**                                              DS25R090
```

Table L.2-1
AERMOD Input File for 2005 SAIP Diesel PM Run

```
**                                                    DS25R112
**                                                    DS25R113
**                                                    DS25R114
**                                                    DS25R115
**                                                    DS25R116
**                                                    DS25R117
**                                                    DS25R118
**                                                    DS25R119
**                                                    DS25R120
**                                                    DS25R121
**                                                    DS25R122
**                                                    DS25R123
**                                                    DS25R124
**                                                    DS25R125
**                                                    DS25R126
**                                                    DS25R127
**                                                    DS25R148
**                                                    DS25R149
**                                                    DS25R150
**                                                    DS25R151
**                                                    DS25R152
**                                                    DS25R153
**                                                    DS25R154
**                                                    DS25R155
**                                                    DS25R156
**                                                    DS25R157
**                                                    DS25R158
**                                                    DS25R159
**                                                    DS25R160
**                                                    DS25R161
**                                                    DS25R162
**                                                    DS25R163
**                                                    DS25R164
**                                                    DS25R184
**                                                    DS25R185
**                                                    DS25R186
**                                                    DS25R187
**                                                    DS25R188
**                                                    DS25R189
**                                                    DS25R190
**                                                    DS25R191
**                                                    DS25R192
**                                                    DS25R193
**                                                    DS25R194
**                                                    DS25R195
**                                                    DS25R196
**                                                    DS25R197
**                                                    DS25R198
**                                                    DS25R199
**                                                    DS25R200
**                                                    DS25R201
**                                                    DS25R221
**                                                    DS25R222
**                                                    DS25R223
**                                                    DS25R224
**                                                    DS25R225
**                                                    DS25R226
**                                                    DS25R227
**                                                    DS25R228
**                                                    DS25R229
**                                                    DS25R230
**                                                    DS25R231
**                                                    DS25R232
**                                                    DS25R233
**                                                    DS25R234
**                                                    DS25R235
**                                                    DS25R236
**                                                    DS25R237
**                                                    DS25R238
**                                                    DS25R257
**                                                    DS25R258
```

Table L.2-1
AERMOD Input File for 2005 SAIP Diesel PM Run

```
**                                          DS25R259
**                                          DS25R260
**                                          DS25R261
**                                          DS25R262
**                                          DS25R263
**                                          DS25R264
**                                          DS25R265
**                                          DS25R266
**                                          DS25R267
**                                          DS25R268
**                                          DS25R269
**                                          DS25R270
**                                          DS25R271
**                                          DS25R272
**                                          DS25R273
**                                          DS25R274
**                                          DS25R294
**                                          DS25R295
**                                          DS25R296
**                                          DS25R297
**                                          DS25R298
**                                          DS25R299
**                                          DS25R300
**                                          DS25R301
**                                          DS25R302
**                                          DS25R303
**                                          DS25R304
**                                          DS25R305
**                                          DS25R307
**                                          DS25R308
**                                          DS25R309
**                                          DS25R310
**                                          DS25R311
**                                          DS25R330
**                                          DS25R331
**                                          DS25R332
**                                          DS25R333
**                                          DS25R334
**                                          DS25R335
**                                          DS25R336
**                                          DS25R337
**                                          DS25R338
**                                          DS25R339
**                                          DS25R340
**                                          DS25R341
**                                          DS25R342
**                                          DS25R344
**                                          DS25R345
**                                          DS25R346
**                                          DS25R347
**                                          DS25R348
**                                          DS25R367
**                                          DS25R368
**                                          DS25R369
**                                          DS25R370
**                                          DS25R371
**                                          DS25R372
**                                          DS25R373
**                                          DS25R374
**                                          DS25R375
**                                          DS25R376
**                                          DS25R377
**                                          DS25R378
**                                          DS25R379
**                                          DS25R380
**                                          DS25R381
**                                          DS25R382
**                                          DS25R383
**                                          DS25R384
**                                          DS25R385
**                                          DS25R403
```

Table L.2-1
AERMOD Input File for 2005 SAIP Diesel PM Run

```
**                                       DS25R404
**                                       DS25R405
**                                       DS25R406
**                                       DS25R407
**                                       DS25R408
**                                       DS25R409
**                                       DS25R410
**                                       DS25R411
**                                       DS25R412
**                                       DS25R413
**                                       DS25R414
**                                       DS25R415
**                                       DS25R416
**                                       DS25R417
**                                       DS25R418
**                                       DS25R419
**                                       DS25R420
**                                       DS25R421
**                                       DS25R422
**                                       DS25R440
**                                       DS25R441
**                                       DS25R442
**                                       DS25R443
**                                       DS25R444
**                                       DS25R445
**                                       DS25R446
**                                       DS25R447
**                                       DS25R448
**                                       DS25R449
**                                       DS25R450
**                                       DS25R451
**                                       DS25R452
**                                       DS25R453
**                                       DS25R454
**                                       DS25R455
**                                       DS25R456
**                                       DS25R457
**                                       DS25R458
**                                       DS25R459
**                                       DS25R476
**                                       DS25R477
**                                       DS25R478
**                                       DS25R479
**                                       DS25R480
**                                       DS25R481
**                                       DS25R482
**                                       DS25R483
**                                       DS25R484
**                                       DS25R485
**                                       DS25R486
**                                       DS25R487
**                                       DS25R488
**                                       DS25R489
**                                       DS25R490
**                                       DS25R491
**                                       DS25R492
**                                       DS25R493
**                                       DS25R494
**                                       DS25R495
**                                       DS25R496
**                                       DS25R513
**                                       DS25R514
**                                       DS25R515
**                                       DS25R516
**                                       DS25R517
**                                       DS25R518
**                                       DS25R519
**                                       DS25R520
**                                       DS25R521
**                                       DS25R522
**                                       DS25R523
```

Table L.2-1
AERMOD Input File for 2005 SAIP Diesel PM Run

```
**                                          DS25R524
**                                          DS25R526
**                                          DS25R527
**                                          DS25R528
**                                          DS25R529
**                                          DS25R530
**                                          DS25R531
**                                          DS25R532
**                                          DS25R533
**  Approach Space      25R                 AS25R001
**                                          AS25R037
**                                          AS25R038
**                                          AS25R039
**                                          AS25R075
**                                          AS25R076
**                                          AS25R077
**                                          AS25R113
**                                          AS25R114
**                                          AS25R115
**                                          AS25R151
**                                          AS25R152
**                                          AS25R153
**                                          AS25R188
**                                          AS25R189
**                                          AS25R190
**                                          AS25R191
**                                          AS25R226
**                                          AS25R227
**                                          AS25R228
**                                          AS25R229
**                                          AS25R264
**                                          AS25R265
**                                          AS25R266
**                                          AS25R267
**                                          AS25R302
**                                          AS25R303
**                                          AS25R304
**                                          AS25R305
**                                          AS25R340
**                                          AS25R341
**                                          AS25R342
**                                          AS25R377
**                                          AS25R378
**                                          AS25R379
**                                          AS25R380
**                                          AS25R415
**                                          AS25R416
**                                          AS25R417
**                                          AS25R418
**                                          AS25R453
**                                          AS25R454
**                                          AS25R455
**                                          AS25R456
**                                          AS25R491
**                                          AS25R492
**                                          AS25R493
**                                          AS25R494
**                                          AS25R528
**                                          AS25R529
**                                          AS25R530
**                                          AS25R531
**                                          AS25R532
**  Queue               24R                 QU24R001
**                                          QU24R002
**  Runway              6L-24R              RW06L001
**                                          RW06L002
**                                          RW06L003
**                                          RW06L004
**                                          RW06L005
**                                          RW06L006
**                                          RW06L007
```

Table L.2-1
AERMOD Input File for 2005 SAIP Diesel PM Run

```
**                                           RW06L008
**                                           RW06L009
**                                           RW06L010
**                                           RW06L011
**                                           RW06L012
**                                           RW06L013
**                                           RW06L014
**                                           RW06L015
**                                           RW06L016
**                                           RW06L017
**                                           RW06L018
**                                           RW06L019
**                                           RW06L020
**                                           RW06L021
**                                           RW06L022
**                                           RW06L023
**                                           RW06L024
**                                           RW06L025
**                                           RW06L026
**                                           RW06L027
**                                           RW06L028
**                                           RW06L029
**                                           RW06L030
**                                           RW06L031
**                                           RW06L032
**                                           RW06L033
**                                           RW06L034
**                                           RW06L035
**                                           RW06L036
**                                           RW06L037
**                                           RW06L038
**                                           RW06L039
**                                           RW06L040
**                                           RW06L041
**                                           RW06L042
**                                           RW06L043
**                                           RW06L044
**                                           RW06L045
**                                           RW06L046
**                                           RW06L047
**                                           RW06L048
**                                           RW06L049
**                                           RW06L050
**                                           RW06L051
**                                           RW06L052
**                                           RW06L053
**                                           RW06L054
**                                           RW06L055
**  Departure Space      24R                 DS24R002
**                                           DS24R003
**                                           DS24R004
**                                           DS24R005
**                                           DS24R008
**                                           DS24R009
**                                           DS24R010
**                                           DS24R011
**                                           DS24R015
**                                           DS24R016
**                                           DS24R039
**                                           DS24R040
**                                           DS24R041
**                                           DS24R042
**                                           DS24R044
**                                           DS24R045
**                                           DS24R046
**                                           DS24R047
**                                           DS24R048
**                                           DS24R051
**                                           DS24R052
**                                           DS24R075
**                                           DS24R076
```

Table L.2-1
AERMOD Input File for 2005 SAIP Diesel PM Run

```
**                                                    DS24R077
**                                                    DS24R078
**                                                    DS24R079
**                                                    DS24R080
**                                                    DS24R081
**                                                    DS24R082
**                                                    DS24R083
**                                                    DS24R084
**                                                    DS24R088
**                                                    DS24R089
**                                                    DS24R112
**                                                    DS24R113
**                                                    DS24R114
**                                                    DS24R115
**                                                    DS24R117
**                                                    DS24R118
**                                                    DS24R119
**                                                    DS24R120
**                                                    DS24R121
**                                                    DS24R125
**                                                    DS24R126
**                                                    DS24R148
**                                                    DS24R149
**                                                    DS24R150
**                                                    DS24R151
**                                                    DS24R152
**                                                    DS24R153
**                                                    DS24R154
**                                                    DS24R155
**                                                    DS24R156
**                                                    DS24R157
**                                                    DS24R158
**                                                    DS24R161
**                                                    DS24R162
**                                                    DS24R163
**                                                    DS24R184
**                                                    DS24R185
**                                                    DS24R186
**                                                    DS24R187
**                                                    DS24R188
**                                                    DS24R189
**                                                    DS24R190
**                                                    DS24R191
**                                                    DS24R192
**                                                    DS24R193
**                                                    DS24R194
**                                                    DS24R198
**                                                    DS24R199
**                                                    DS24R200
**                                                    DS24R221
**                                                    DS24R222
**                                                    DS24R223
**                                                    DS24R224
**                                                    DS24R225
**                                                    DS24R226
**                                                    DS24R227
**                                                    DS24R228
**                                                    DS24R229
**                                                    DS24R230
**                                                    DS24R231
**                                                    DS24R235
**                                                    DS24R236
**                                                    DS24R237
**                                                    DS24R257
**                                                    DS24R258
**                                                    DS24R259
**                                                    DS24R260
**                                                    DS24R261
**                                                    DS24R262
**                                                    DS24R263
**                                                    DS24R264
```

Table L.2-1
AERMOD Input File for 2005 SAIP Diesel PM Run

```
**                                          DS24R265
**                                          DS24R266
**                                          DS24R267
**                                          DS24R272
**                                          DS24R273
**                                          DS24R274
**                                          DS24R294
**                                          DS24R295
**                                          DS24R296
**                                          DS24R297
**                                          DS24R298
**                                          DS24R299
**                                          DS24R300
**                                          DS24R301
**                                          DS24R302
**                                          DS24R303
**                                          DS24R304
**                                          DS24R309
**                                          DS24R310
**                                          DS24R311
**                                          DS24R330
**                                          DS24R331
**                                          DS24R332
**                                          DS24R333
**                                          DS24R334
**                                          DS24R336
**                                          DS24R337
**                                          DS24R338
**                                          DS24R339
**                                          DS24R340
**                                          DS24R341
**                                          DS24R346
**                                          DS24R347
**                                          DS24R348
**                                          DS24R367
**                                          DS24R368
**                                          DS24R369
**                                          DS24R370
**                                          DS24R371
**                                          DS24R373
**                                          DS24R374
**                                          DS24R375
**                                          DS24R376
**                                          DS24R377
**                                          DS24R382
**                                          DS24R383
**                                          DS24R384
**                                          DS24R385
**                                          DS24R403
**                                          DS24R404
**                                          DS24R405
**                                          DS24R406
**                                          DS24R407
**                                          DS24R408
**                                          DS24R409
**                                          DS24R410
**                                          DS24R411
**                                          DS24R412
**                                          DS24R413
**                                          DS24R414
**                                          DS24R419
**                                          DS24R420
**                                          DS24R421
**                                          DS24R422
**                                          DS24R440
**                                          DS24R441
**                                          DS24R442
**                                          DS24R443
**                                          DS24R444
**                                          DS24R446
**                                          DS24R447
```

Table L.2-1
AERMOD Input File for 2005 SAIP Diesel PM Run

```
**                                          DS24R448
**                                          DS24R449
**                                          DS24R450
**                                          DS24R451
**                                          DS24R456
**                                          DS24R457
**                                          DS24R458
**                                          DS24R476
**                                          DS24R477
**                                          DS24R478
**                                          DS24R479
**                                          DS24R480
**                                          DS24R481
**                                          DS24R482
**                                          DS24R483
**                                          DS24R484
**                                          DS24R485
**                                          DS24R486
**                                          DS24R487
**                                          DS24R493
**                                          DS24R494
**                                          DS24R495
**                                          DS24R513
**                                          DS24R514
**                                          DS24R515
**                                          DS24R516
**                                          DS24R517
**                                          DS24R518
**                                          DS24R519
**                                          DS24R520
**                                          DS24R521
**                                          DS24R522
**                                          DS24R523
**                                          DS24R524
**                                          DS24R530
**                                          DS24R531
**                                          DS24R532
**  Approach Space       24R                AS24R001
**                                          AS24R037
**                                          AS24R038
**                                          AS24R039
**                                          AS24R075
**                                          AS24R076
**                                          AS24R077
**                                          AS24R113
**                                          AS24R114
**                                          AS24R115
**                                          AS24R151
**                                          AS24R152
**                                          AS24R153
**                                          AS24R189
**                                          AS24R190
**                                          AS24R191
**                                          AS24R227
**                                          AS24R228
**                                          AS24R229
**                                          AS24R265
**                                          AS24R266
**                                          AS24R267
**                                          AS24R303
**                                          AS24R304
**                                          AS24R305
**                                          AS24R341
**                                          AS24R342
**                                          AS24R378
**                                          AS24R379
**                                          AS24R380
**                                          AS24R416
**                                          AS24R417
**                                          AS24R418
**                                          AS24R454
```

Table L.2-1
AERMOD Input File for 2005 SAIP Diesel PM Run

```
**                                        AS24R455
**                                        AS24R456
**                                        AS24R492
**                                        AS24R493
**                                        AS24R494
**                                        AS24R530
**                                        AS24R531
**                                        AS24R532
**  Queue               24L               QU24L001
**                                        QU24L002
**                                        QU24L003
**                                        QU24L004
**                                        QU24L005
**  Runway              6R-24L            RW06R001
**                                        RW06R002
**                                        RW06R003
**                                        RW06R004
**                                        RW06R005
**                                        RW06R006
**                                        RW06R007
**                                        RW06R008
**                                        RW06R009
**                                        RW06R010
**                                        RW06R011
**                                        RW06R012
**                                        RW06R013
**                                        RW06R014
**                                        RW06R015
**                                        RW06R016
**                                        RW06R017
**                                        RW06R018
**                                        RW06R019
**                                        RW06R020
**                                        RW06R021
**                                        RW06R022
**                                        RW06R023
**                                        RW06R024
**                                        RW06R025
**                                        RW06R026
**                                        RW06R027
**                                        RW06R028
**                                        RW06R029
**                                        RW06R030
**                                        RW06R031
**                                        RW06R032
**                                        RW06R033
**                                        RW06R034
**                                        RW06R035
**                                        RW06R036
**                                        RW06R037
**                                        RW06R038
**                                        RW06R039
**                                        RW06R040
**                                        RW06R041
**                                        RW06R042
**                                        RW06R043
**                                        RW06R044
**                                        RW06R045
**                                        RW06R046
**                                        RW06R047
**                                        RW06R048
**                                        RW06R049
**                                        RW06R050
**                                        RW06R051
**                                        RW06R052
**                                        RW06R053
**                                        RW06R054
**                                        RW06R055
**                                        RW06R056
**                                        RW06R057
**                                        RW06R058
```

Table L.2-1
AERMOD Input File for 2005 SAIP Diesel PM Run

```
**                                                     RW06R059
**                                                     RW06R060
**                                                     RW06R061
**                                                     RW06R062
**                                                     RW06R063
**  Departure Space     24L                            DS24L002
**                                                     DS24L003
**                                                     DS24L004
**                                                     DS24L005
**                                                     DS24L007
**                                                     DS24L008
**                                                     DS24L009
**                                                     DS24L010
**                                                     DS24L011
**                                                     DS24L012
**                                                     DS24L013
**                                                     DS24L014
**                                                     DS24L015
**                                                     DS24L016
**                                                     DS24L017
**                                                     DS24L039
**                                                     DS24L040
**                                                     DS24L041
**                                                     DS24L042
**                                                     DS24L043
**                                                     DS24L044
**                                                     DS24L045
**                                                     DS24L046
**                                                     DS24L047
**                                                     DS24L048
**                                                     DS24L049
**                                                     DS24L050
**                                                     DS24L051
**                                                     DS24L052
**                                                     DS24L053
**                                                     DS24L054
**                                                     DS24L075
**                                                     DS24L076
**                                                     DS24L077
**                                                     DS24L078
**                                                     DS24L079
**                                                     DS24L080
**                                                     DS24L081
**                                                     DS24L082
**                                                     DS24L083
**                                                     DS24L084
**                                                     DS24L085
**                                                     DS24L086
**                                                     DS24L087
**                                                     DS24L088
**                                                     DS24L089
**                                                     DS24L090
**                                                     DS24L091
**                                                     DS24L092
**                                                     DS24L112
**                                                     DS24L113
**                                                     DS24L114
**                                                     DS24L115
**                                                     DS24L116
**                                                     DS24L117
**                                                     DS24L118
**                                                     DS24L119
**                                                     DS24L120
**                                                     DS24L121
**                                                     DS24L122
**                                                     DS24L123
**                                                     DS24L124
**                                                     DS24L125
**                                                     DS24L126
**                                                     DS24L127
**                                                     DS24L128
```

Table L.2-1
AERMOD Input File for 2005 SAIP Diesel PM Run

```
**                                                  DS24L129
**                                                  DS24L148
**                                                  DS24L149
**                                                  DS24L150
**                                                  DS24L151
**                                                  DS24L152
**                                                  DS24L153
**                                                  DS24L154
**                                                  DS24L155
**                                                  DS24L156
**                                                  DS24L157
**                                                  DS24L158
**                                                  DS24L159
**                                                  DS24L160
**                                                  DS24L161
**                                                  DS24L162
**                                                  DS24L163
**                                                  DS24L164
**                                                  DS24L165
**                                                  DS24L166
**                                                  DS24L184
**                                                  DS24L185
**                                                  DS24L186
**                                                  DS24L187
**                                                  DS24L188
**                                                  DS24L189
**                                                  DS24L190
**                                                  DS24L191
**                                                  DS24L192
**                                                  DS24L193
**                                                  DS24L194
**                                                  DS24L195
**                                                  DS24L196
**                                                  DS24L197
**                                                  DS24L198
**                                                  DS24L199
**                                                  DS24L200
**                                                  DS24L201
**                                                  DS24L202
**                                                  DS24L203
**                                                  DS24L221
**                                                  DS24L222
**                                                  DS24L223
**                                                  DS24L224
**                                                  DS24L225
**                                                  DS24L226
**                                                  DS24L227
**                                                  DS24L228
**                                                  DS24L229
**                                                  DS24L230
**                                                  DS24L231
**                                                  DS24L232
**                                                  DS24L233
**                                                  DS24L234
**                                                  DS24L235
**                                                  DS24L236
**                                                  DS24L237
**                                                  DS24L238
**                                                  DS24L239
**                                                  DS24L240
**                                                  DS24L241
**                                                  DS24L257
**                                                  DS24L258
**                                                  DS24L259
**                                                  DS24L260
**                                                  DS24L261
**                                                  DS24L262
**                                                  DS24L263
**                                                  DS24L264
**                                                  DS24L265
**                                                  DS24L266
```

Table L.2-1
AERMOD Input File for 2005 SAIP Diesel PM Run

```
**                                      DS24L267
**                                      DS24L268
**                                      DS24L269
**                                      DS24L270
**                                      DS24L271
**                                      DS24L272
**                                      DS24L273
**                                      DS24L274
**                                      DS24L277
**                                      DS24L278
**                                      DS24L294
**                                      DS24L295
**                                      DS24L296
**                                      DS24L297
**                                      DS24L298
**                                      DS24L299
**                                      DS24L300
**                                      DS24L301
**                                      DS24L302
**                                      DS24L303
**                                      DS24L304
**                                      DS24L305
**                                      DS24L307
**                                      DS24L308
**                                      DS24L309
**                                      DS24L310
**                                      DS24L311
**                                      DS24L314
**                                      DS24L315
**                                      DS24L330
**                                      DS24L331
**                                      DS24L332
**                                      DS24L333
**                                      DS24L334
**                                      DS24L335
**                                      DS24L336
**                                      DS24L337
**                                      DS24L338
**                                      DS24L339
**                                      DS24L340
**                                      DS24L341
**                                      DS24L342
**                                      DS24L344
**                                      DS24L345
**                                      DS24L346
**                                      DS24L347
**                                      DS24L348
**                                      DS24L351
**                                      DS24L352
**                                      DS24L367
**                                      DS24L368
**                                      DS24L369
**                                      DS24L370
**                                      DS24L371
**                                      DS24L372
**                                      DS24L373
**                                      DS24L374
**                                      DS24L375
**                                      DS24L376
**                                      DS24L377
**                                      DS24L378
**                                      DS24L379
**                                      DS24L380
**                                      DS24L381
**                                      DS24L382
**                                      DS24L383
**                                      DS24L384
**                                      DS24L385
**                                      DS24L388
**                                      DS24L389
**                                      DS24L390
```

Table L.2-1
AERMOD Input File for 2005 SAIP Diesel PM Run

```
**                                                  DS24L403
**                                                  DS24L404
**                                                  DS24L405
**                                                  DS24L406
**                                                  DS24L407
**                                                  DS24L408
**                                                  DS24L409
**                                                  DS24L410
**                                                  DS24L411
**                                                  DS24L412
**                                                  DS24L413
**                                                  DS24L414
**                                                  DS24L415
**                                                  DS24L416
**                                                  DS24L417
**                                                  DS24L418
**                                                  DS24L419
**                                                  DS24L420
**                                                  DS24L421
**                                                  DS24L422
**                                                  DS24L426
**                                                  DS24L427
**                                                  DS24L440
**                                                  DS24L441
**                                                  DS24L443
**                                                  DS24L444
**                                                  DS24L445
**                                                  DS24L446
**                                                  DS24L447
**                                                  DS24L448
**                                                  DS24L449
**                                                  DS24L450
**                                                  DS24L451
**                                                  DS24L452
**                                                  DS24L453
**                                                  DS24L454
**                                                  DS24L455
**                                                  DS24L456
**                                                  DS24L457
**                                                  DS24L458
**                                                  DS24L459
**                                                  DS24L463
**                                                  DS24L464
**                                                  DS24L476
**                                                  DS24L477
**                                                  DS24L478
**                                                  DS24L479
**                                                  DS24L480
**                                                  DS24L481
**                                                  DS24L482
**                                                  DS24L483
**                                                  DS24L484
**                                                  DS24L485
**                                                  DS24L486
**                                                  DS24L487
**                                                  DS24L488
**                                                  DS24L489
**                                                  DS24L490
**                                                  DS24L491
**                                                  DS24L492
**                                                  DS24L493
**                                                  DS24L494
**                                                  DS24L495
**                                                  DS24L496
**                                                  DS24L500
**                                                  DS24L501
**                                                  DS24L513
**                                                  DS24L514
**                                                  DS24L516
**                                                  DS24L517
**                                                  DS24L518
```

Table L.2-1
AERMOD Input File for 2005 SAIP Diesel PM Run

```
**                                              DS24L519
**                                              DS24L520
**                                              DS24L521
**                                              DS24L522
**                                              DS24L523
**                                              DS24L524
**                                              DS24L526
**                                              DS24L527
**                                              DS24L528
**                                              DS24L529
**                                              DS24L530
**                                              DS24L531
**                                              DS24L532
**                                              DS24L533
**                                              DS24L537
**                                              DS24L538
**                                              DS24L539
**  Approach Space       24L                    AS24L001
**                                              AS24L037
**                                              AS24L038
**                                              AS24L039
**                                              AS24L075
**                                              AS24L076
**                                              AS24L077
**                                              AS24L113
**                                              AS24L114
**                                              AS24L115
**                                              AS24L151
**                                              AS24L152
**                                              AS24L153
**                                              AS24L188
**                                              AS24L189
**                                              AS24L190
**                                              AS24L191
**                                              AS24L226
**                                              AS24L227
**                                              AS24L228
**                                              AS24L229
**                                              AS24L264
**                                              AS24L265
**                                              AS24L266
**                                              AS24L267
**                                              AS24L302
**                                              AS24L303
**                                              AS24L304
**                                              AS24L305
**                                              AS24L340
**                                              AS24L341
**                                              AS24L342
**                                              AS24L377
**                                              AS24L378
**                                              AS24L379
**                                              AS24L380
**                                              AS24L415
**                                              AS24L416
**                                              AS24L417
**                                              AS24L418
**                                              AS24L453
**                                              AS24L454
**                                              AS24L455
**                                              AS24L456
**                                              AS24L491
**                                              AS24L492
**                                              AS24L493
**                                              AS24L494
**                                              AS24L528
**                                              AS24L529
**                                              AS24L530
**                                              AS24L531
**                                              AS24L532
SO ELEVUNIT METERS
```

Table L.2-1
AERMOD Input File for 2005 SAIP Diesel PM Run

```
**---------------------------------
** CONSTRUCTION SOURCES
**---------------------------------
** Source Location **
** Source ID - Type - X Coord. - Y Coord. **
** Line Source represented by Separated Volume Sources
** ------------------------------------------------------------------
** LINE Source ID = ACUTE1
** DESCRSRC Combustion-Acute Exhaust Scaler
** Length of Side = 50.00
** Emission Rate = 1.000000
** Elevated
** Vertical Dimension = 5.00
** SZINIT = 1.16
** Nodes = 2
** -1549.05, -1121.42, 0.00, 5.00, 0.0
** 1716.58, -751.72, 0.00, 5.00, 45.62
** ------------------------------------------------------------------
   LOCATION L0000001 VOLUME -1524.209 -1118.608 0.0
   LOCATION L0000002 VOLUME -1426.756 -1107.575 0.0
   LOCATION L0000003 VOLUME -1329.303 -1096.543 0.0
   LOCATION L0000004 VOLUME -1231.850 -1085.510 0.0
   LOCATION L0000005 VOLUME -1134.397 -1074.477 0.0
   LOCATION L0000006 VOLUME -1036.944 -1063.445 0.0
   LOCATION L0000007 VOLUME -939.491 -1052.412 0.0
   LOCATION L0000008 VOLUME -842.038 -1041.380 0.0
   LOCATION L0000009 VOLUME -744.585 -1030.347 0.0
   LOCATION L0000010 VOLUME -647.132 -1019.314 0.0
   LOCATION L0000011 VOLUME -549.679 -1008.282 0.0
   LOCATION L0000012 VOLUME -452.226 -997.249 0.0
   LOCATION L0000013 VOLUME -354.773 -986.217 0.0
   LOCATION L0000014 VOLUME -257.321 -975.184 0.0
   LOCATION L0000015 VOLUME -159.868 -964.152 0.0
   LOCATION L0000016 VOLUME -62.415 -953.119 0.0
   LOCATION L0000017 VOLUME 35.038 -942.086 0.0
   LOCATION L0000018 VOLUME 132.491 -931.054 0.0
   LOCATION L0000019 VOLUME 229.944 -920.021 0.0
   LOCATION L0000020 VOLUME 327.397 -908.989 0.0
   LOCATION L0000021 VOLUME 424.850 -897.956 0.0
   LOCATION L0000022 VOLUME 522.303 -886.923 0.0
   LOCATION L0000023 VOLUME 619.756 -875.891 0.0
   LOCATION L0000024 VOLUME 717.209 -864.858 0.0
   LOCATION L0000025 VOLUME 814.662 -853.826 0.0
   LOCATION L0000026 VOLUME 912.115 -842.793 0.0
   LOCATION L0000027 VOLUME 1009.568 -831.760 0.0
   LOCATION L0000028 VOLUME 1107.021 -820.728 0.0
   LOCATION L0000029 VOLUME 1204.474 -809.695 0.0
   LOCATION L0000030 VOLUME 1301.926 -798.663 0.0
   LOCATION L0000031 VOLUME 1399.379 -787.630 0.0
   LOCATION L0000032 VOLUME 1496.832 -776.597 0.0
   LOCATION L0000033 VOLUME 1594.285 -765.565 0.0
   LOCATION L0000034 VOLUME 1691.738 -754.532 0.0
** End of Line Source
** Line Source represented by Separated Volume Sources
** ------------------------------------------------------------------
** LINE Source ID = ACUTE2
** DESCRSRC Combustion-Acute Evaporative Scaler
** Length of Side = 50.00
** Emission Rate = 1.000000
** Vertical Dimension = 5.00
** SZINIT = 2.33
** Nodes = 2
** -1549.05, -1121.42, 0.00, 0.00, 0.0
** 1716.58, -751.72, 0.00, 0.00, 45.62
** ------------------------------------------------------------------
   LOCATION L0000617 VOLUME -1524.209 -1118.608 0.0
   LOCATION L0000618 VOLUME -1426.756 -1107.575 0.0
   LOCATION L0000619 VOLUME -1329.303 -1096.543 0.0
   LOCATION L0000620 VOLUME -1231.850 -1085.510 0.0
   LOCATION L0000621 VOLUME -1134.397 -1074.477 0.0
   LOCATION L0000622 VOLUME -1036.944 -1063.445 0.0
```

Table L.2-1
AERMOD Input File for 2005 SAIP Diesel PM Run

```
   LOCATION L0000623 VOLUME -939.491 -1052.412 0.0
   LOCATION L0000624 VOLUME -842.038 -1041.380 0.0
   LOCATION L0000625 VOLUME -744.585 -1030.347 0.0
   LOCATION L0000626 VOLUME -647.132 -1019.314 0.0
   LOCATION L0000627 VOLUME -549.679 -1008.282 0.0
   LOCATION L0000628 VOLUME -452.226 -997.249 0.0
   LOCATION L0000629 VOLUME -354.773 -986.217 0.0
   LOCATION L0000630 VOLUME -257.321 -975.184 0.0
   LOCATION L0000631 VOLUME -159.868 -964.152 0.0
   LOCATION L0000632 VOLUME -62.415 -953.119 0.0
   LOCATION L0000633 VOLUME 35.038 -942.086 0.0
   LOCATION L0000634 VOLUME 132.491 -931.054 0.0
   LOCATION L0000635 VOLUME 229.944 -920.021 0.0
   LOCATION L0000636 VOLUME 327.397 -908.989 0.0
   LOCATION L0000637 VOLUME 424.850 -897.956 0.0
   LOCATION L0000638 VOLUME 522.303 -886.923 0.0
   LOCATION L0000639 VOLUME 619.756 -875.891 0.0
   LOCATION L0000640 VOLUME 717.209 -864.858 0.0
   LOCATION L0000641 VOLUME 814.662 -853.826 0.0
   LOCATION L0000642 VOLUME 912.115 -842.793 0.0
   LOCATION L0000643 VOLUME 1009.568 -831.760 0.0
   LOCATION L0000644 VOLUME 1107.021 -820.728 0.0
   LOCATION L0000645 VOLUME 1204.474 -809.695 0.0
   LOCATION L0000646 VOLUME 1301.926 -798.663 0.0
   LOCATION L0000647 VOLUME 1399.379 -787.630 0.0
   LOCATION L0000648 VOLUME 1496.832 -776.597 0.0
   LOCATION L0000649 VOLUME 1594.285 -765.565 0.0
   LOCATION L0000650 VOLUME 1691.738 -754.532 0.0
** End of Line Source
** End of Construction Sources

** -----------------------------------------------------------
**           SOURCE  TYPE           X(m)       Y(m)       Z(m)
** -----------------------------------------------------------
   LOCATION PARK_001 AREAPOLY      80.00      20.00       0.00
   LOCATION PARK_002 AREAPOLY    -300.00      10.00       0.00
   LOCATION PARK_003 AREAPOLY    -200.00      35.00       0.00
   LOCATION PARK_004 AREAPOLY    -510.00     -10.00       0.00
   LOCATION PARK_005 AREAPOLY    -495.00    -165.00       0.00
   LOCATION PARK_006 AREAPOLY    -290.00    -150.00       0.00
   LOCATION PARK_007 AREAPOLY    -190.00    -135.00       0.00
   LOCATION PARK_008 AREAPOLY      95.00     -90.00       0.00
   LOCATION PARK_009 AREAPOLY     300.00     165.00       0.00
   LOCATION PARK_010 AREAPOLY     335.00     670.00       0.00
   LOCATION PARK_011 AREAPOLY    2234.50    -999.30       0.00
   LOCATION PARK_012 AREAPOLY    1240.00     530.00       0.00
   LOCATION PARK_013 AREAPOLY     600.00     530.00       0.00
   LOCATION STAT_001 POINT       -230.00     -10.00       0.00
   LOCATION STAT_002 POINT        140.00     230.00       0.00
   LOCATION STAT_003 POINT       -620.00     -30.00       0.00
   LOCATION STAT_004 POINT       -190.00    -257.00       0.00
   LOCATION STAT_005 POINT        245.00    -220.00       0.00
   LOCATION STAT_006 POINT       -900.00   -1340.00       0.00
   LOCATION STAT_007 POINT       -200.00     -85.00       0.00
   LOCATION STAT_008 POINT      -1871.90     157.40       0.00
   LOCATION STAT_009 POINT      -1746.90    -648.10       0.00
   LOCATION STAT_010 POINT      -1000.40     233.30       0.00
   LOCATION STAT_011 POINT      -1009.60    -559.80       0.00
   LOCATION STAT_012 POINT       1360.00    -191.00       0.00
   LOCATION STAT_013 POINT      -1976.00     -59.00       0.00
   LOCATION STAT_014 POINT      -1774.00    -508.00       0.00
   LOCATION STAT_015 POINT      -1253.00    -403.00       0.00
   LOCATION STAT_016 POINT        189.60    1316.40       0.00
   LOCATION STAT_017 POINT        782.00     -69.30       0.00
   LOCATION GATE_001 VOLUME      1269.00   -1140.00       0.00
   LOCATION GATE_002 VOLUME       710.00   -1133.00       0.00
   LOCATION GATE_003 VOLUME       116.00     333.00       0.00
   LOCATION GATE_004 VOLUME      -145.00     266.00       0.00
   LOCATION GATE_005 VOLUME      -453.00     253.00       0.00
   LOCATION GATE_006 VOLUME      -714.00     162.00       0.00
   LOCATION GATE_007 VOLUME      -651.00    -383.00       0.00
```

Table L.2-1
AERMOD Input File for 2005 SAIP Diesel PM Run

```
LOCATION GATE_008 VOLUME     -396.00    -393.00       0.00
LOCATION GATE_009 VOLUME     -176.00    -379.00       0.00
LOCATION GATE_010 VOLUME       42.00    -336.00       0.00
LOCATION GATE_011 VOLUME      266.00    -309.00       0.00
LOCATION GATE_012 VOLUME      467.00    -249.00       0.00
LOCATION GATE_013 VOLUME    -2642.00     -45.00       0.00
LOCATION GATE_014 VOLUME      974.00     -25.00       0.00
LOCATION GATE_015 VOLUME     -950.00    -470.00       0.00
LOCATION RD001001 AREA       -513.87     -40.04       0.00
LOCATION RD001002 AREA       -331.21     -24.04       0.00
LOCATION RD001003 AREA       -148.54      -8.04       0.00
LOCATION RD001004 AREA         34.13       7.96       0.00
LOCATION RD001005 AREA        216.79      23.96       0.00
LOCATION RD001006 AREA        399.46      39.96       0.00
LOCATION RD002001 AREA        580.62      55.71       0.00
LOCATION RD003001 AREA         75.93     134.20       0.00
LOCATION RD003002 AREA         90.93      10.20       0.00
LOCATION RD004001 AREA       1453.49   -1417.09       0.00
LOCATION RD005001 AREA       1428.46   -1285.39       0.00
LOCATION RD005002 AREA       1323.86   -1280.79       0.00
LOCATION RD006001 AREA       1229.61   -1267.56       0.00
LOCATION RD007001 AREA        682.79   -1417.48       0.00
LOCATION RD007002 AREA        639.39   -1267.63       0.00
LOCATION RD008001 AREA        573.00      45.96       0.00
LOCATION RD008002 AREA        572.50     162.46       0.00
LOCATION RD009001 AREA       1152.46     134.96       0.00
LOCATION RD010001 AREA       2179.68     108.16       0.00
LOCATION RD010002 AREA       2189.33     -64.99       0.00
LOCATION RD011001 AREA       1156.90     -23.10       0.00
LOCATION RD012001 AREA       1292.70     -33.10       0.00
LOCATION RD013001 AREA       1302.65      97.20       0.00
LOCATION RD013002 AREA       1455.98      98.00       0.00
LOCATION RD013003 AREA       1609.31      98.80       0.00
LOCATION RD014001 AREA       1521.00      87.20       0.00
LOCATION RD015001 AREA       1510.97     -26.70       0.00
LOCATION RD015002 AREA       1647.47     -26.30       0.00
LOCATION RD015003 AREA       1783.97     -25.90       0.00
LOCATION RD016001 AREA       1599.30     -36.60       0.00
LOCATION RD016002 AREA       1600.50    -158.05       0.00
LOCATION RD017001 AREA       1887.64    -302.80       0.00
LOCATION RD017002 AREA       1900.47    -161.26       0.00
LOCATION RD017003 AREA       1913.31     -19.73       0.00
LOCATION RD018001 AREA       1933.83      92.34       0.00
LOCATION RD018002 AREA       2051.23     104.94       0.00
LOCATION RD019001 AREA        377.98     126.72       0.00
LOCATION RD019002 AREA        403.33      29.52       0.00
LOCATION RD020001 AREA        593.00      45.92       0.00
LOCATION RD020002 AREA        591.67    -115.42       0.00
LOCATION RD020003 AREA        590.33    -276.75       0.00
LOCATION RD021001 AREA       1040.98   -1393.08       0.00
LOCATION RD021002 AREA        886.98   -1369.43       0.00
LOCATION RD022001 AREA       2163.00    -890.02       0.00
LOCATION RD022002 AREA       2167.80   -1059.55       0.00
LOCATION RD022003 AREA       2172.60   -1229.08       0.00
LOCATION RD023001 AREA       2167.37   -1408.90       0.00
LOCATION RD023002 AREA       2027.07   -1408.47       0.00
LOCATION RD023003 AREA       1886.77   -1408.03       0.00
LOCATION RD024001 AREA       1736.50   -1397.57       0.00
LOCATION RD024002 AREA       1736.93   -1258.27       0.00
LOCATION RD024003 AREA       1737.37   -1118.97       0.00
LOCATION RD025001 AREA      -2944.18    -373.67       0.00
LOCATION RD025002 AREA      -2749.43    -350.44       0.00
LOCATION RD025003 AREA      -2554.68    -327.21       0.00
LOCATION RD025004 AREA      -2359.93    -303.98       0.00
LOCATION RD025005 AREA      -2165.18    -280.75       0.00
LOCATION RD025006 AREA      -1970.43    -257.52       0.00
LOCATION RD025007 AREA      -1775.68    -234.29       0.00
LOCATION RD025008 AREA      -1580.93    -211.06       0.00
LOCATION RD025009 AREA      -1386.18    -187.83       0.00
LOCATION RD025010 AREA      -1191.43    -164.60       0.00
LOCATION RD026001 AREA       -387.10   -1380.00       0.00
```

Table L.2-1
AERMOD Input File for 2005 SAIP Diesel PM Run

```
LOCATION RD026002 AREA         -561.60   -1383.42        0.00
LOCATION RD026003 AREA         -736.10   -1386.84        0.00
LOCATION RD026004 AREA         -910.60   -1390.26        0.00
LOCATION RD026005 AREA        -1085.10   -1393.68        0.00
LOCATION RD027001 AREA          446.17   -1303.76        0.00
LOCATION RD027002 AREA          281.13   -1318.22        0.00
LOCATION RD027003 AREA          116.09   -1332.68        0.00
LOCATION RD027004 AREA          -48.95   -1347.14        0.00
LOCATION RD027005 AREA         -213.99   -1361.60        0.00
LOCATION RD028001 AREA          581.34      36.14        0.00
LOCATION RD028002 AREA          409.01      65.14        0.00
LOCATION RD028003 AREA          236.67      94.14        0.00
LOCATION RD029001 AREA           67.28     123.08        0.00
LOCATION RD029002 AREA         -123.22      98.58        0.00
LOCATION RD030001 AREA         -313.52      74.11        0.00
LOCATION RD030002 AREA         -420.52      58.11        0.00
LOCATION RD031001 AREA         -500.98    -170.05        0.00
LOCATION RD031002 AREA         -394.48    -159.55        0.00
LOCATION RD032001 AREA         -288.18    -149.07        0.00
LOCATION RD033001 AREA         -111.11    -128.06        0.00
LOCATION RD033002 AREA           -8.11    -116.56        0.00
LOCATION RD034001 AREA           94.80    -105.07        0.00
LOCATION RD034002 AREA          247.30     -86.57        0.00
LOCATION RD035001 AREA          395.37     -69.74        0.00
LOCATION RD035002 AREA          486.37      -7.74        0.00
LOCATION RD036001 AREA         -519.08      53.24        0.00
LOCATION RD036002 AREA         -504.58     -62.76        0.00
LOCATION RD037001 AREA         -305.07      85.14        0.00
LOCATION RD037002 AREA         -291.07     -36.36        0.00
LOCATION TW001001 AREA         -800.07     442.16        0.00
LOCATION TW001002 AREA         -779.57     266.66        0.00
LOCATION TW001003 AREA         -759.07      91.16        0.00
LOCATION TW001004 AREA         -738.57     -84.34        0.00
LOCATION TW001005 AREA         -718.07    -259.84        0.00
LOCATION TW001006 AREA         -697.57    -435.34        0.00
LOCATION TW002001 AREA         -889.08     430.22        0.00
LOCATION TW002002 AREA         -865.74     241.06        0.00
LOCATION TW002003 AREA         -842.41      51.89        0.00
LOCATION TW002004 AREA         -819.08    -137.28        0.00
LOCATION TW002005 AREA         -795.74    -326.44        0.00
LOCATION TW002006 AREA         -772.41    -515.61        0.00
LOCATION TW003001 AREA        -2324.07     247.21        0.00
LOCATION TW003002 AREA        -2301.24      59.88        0.00
LOCATION TW003003 AREA        -2278.41    -127.46        0.00
LOCATION TW003004 AREA        -2255.57    -314.79        0.00
LOCATION TW003005 AREA        -2232.74    -502.12        0.00
LOCATION TW003006 AREA        -2209.91    -689.46        0.00
LOCATION TW004001 AREA          808.62   -1008.10        0.00
LOCATION TW004002 AREA          997.19    -981.81        0.00
LOCATION TW004003 AREA         1185.76    -955.52        0.00
LOCATION TW004004 AREA         1374.33    -929.24        0.00
LOCATION TW004005 AREA         1562.91    -902.95        0.00
LOCATION TW004006 AREA         1751.48    -876.67        0.00
LOCATION TW004007 AREA         1940.05    -850.38        0.00
LOCATION TW005001 AREA         -760.16    -696.07        0.00
LOCATION TW005002 AREA         -562.66    -673.07        0.00
LOCATION TW005003 AREA         -365.16    -650.07        0.00
LOCATION TW005004 AREA         -167.66    -627.07        0.00
LOCATION TW005005 AREA           29.84    -604.07        0.00
LOCATION TW005006 AREA          227.34    -581.07        0.00
LOCATION TW005007 AREA          424.84    -558.07        0.00
LOCATION TW005008 AREA          622.34    -535.07        0.00
LOCATION TW005009 AREA          819.84    -512.07        0.00
LOCATION TW005010 AREA         1017.34    -489.07        0.00
LOCATION TW005011 AREA         1214.84    -466.07        0.00
LOCATION TW005012 AREA         1412.34    -443.07        0.00
LOCATION TW005013 AREA         1609.84    -420.07        0.00
LOCATION TW005014 AREA         1807.34    -397.07        0.00
LOCATION TW006001 AREA        -2198.19    -868.07        0.00
LOCATION TW006002 AREA        -2018.44    -846.57        0.00
LOCATION TW006003 AREA        -1838.69    -825.07        0.00
```

Table L.2-1
AERMOD Input File for 2005 SAIP Diesel PM Run

```
LOCATION TW006004 AREA        -1658.94    -803.57        0.00
LOCATION TW006005 AREA        -1479.19    -782.07        0.00
LOCATION TW006006 AREA        -1299.44    -760.57        0.00
LOCATION TW006007 AREA        -1119.69    -739.07        0.00
LOCATION TW006008 AREA         -939.94    -717.57        0.00
LOCATION TW007001 AREA        -2916.89     203.96        0.00
LOCATION TW007002 AREA        -2722.89     221.29        0.00
LOCATION TW007003 AREA        -2528.89     238.63        0.00
LOCATION TW008001 AREA        -2335.27     255.92        0.00
LOCATION TW008002 AREA        -2144.77     280.29        0.00
LOCATION TW008003 AREA        -1954.27     304.67        0.00
LOCATION TW008004 AREA        -1763.77     329.04        0.00
LOCATION TW008005 AREA        -1573.27     353.42        0.00
LOCATION TW008006 AREA        -1382.77     377.79        0.00
LOCATION TW008007 AREA        -1192.27     402.17        0.00
LOCATION TW008008 AREA        -1001.77     426.54        0.00
LOCATION TW009001 AREA         -811.19     450.93        0.00
LOCATION TW009002 AREA         -632.39     472.33        0.00
LOCATION TW009003 AREA         -453.59     493.73        0.00
LOCATION TW009004 AREA         -274.79     515.13        0.00
LOCATION TW009005 AREA          -95.99     536.53        0.00
LOCATION TW010001 AREA          578.81    -545.07        0.00
LOCATION TW010002 AREA          757.06    -523.70        0.00
LOCATION TW010003 AREA          935.31    -502.32        0.00
LOCATION TW010004 AREA         1113.56    -480.95        0.00
LOCATION TW010005 AREA         1291.81    -459.57        0.00
LOCATION TW010006 AREA         1470.06    -438.20        0.00
LOCATION TW010007 AREA         1648.31    -416.82        0.00
LOCATION TW010008 AREA         1826.56    -395.45        0.00
LOCATION TW011001 AREA         -760.12    -696.06        0.00
LOCATION TW011002 AREA         -568.83    -674.49        0.00
LOCATION TW011003 AREA         -377.55    -652.92        0.00
LOCATION TW011004 AREA         -186.26    -631.35        0.00
LOCATION TW011005 AREA            5.02    -609.78        0.00
LOCATION TW011006 AREA          196.31    -588.21        0.00
LOCATION TW011007 AREA          387.59    -566.63        0.00
LOCATION TW012001 AREA         2120.05    -834.95        0.00
LOCATION TW012002 AREA         2103.05    -656.95        0.00
LOCATION QU25R001 AREA         2095.67    -487.99        0.00
LOCATION QU25R002 AREA         1920.67    -482.24        0.00
LOCATION QU25R003 AREA         1745.67    -476.49        0.00
LOCATION QU25R004 AREA         1570.67    -470.74        0.00
LOCATION RW07L001 AREA        -1563.19    -906.07        0.00
LOCATION RW07L002 AREA        -1513.76    -900.15        0.00
LOCATION RW07L003 AREA        -1464.32    -894.23        0.00
LOCATION RW07L004 AREA        -1414.89    -888.31        0.00
LOCATION RW07L005 AREA        -1365.46    -882.40        0.00
LOCATION RW07L006 AREA        -1316.03    -876.48        0.00
LOCATION RW07L007 AREA        -1266.59    -870.56        0.00
LOCATION RW07L008 AREA        -1217.16    -864.64        0.00
LOCATION RW07L009 AREA        -1167.73    -858.72        0.00
LOCATION RW07L010 AREA        -1118.30    -852.80        0.00
LOCATION RW07L011 AREA        -1068.86    -846.88        0.00
LOCATION RW07L012 AREA        -1019.43    -840.96        0.00
LOCATION RW07L013 AREA         -970.00    -835.04        0.00
LOCATION RW07L014 AREA         -920.57    -829.12        0.00
LOCATION RW07L015 AREA         -871.13    -823.21        0.00
LOCATION RW07L016 AREA         -821.70    -817.29        0.00
LOCATION RW07L017 AREA         -772.27    -811.37        0.00
LOCATION RW07L018 AREA         -722.84    -805.45        0.00
LOCATION RW07L019 AREA         -673.41    -799.53        0.00
LOCATION RW07L020 AREA         -623.97    -793.61        0.00
LOCATION RW07L021 AREA         -574.54    -787.69        0.00
LOCATION RW07L022 AREA         -525.11    -781.77        0.00
LOCATION RW07L023 AREA         -475.68    -775.85        0.00
LOCATION RW07L024 AREA         -426.24    -769.94        0.00
LOCATION RW07L025 AREA         -376.81    -764.02        0.00
LOCATION RW07L026 AREA         -327.38    -758.10        0.00
LOCATION RW07L027 AREA         -277.95    -752.18        0.00
LOCATION RW07L028 AREA         -228.51    -746.26        0.00
LOCATION RW07L029 AREA         -179.08    -740.34        0.00
```

Table L.2-1
AERMOD Input File for 2005 SAIP Diesel PM Run

```
LOCATION RW07L030 AREA        -129.65    -734.42        0.00
LOCATION RW07L031 AREA         -80.22    -728.50        0.00
LOCATION RW07L032 AREA         -30.78    -722.58        0.00
LOCATION RW07L033 AREA          18.65    -716.67        0.00
LOCATION RW07L034 AREA          68.08    -710.75        0.00
LOCATION RW07L035 AREA         117.51    -704.83        0.00
LOCATION RW07L036 AREA         166.95    -698.91        0.00
LOCATION RW07L037 AREA         216.38    -692.99        0.00
LOCATION RW07L038 AREA         265.81    -687.07        0.00
LOCATION RW07L039 AREA         315.24    -681.15        0.00
LOCATION RW07L040 AREA         364.68    -675.23        0.00
LOCATION RW07L041 AREA         414.11    -669.31        0.00
LOCATION RW07L042 AREA         463.54    -663.40        0.00
LOCATION RW07L043 AREA         512.97    -657.48        0.00
LOCATION RW07L044 AREA         562.41    -651.56        0.00
LOCATION RW07L045 AREA         611.84    -645.64        0.00
LOCATION RW07L046 AREA         661.27    -639.72        0.00
LOCATION RW07L047 AREA         710.70    -633.80        0.00
LOCATION RW07L048 AREA         760.14    -627.88        0.00
LOCATION RW07L049 AREA         809.57    -621.96        0.00
LOCATION RW07L050 AREA         859.00    -616.04        0.00
LOCATION RW07L051 AREA         908.43    -610.12        0.00
LOCATION RW07L052 AREA         957.87    -604.21        0.00
LOCATION RW07L053 AREA        1007.30    -598.29        0.00
LOCATION RW07L054 AREA        1056.73    -592.37        0.00
LOCATION RW07L055 AREA        1106.16    -586.45        0.00
LOCATION RW07L056 AREA        1155.59    -580.53        0.00
LOCATION RW07L057 AREA        1205.03    -574.61        0.00
LOCATION RW07L058 AREA        1254.46    -568.69        0.00
LOCATION RW07L059 AREA        1303.89    -562.77        0.00
LOCATION RW07L060 AREA        1353.32    -556.85        0.00
LOCATION RW07L061 AREA        1402.76    -550.94        0.00
LOCATION RW07L062 AREA        1452.19    -545.02        0.00
LOCATION RW07L063 AREA        1501.62    -539.10        0.00
LOCATION RW07L064 AREA        1551.05    -533.18        0.00
LOCATION RW07L065 AREA        1600.49    -527.26        0.00
LOCATION RW07L066 AREA        1649.92    -521.34        0.00
LOCATION RW07L067 AREA        1699.35    -515.42        0.00
LOCATION RW07L068 AREA        1748.78    -509.50        0.00
LOCATION RW07L069 AREA        1798.22    -503.58        0.00
LOCATION RW07L070 AREA        1847.65    -497.67        0.00
LOCATION RW07L071 AREA        1897.08    -491.75        0.00
LOCATION RW07L072 AREA        1946.51    -485.83        0.00
LOCATION RW07L073 AREA        1995.95    -479.91        0.00
LOCATION RW07L074 AREA        2045.38    -473.99        0.00
LOCATION DS25R002 AREA        1730.72    -531.81        0.00
LOCATION DS25R003 AREA        1700.03    -535.48        0.00
LOCATION DS25R004 AREA        1462.80    -563.89        0.00
LOCATION DS25R005 AREA        1298.74    -583.53        0.00
LOCATION DS25R007 AREA         867.27    -635.20        0.00
LOCATION DS25R008 AREA         707.12    -654.37        0.00
LOCATION DS25R009 AREA         508.54    -678.15        0.00
LOCATION DS25R010 AREA         309.96    -701.93        0.00
LOCATION DS25R011 AREA         111.37    -725.71        0.00
LOCATION DS25R012 AREA        -263.18    -770.55        0.00
LOCATION DS25R013 AREA        -285.79    -773.26        0.00
LOCATION DS25R014 AREA        -520.66    -801.38        0.00
LOCATION DS25R015 AREA        -714.53    -824.60        0.00
LOCATION DS25R016 AREA        -881.53    -844.59        0.00
LOCATION DS25R039 AREA        1684.68    -537.32        0.00
LOCATION DS25R040 AREA        1501.44    -559.26        0.00
LOCATION DS25R041 AREA        1302.86    -583.04        0.00
LOCATION DS25R042 AREA        1104.28    -606.82        0.00
LOCATION DS25R043 AREA         825.26    -640.23        0.00
LOCATION DS25R044 AREA         707.12    -654.37        0.00
LOCATION DS25R045 AREA         508.54    -678.15        0.00
LOCATION DS25R046 AREA         309.96    -701.93        0.00
LOCATION DS25R047 AREA         111.37    -725.71        0.00
LOCATION DS25R048 AREA         -87.21    -749.48        0.00
LOCATION DS25R049 AREA        -330.54    -778.62        0.00
LOCATION DS25R050 AREA        -484.37    -797.04        0.00
```

Table L.2-1
AERMOD Input File for 2005 SAIP Diesel PM Run

```
LOCATION DS25R051 AREA        -682.95    -820.82        0.00
LOCATION DS25R052 AREA        -881.53    -844.59        0.00
LOCATION DS25R053 AREA       -1080.12    -868.37        0.00
LOCATION DS25R075 AREA        1590.98    -548.54        0.00
LOCATION DS25R076 AREA        1501.44    -559.26        0.00
LOCATION DS25R077 AREA        1302.86    -583.04        0.00
LOCATION DS25R078 AREA        1057.49    -612.42        0.00
LOCATION DS25R079 AREA         905.70    -630.60        0.00
LOCATION DS25R080 AREA         707.12    -654.37        0.00
LOCATION DS25R081 AREA         508.54    -678.15        0.00
LOCATION DS25R082 AREA         309.96    -701.93        0.00
LOCATION DS25R083 AREA         111.37    -725.71        0.00
LOCATION DS25R084 AREA         -87.21    -749.48        0.00
LOCATION DS25R085 AREA        -285.79    -773.26        0.00
LOCATION DS25R086 AREA        -498.94    -798.78        0.00
LOCATION DS25R087 AREA        -758.51    -829.86        0.00
LOCATION DS25R088 AREA        -881.53    -844.59        0.00
LOCATION DS25R089 AREA       -1080.12    -868.37        0.00
LOCATION DS25R090 AREA       -1278.70    -892.15        0.00
LOCATION DS25R112 AREA        1497.29    -559.76        0.00
LOCATION DS25R113 AREA        1302.86    -583.04        0.00
LOCATION DS25R114 AREA        1104.28    -606.82        0.00
LOCATION DS25R115 AREA         885.16    -633.05        0.00
LOCATION DS25R116 AREA         616.77    -665.19        0.00
LOCATION DS25R117 AREA         470.76    -682.67        0.00
LOCATION DS25R118 AREA         309.96    -701.93        0.00
LOCATION DS25R119 AREA         111.37    -725.71        0.00
LOCATION DS25R120 AREA         -87.21    -749.48        0.00
LOCATION DS25R121 AREA        -285.79    -773.26        0.00
LOCATION DS25R122 AREA        -667.35    -818.95        0.00
LOCATION DS25R123 AREA        -682.95    -820.82        0.00
LOCATION DS25R124 AREA        -916.36    -848.76        0.00
LOCATION DS25R125 AREA       -1080.12    -868.37        0.00
LOCATION DS25R126 AREA       -1278.70    -892.15        0.00
LOCATION DS25R127 AREA       -1477.28    -915.93        0.00
LOCATION DS25R148 AREA        1403.59    -570.98        0.00
LOCATION DS25R149 AREA        1277.44    -586.08        0.00
LOCATION DS25R150 AREA        1104.28    -606.82        0.00
LOCATION DS25R151 AREA         905.70    -630.60        0.00
LOCATION DS25R152 AREA         707.12    -654.37        0.00
LOCATION DS25R153 AREA         508.54    -678.15        0.00
LOCATION DS25R154 AREA         309.96    -701.93        0.00
LOCATION DS25R155 AREA         111.37    -725.71        0.00
LOCATION DS25R156 AREA         -87.21    -749.48        0.00
LOCATION DS25R157 AREA        -285.79    -773.26        0.00
LOCATION DS25R158 AREA        -484.37    -797.04        0.00
LOCATION DS25R159 AREA        -835.75    -839.11        0.00
LOCATION DS25R160 AREA        -881.53    -844.59        0.00
LOCATION DS25R161 AREA       -1080.12    -868.37        0.00
LOCATION DS25R162 AREA       -1278.70    -892.15        0.00
LOCATION DS25R163 AREA       -1477.28    -915.93        0.00
LOCATION DS25R164 AREA       -1675.86    -939.70        0.00
LOCATION DS25R184 AREA        1309.89    -582.20        0.00
LOCATION DS25R185 AREA        1302.86    -583.04        0.00
LOCATION DS25R186 AREA        1104.28    -606.82        0.00
LOCATION DS25R187 AREA         886.37    -632.91        0.00
LOCATION DS25R188 AREA         707.12    -654.37        0.00
LOCATION DS25R189 AREA         508.54    -678.15        0.00
LOCATION DS25R190 AREA         309.96    -701.93        0.00
LOCATION DS25R191 AREA         111.37    -725.71        0.00
LOCATION DS25R192 AREA        -113.84    -752.67        0.00
LOCATION DS25R193 AREA        -302.07    -775.21        0.00
LOCATION DS25R194 AREA        -484.37    -797.04        0.00
LOCATION DS25R195 AREA        -682.95    -820.82        0.00
LOCATION DS25R196 AREA       -1004.16    -859.28        0.00
LOCATION DS25R197 AREA       -1080.12    -868.37        0.00
LOCATION DS25R198 AREA       -1278.70    -892.15        0.00
LOCATION DS25R199 AREA       -1477.28    -915.93        0.00
LOCATION DS25R200 AREA       -1675.86    -939.70        0.00
LOCATION DS25R201 AREA       -1874.44    -963.48        0.00
LOCATION DS25R221 AREA        1216.20    -593.42        0.00
```

Table L.2-1
AERMOD Input File for 2005 SAIP Diesel PM Run

```
LOCATION DS25R222 AREA        1066.05    -611.40        0.00
LOCATION DS25R223 AREA         905.70    -630.60        0.00
LOCATION DS25R224 AREA         707.12    -654.37        0.00
LOCATION DS25R225 AREA         368.19    -694.95        0.00
LOCATION DS25R226 AREA         309.96    -701.93        0.00
LOCATION DS25R227 AREA         111.37    -725.71        0.00
LOCATION DS25R228 AREA         -87.21    -749.48        0.00
LOCATION DS25R229 AREA        -285.79    -773.26        0.00
LOCATION DS25R230 AREA        -484.37    -797.04        0.00
LOCATION DS25R231 AREA        -682.95    -820.82        0.00
LOCATION DS25R232 AREA        -881.53    -844.59        0.00
LOCATION DS25R233 AREA       -1172.57    -879.44        0.00
LOCATION DS25R234 AREA       -1278.70    -892.15        0.00
LOCATION DS25R235 AREA       -1477.28    -915.93        0.00
LOCATION DS25R236 AREA       -1675.86    -939.70        0.00
LOCATION DS25R237 AREA       -1874.44    -963.48        0.00
LOCATION DS25R238 AREA       -2073.02    -987.26        0.00
LOCATION DS25R257 AREA        1122.50    -604.64        0.00
LOCATION DS25R258 AREA        1104.28    -606.82        0.00
LOCATION DS25R259 AREA         905.70    -630.60        0.00
LOCATION DS25R260 AREA         656.76    -660.40        0.00
LOCATION DS25R261 AREA         508.54    -678.15        0.00
LOCATION DS25R262 AREA         276.29    -705.96        0.00
LOCATION DS25R263 AREA         111.37    -725.71        0.00
LOCATION DS25R264 AREA         -87.21    -749.48        0.00
LOCATION DS25R265 AREA        -285.79    -773.26        0.00
LOCATION DS25R266 AREA        -556.60    -805.69        0.00
LOCATION DS25R267 AREA        -682.95    -820.82        0.00
LOCATION DS25R268 AREA        -956.22    -853.54        0.00
LOCATION DS25R269 AREA       -1080.12    -868.37        0.00
LOCATION DS25R270 AREA       -1340.97    -899.61        0.00
LOCATION DS25R271 AREA       -1477.28    -915.93        0.00
LOCATION DS25R272 AREA       -1675.86    -939.70        0.00
LOCATION DS25R273 AREA       -1874.44    -963.48        0.00
LOCATION DS25R274 AREA       -2073.02    -987.26        0.00
LOCATION DS25R294 AREA        1028.80    -615.85        0.00
LOCATION DS25R295 AREA         885.28    -633.04        0.00
LOCATION DS25R296 AREA         707.12    -654.37        0.00
LOCATION DS25R297 AREA         508.54    -678.15        0.00
LOCATION DS25R298 AREA         309.96    -701.93        0.00
LOCATION DS25R299 AREA         111.37    -725.71        0.00
LOCATION DS25R300 AREA         -87.21    -749.48        0.00
LOCATION DS25R301 AREA        -285.79    -773.26        0.00
LOCATION DS25R302 AREA        -484.37    -797.04        0.00
LOCATION DS25R303 AREA        -682.95    -820.82        0.00
LOCATION DS25R304 AREA        -881.53    -844.59        0.00
LOCATION DS25R305 AREA       -1116.53    -872.73        0.00
LOCATION DS25R307 AREA       -1509.38    -919.77        0.00
LOCATION DS25R308 AREA       -1675.86    -939.70        0.00
LOCATION DS25R309 AREA       -1874.44    -963.48        0.00
LOCATION DS25R310 AREA       -2073.02    -987.26        0.00
LOCATION DS25R311 AREA       -2271.60   -1011.04        0.00
LOCATION DS25R330 AREA         935.11    -627.07        0.00
LOCATION DS25R331 AREA         905.70    -630.60        0.00
LOCATION DS25R332 AREA         707.12    -654.37        0.00
LOCATION DS25R333 AREA         508.54    -678.15        0.00
LOCATION DS25R334 AREA         297.18    -703.46        0.00
LOCATION DS25R335 AREA         106.05    -726.34        0.00
LOCATION DS25R336 AREA         -87.21    -749.48        0.00
LOCATION DS25R337 AREA        -285.79    -773.26        0.00
LOCATION DS25R338 AREA        -484.37    -797.04        0.00
LOCATION DS25R339 AREA        -799.61    -834.78        0.00
LOCATION DS25R340 AREA        -881.53    -844.59        0.00
LOCATION DS25R341 AREA       -1080.12    -868.37        0.00
LOCATION DS25R342 AREA       -1278.70    -892.15        0.00
LOCATION DS25R344 AREA       -1677.78    -939.93        0.00
LOCATION DS25R345 AREA       -1874.44    -963.48        0.00
LOCATION DS25R346 AREA       -2073.02    -987.26        0.00
LOCATION DS25R347 AREA       -2271.60   -1011.04        0.00
LOCATION DS25R348 AREA       -2470.19   -1034.82        0.00
LOCATION DS25R367 AREA         841.41    -638.29        0.00
```

Table L.2-1
AERMOD Input File for 2005 SAIP Diesel PM Run

```
LOCATION DS25R368 AREA         704.50    -654.69       0.00
LOCATION DS25R369 AREA         477.54    -681.86       0.00
LOCATION DS25R370 AREA         309.96    -701.93       0.00
LOCATION DS25R371 AREA         111.37    -725.71       0.00
LOCATION DS25R372 AREA        -127.04    -754.25       0.00
LOCATION DS25R373 AREA        -285.79    -773.26       0.00
LOCATION DS25R374 AREA        -484.37    -797.04       0.00
LOCATION DS25R375 AREA        -682.95    -820.82       0.00
LOCATION DS25R376 AREA        -911.95    -848.24       0.00
LOCATION DS25R377 AREA       -1080.12    -868.37       0.00
LOCATION DS25R378 AREA       -1437.15    -911.12       0.00
LOCATION DS25R379 AREA       -1477.28    -915.93       0.00
LOCATION DS25R380 AREA       -1846.19    -960.10       0.00
LOCATION DS25R381 AREA       -1874.44    -963.48       0.00
LOCATION DS25R382 AREA       -2073.02    -987.26       0.00
LOCATION DS25R383 AREA       -2271.60   -1011.04       0.00
LOCATION DS25R384 AREA       -2470.19   -1034.82       0.00
LOCATION DS25R385 AREA       -2668.77   -1058.59       0.00
LOCATION DS25R403 AREA         747.71    -649.51       0.00
LOCATION DS25R404 AREA         707.12    -654.37       0.00
LOCATION DS25R405 AREA         508.54    -678.15       0.00
LOCATION DS25R406 AREA         309.96    -701.93       0.00
LOCATION DS25R407 AREA         111.37    -725.71       0.00
LOCATION DS25R408 AREA         -87.21    -749.48       0.00
LOCATION DS25R409 AREA        -285.79    -773.26       0.00
LOCATION DS25R410 AREA        -484.37    -797.04       0.00
LOCATION DS25R411 AREA        -682.95    -820.82       0.00
LOCATION DS25R412 AREA        -881.53    -844.59       0.00
LOCATION DS25R413 AREA       -1080.12    -868.37       0.00
LOCATION DS25R414 AREA       -1278.70    -892.15       0.00
LOCATION DS25R415 AREA       -1597.46    -930.32       0.00
LOCATION DS25R416 AREA       -1675.86    -939.70       0.00
LOCATION DS25R417 AREA       -2014.53    -980.26       0.00
LOCATION DS25R418 AREA       -2073.02    -987.26       0.00
LOCATION DS25R419 AREA       -2271.60   -1011.04       0.00
LOCATION DS25R420 AREA       -2470.19   -1034.82       0.00
LOCATION DS25R421 AREA       -2668.77   -1058.59       0.00
LOCATION DS25R422 AREA       -2867.35   -1082.37       0.00
LOCATION DS25R440 AREA         654.02    -660.73       0.00
LOCATION DS25R441 AREA         508.54    -678.15       0.00
LOCATION DS25R442 AREA         210.90    -713.79       0.00
LOCATION DS25R443 AREA         111.37    -725.71       0.00
LOCATION DS25R444 AREA         -99.06    -750.90       0.00
LOCATION DS25R445 AREA        -340.02    -779.75       0.00
LOCATION DS25R446 AREA        -492.17    -797.97       0.00
LOCATION DS25R447 AREA        -682.95    -820.82       0.00
LOCATION DS25R448 AREA        -881.53    -844.59       0.00
LOCATION DS25R449 AREA       -1136.65    -875.14       0.00
LOCATION DS25R450 AREA       -1278.70    -892.15       0.00
LOCATION DS25R451 AREA       -1477.28    -915.93       0.00
LOCATION DS25R452 AREA       -1757.77    -949.51       0.00
LOCATION DS25R453 AREA       -1874.44    -963.48       0.00
LOCATION DS25R454 AREA       -2151.80    -996.69       0.00
LOCATION DS25R455 AREA       -2271.60   -1011.04       0.00
LOCATION DS25R456 AREA       -2470.19   -1034.82       0.00
LOCATION DS25R457 AREA       -2668.77   -1058.59       0.00
LOCATION DS25R458 AREA       -2867.35   -1082.37       0.00
LOCATION DS25R459 AREA       -3065.93   -1106.15       0.00
LOCATION DS25R476 AREA         560.32    -671.95       0.00
LOCATION DS25R477 AREA         508.54    -678.15       0.00
LOCATION DS25R478 AREA         309.96    -701.93       0.00
LOCATION DS25R479 AREA          77.58    -729.75       0.00
LOCATION DS25R480 AREA         -87.21    -749.48       0.00
LOCATION DS25R481 AREA        -285.79    -773.26       0.00
LOCATION DS25R482 AREA        -484.37    -797.04       0.00
LOCATION DS25R483 AREA        -682.95    -820.82       0.00
LOCATION DS25R484 AREA        -881.53    -844.59       0.00
LOCATION DS25R485 AREA       -1080.12    -868.37       0.00
LOCATION DS25R486 AREA       -1278.70    -892.15       0.00
LOCATION DS25R487 AREA       -1477.28    -915.93       0.00
LOCATION DS25R488 AREA       -1675.86    -939.70       0.00
```

Table L.2-1
AERMOD Input File for 2005 SAIP Diesel PM Run

```
LOCATION DS25R489 AREA       -1918.08    -968.71        0.00
LOCATION DS25R490 AREA       -2073.02    -987.26        0.00
LOCATION DS25R491 AREA       -2289.08   -1013.13        0.00
LOCATION DS25R492 AREA       -2470.19   -1034.82        0.00
LOCATION DS25R493 AREA       -2668.77   -1058.59        0.00
LOCATION DS25R494 AREA       -2867.35   -1082.37        0.00
LOCATION DS25R495 AREA       -3065.93   -1106.15        0.00
LOCATION DS25R496 AREA       -3264.51   -1129.93        0.00
LOCATION DS25R513 AREA         466.62    -683.17        0.00
LOCATION DS25R514 AREA         309.96    -701.93        0.00
LOCATION DS25R515 AREA         -55.73    -745.71        0.00
LOCATION DS25R516 AREA         -87.21    -749.48        0.00
LOCATION DS25R517 AREA        -285.79    -773.26        0.00
LOCATION DS25R518 AREA        -484.37    -797.04        0.00
LOCATION DS25R519 AREA        -682.95    -820.82        0.00
LOCATION DS25R520 AREA        -881.53    -844.59        0.00
LOCATION DS25R521 AREA       -1080.12    -868.37        0.00
LOCATION DS25R522 AREA       -1361.34    -902.05        0.00
LOCATION DS25R523 AREA       -1477.28    -915.93        0.00
LOCATION DS25R524 AREA       -1675.86    -939.70        0.00
LOCATION DS25R526 AREA       -2078.38    -987.90        0.00
LOCATION DS25R527 AREA       -2271.60   -1011.04        0.00
LOCATION DS25R528 AREA       -2470.19   -1034.82        0.00
LOCATION DS25R529 AREA       -2668.77   -1058.59        0.00
LOCATION DS25R530 AREA       -2867.35   -1082.37        0.00
LOCATION DS25R531 AREA       -3065.93   -1106.15        0.00
LOCATION DS25R532 AREA       -3264.51   -1129.93        0.00
LOCATION DS25R533 AREA       -3463.09   -1153.70        0.00
LOCATION AS25R001 AREA        2248.76    -469.78        0.00
LOCATION AS25R037 AREA        2295.77    -464.15        0.00
LOCATION AS25R038 AREA        2494.35    -440.37        0.00
LOCATION AS25R039 AREA        2630.06    -424.12        0.00
LOCATION AS25R075 AREA        2692.93    -416.60        0.00
LOCATION AS25R076 AREA        2891.51    -392.82        0.00
LOCATION AS25R077 AREA        3009.14    -378.73        0.00
LOCATION AS25R113 AREA        3090.10    -369.04        0.00
LOCATION AS25R114 AREA        3288.68    -345.26        0.00
LOCATION AS25R115 AREA        3387.86    -333.39        0.00
LOCATION AS25R151 AREA        3487.26    -321.49        0.00
LOCATION AS25R152 AREA        3685.84    -297.71        0.00
LOCATION AS25R153 AREA        3766.57    -288.04        0.00
LOCATION AS25R188 AREA        3685.84    -297.71        0.00
LOCATION AS25R189 AREA        3884.42    -273.93        0.00
LOCATION AS25R190 AREA        4083.00    -250.15        0.00
LOCATION AS25R191 AREA        4145.28    -242.70        0.00
LOCATION AS25R226 AREA        4083.00    -250.15        0.00
LOCATION AS25R227 AREA        4281.59    -226.37        0.00
LOCATION AS25R228 AREA        4480.17    -202.60        0.00
LOCATION AS25R229 AREA        4524.00    -197.35        0.00
LOCATION AS25R264 AREA        4480.17    -202.60        0.00
LOCATION AS25R265 AREA        4678.75    -178.82        0.00
LOCATION AS25R266 AREA        4877.33    -155.04        0.00
LOCATION AS25R267 AREA        4902.71    -152.00        0.00
LOCATION AS25R302 AREA        4877.33    -155.04        0.00
LOCATION AS25R303 AREA        5075.91    -131.26        0.00
LOCATION AS25R304 AREA        5274.49    -107.49        0.00
LOCATION AS25R305 AREA        5281.43    -106.66        0.00
LOCATION AS25R340 AREA        5274.49    -107.49        0.00
LOCATION AS25R341 AREA        5473.07     -83.71        0.00
LOCATION AS25R342 AREA        5660.14     -61.31        0.00
LOCATION AS25R377 AREA        5473.07     -83.71        0.00
LOCATION AS25R378 AREA        5671.66     -59.93        0.00
LOCATION AS25R379 AREA        5870.24     -36.15        0.00
LOCATION AS25R380 AREA        6038.85     -15.96        0.00
LOCATION AS25R415 AREA        5870.24     -36.15        0.00
LOCATION AS25R416 AREA        6068.82     -12.38        0.00
LOCATION AS25R417 AREA        6267.40      11.40        0.00
LOCATION AS25R418 AREA        6417.57      29.38        0.00
LOCATION AS25R453 AREA        6267.40      11.40        0.00
LOCATION AS25R454 AREA        6465.98      35.18        0.00
LOCATION AS25R455 AREA        6664.56      58.96        0.00
```

Table L.2-1
AERMOD Input File for 2005 SAIP Diesel PM Run

```
LOCATION AS25R456 AREA        6796.28      74.73        0.00
LOCATION AS25R491 AREA        6664.56      58.96        0.00
LOCATION AS25R492 AREA        6863.15      82.73        0.00
LOCATION AS25R493 AREA        7061.73     106.51        0.00
LOCATION AS25R494 AREA        7175.00     120.08        0.00
LOCATION AS25R528 AREA        6863.15      82.73        0.00
LOCATION AS25R529 AREA        7061.73     106.51        0.00
LOCATION AS25R530 AREA        7260.31     130.29        0.00
LOCATION AS25R531 AREA        7458.89     154.07        0.00
LOCATION AS25R532 AREA        7644.60     176.30        0.00
LOCATION QU24R001 AREA          60.83     882.82        0.00
LOCATION QU24R002 AREA          83.33     761.32        0.00
LOCATION RW06L001 AREA       -2650.17     571.93        0.00
LOCATION RW06L002 AREA       -2601.08     577.73        0.00
LOCATION RW06L003 AREA       -2551.99     583.53        0.00
LOCATION RW06L004 AREA       -2502.90     589.33        0.00
LOCATION RW06L005 AREA       -2453.81     595.13        0.00
LOCATION RW06L006 AREA       -2404.72     600.93        0.00
LOCATION RW06L007 AREA       -2355.63     606.73        0.00
LOCATION RW06L008 AREA       -2306.54     612.53        0.00
LOCATION RW06L009 AREA       -2257.45     618.33        0.00
LOCATION RW06L010 AREA       -2208.36     624.13        0.00
LOCATION RW06L011 AREA       -2159.26     629.93        0.00
LOCATION RW06L012 AREA       -2110.17     635.73        0.00
LOCATION RW06L013 AREA       -2061.08     641.53        0.00
LOCATION RW06L014 AREA       -2011.99     647.33        0.00
LOCATION RW06L015 AREA       -1962.90     653.13        0.00
LOCATION RW06L016 AREA       -1913.81     658.93        0.00
LOCATION RW06L017 AREA       -1864.72     664.73        0.00
LOCATION RW06L018 AREA       -1815.63     670.53        0.00
LOCATION RW06L019 AREA       -1766.54     676.33        0.00
LOCATION RW06L020 AREA       -1717.45     682.13        0.00
LOCATION RW06L021 AREA       -1668.36     687.93        0.00
LOCATION RW06L022 AREA       -1619.26     693.73        0.00
LOCATION RW06L023 AREA       -1570.17     699.53        0.00
LOCATION RW06L024 AREA       -1521.08     705.33        0.00
LOCATION RW06L025 AREA       -1471.99     711.13        0.00
LOCATION RW06L026 AREA       -1422.90     716.93        0.00
LOCATION RW06L027 AREA       -1373.81     722.73        0.00
LOCATION RW06L028 AREA       -1324.72     728.53        0.00
LOCATION RW06L029 AREA       -1275.63     734.33        0.00
LOCATION RW06L030 AREA       -1226.54     740.13        0.00
LOCATION RW06L031 AREA       -1177.45     745.93        0.00
LOCATION RW06L032 AREA       -1128.36     751.73        0.00
LOCATION RW06L033 AREA       -1079.26     757.53        0.00
LOCATION RW06L034 AREA       -1030.17     763.33        0.00
LOCATION RW06L035 AREA        -981.08     769.13        0.00
LOCATION RW06L036 AREA        -931.99     774.93        0.00
LOCATION RW06L037 AREA        -882.90     780.73        0.00
LOCATION RW06L038 AREA        -833.81     786.53        0.00
LOCATION RW06L039 AREA        -784.72     792.33        0.00
LOCATION RW06L040 AREA        -735.63     798.13        0.00
LOCATION RW06L041 AREA        -686.54     803.93        0.00
LOCATION RW06L042 AREA        -637.45     809.73        0.00
LOCATION RW06L043 AREA        -588.36     815.53        0.00
LOCATION RW06L044 AREA        -539.26     821.33        0.00
LOCATION RW06L045 AREA        -490.17     827.13        0.00
LOCATION RW06L046 AREA        -441.08     832.93        0.00
LOCATION RW06L047 AREA        -391.99     838.73        0.00
LOCATION RW06L048 AREA        -342.90     844.53        0.00
LOCATION RW06L049 AREA        -293.81     850.33        0.00
LOCATION RW06L050 AREA        -244.72     856.13        0.00
LOCATION RW06L051 AREA        -195.63     861.93        0.00
LOCATION RW06L052 AREA        -146.54     867.73        0.00
LOCATION RW06L053 AREA         -97.45     873.53        0.00
LOCATION RW06L054 AREA         -48.36     879.33        0.00
LOCATION RW06L055 AREA           0.74     885.13        0.00
LOCATION DS24R002 AREA        -314.36     827.76        0.00
LOCATION DS24R003 AREA        -345.06     824.14        0.00
LOCATION DS24R004 AREA        -582.34     796.10        0.00
LOCATION DS24R005 AREA        -746.43     776.72        0.00
```

Table L.2-1
AERMOD Input File for 2005 SAIP Diesel PM Run

```
LOCATION DS24R008 AREA      -1363.95     703.76       0.00
LOCATION DS24R009 AREA      -1536.78     683.34       0.00
LOCATION DS24R010 AREA      -1735.39     659.87       0.00
LOCATION DS24R011 AREA      -1934.01     636.40       0.00
LOCATION DS24R015 AREA      -2760.07     538.81       0.00
LOCATION DS24R016 AREA      -2927.10     519.07       0.00
LOCATION DS24R039 AREA       -360.41     822.32       0.00
LOCATION DS24R040 AREA       -543.68     800.67       0.00
LOCATION DS24R041 AREA       -742.30     777.20       0.00
LOCATION DS24R042 AREA       -940.92     753.74       0.00
LOCATION DS24R044 AREA      -1407.12     698.66       0.00
LOCATION DS24R045 AREA      -1536.78     683.34       0.00
LOCATION DS24R046 AREA      -1735.39     659.87       0.00
LOCATION DS24R047 AREA      -1934.01     636.40       0.00
LOCATION DS24R048 AREA      -2132.63     612.94       0.00
LOCATION DS24R051 AREA      -2825.47     531.08       0.00
LOCATION DS24R052 AREA      -2927.10     519.07       0.00
LOCATION DS24R075 AREA       -454.13     811.25       0.00
LOCATION DS24R076 AREA       -543.68     800.67       0.00
LOCATION DS24R077 AREA       -742.30     777.20       0.00
LOCATION DS24R078 AREA       -987.72     748.21       0.00
LOCATION DS24R079 AREA      -1139.54     730.27       0.00
LOCATION DS24R080 AREA      -1515.02     685.91       0.00
LOCATION DS24R081 AREA      -1536.78     683.34       0.00
LOCATION DS24R082 AREA      -1735.39     659.87       0.00
LOCATION DS24R083 AREA      -1934.01     636.40       0.00
LOCATION DS24R084 AREA      -2132.63     612.94       0.00
LOCATION DS24R088 AREA      -2988.98     511.76       0.00
LOCATION DS24R089 AREA      -3125.72     495.61       0.00
LOCATION DS24R112 AREA       -547.84     800.18       0.00
LOCATION DS24R113 AREA       -742.30     777.20       0.00
LOCATION DS24R114 AREA       -940.92     753.74       0.00
LOCATION DS24R115 AREA      -1160.08     727.84       0.00
LOCATION DS24R117 AREA      -1622.93     673.16       0.00
LOCATION DS24R118 AREA      -1735.39     659.87       0.00
LOCATION DS24R119 AREA      -1934.01     636.40       0.00
LOCATION DS24R120 AREA      -2132.63     612.94       0.00
LOCATION DS24R121 AREA      -2331.25     589.47       0.00
LOCATION DS24R125 AREA      -3152.49     492.44       0.00
LOCATION DS24R126 AREA      -3324.34     472.14       0.00
LOCATION DS24R148 AREA       -641.55     789.11       0.00
LOCATION DS24R149 AREA       -767.72     774.20       0.00
LOCATION DS24R150 AREA       -940.92     753.74       0.00
LOCATION DS24R151 AREA      -1139.54     730.27       0.00
LOCATION DS24R152 AREA      -1338.16     706.80       0.00
LOCATION DS24R153 AREA      -1730.83     660.41       0.00
LOCATION DS24R154 AREA      -1735.39     659.87       0.00
LOCATION DS24R155 AREA      -1934.01     636.40       0.00
LOCATION DS24R156 AREA      -2132.63     612.94       0.00
LOCATION DS24R157 AREA      -2331.25     589.47       0.00
LOCATION DS24R158 AREA      -2529.87     566.01       0.00
LOCATION DS24R161 AREA      -3316.00     473.13       0.00
LOCATION DS24R162 AREA      -3324.34     472.14       0.00
LOCATION DS24R163 AREA      -3522.96     448.67       0.00
LOCATION DS24R184 AREA       -735.27     778.03       0.00
LOCATION DS24R185 AREA       -742.30     777.20       0.00
LOCATION DS24R186 AREA       -940.92     753.74       0.00
LOCATION DS24R187 AREA      -1158.87     727.99       0.00
LOCATION DS24R188 AREA      -1338.16     706.80       0.00
LOCATION DS24R189 AREA      -1536.78     683.34       0.00
LOCATION DS24R190 AREA      -1838.74     647.66       0.00
LOCATION DS24R191 AREA      -1934.01     636.40       0.00
LOCATION DS24R192 AREA      -2159.26     609.79       0.00
LOCATION DS24R193 AREA      -2347.53     587.55       0.00
LOCATION DS24R194 AREA      -2554.36     563.11       0.00
LOCATION DS24R198 AREA      -3479.50     453.81       0.00
LOCATION DS24R199 AREA      -3522.96     448.67       0.00
LOCATION DS24R200 AREA      -3721.58     425.21       0.00
LOCATION DS24R221 AREA       -828.98     766.96       0.00
LOCATION DS24R222 AREA       -979.16     749.22       0.00
LOCATION DS24R223 AREA      -1139.54     730.27       0.00
```

Table L.2-1
AERMOD Input File for 2005 SAIP Diesel PM Run

```
LOCATION DS24R224 AREA       -1338.16     706.80       0.00
LOCATION DS24R225 AREA       -1677.14     666.75       0.00
LOCATION DS24R226 AREA       -1735.39     659.87       0.00
LOCATION DS24R227 AREA       -1946.64     634.91       0.00
LOCATION DS24R228 AREA       -2132.63     612.94       0.00
LOCATION DS24R229 AREA       -2331.25     589.47       0.00
LOCATION DS24R230 AREA       -2529.87     566.01       0.00
LOCATION DS24R231 AREA       -2728.49     542.54       0.00
LOCATION DS24R235 AREA       -3643.01     434.49       0.00
LOCATION DS24R236 AREA       -3721.58     425.21       0.00
LOCATION DS24R237 AREA       -3920.20     401.74       0.00
LOCATION DS24R257 AREA        -922.70     755.89       0.00
LOCATION DS24R258 AREA        -940.92     753.74       0.00
LOCATION DS24R259 AREA       -1139.54     730.27       0.00
LOCATION DS24R260 AREA       -1388.52     700.85       0.00
LOCATION DS24R261 AREA       -1536.78     683.34       0.00
LOCATION DS24R262 AREA       -1849.50     646.39       0.00
LOCATION DS24R263 AREA       -1934.01     636.40       0.00
LOCATION DS24R264 AREA       -2132.63     612.94       0.00
LOCATION DS24R265 AREA       -2331.25     589.47       0.00
LOCATION DS24R266 AREA       -2613.99     556.07       0.00
LOCATION DS24R267 AREA       -2728.49     542.54       0.00
LOCATION DS24R272 AREA       -3806.52     415.17       0.00
LOCATION DS24R273 AREA       -3920.20     401.74       0.00
LOCATION DS24R274 AREA       -4118.82     378.27       0.00
LOCATION DS24R294 AREA       -1016.41     744.82       0.00
LOCATION DS24R295 AREA       -1159.97     727.86       0.00
LOCATION DS24R296 AREA       -1338.16     706.80       0.00
LOCATION DS24R297 AREA       -1536.78     683.34       0.00
LOCATION DS24R298 AREA       -1735.39     659.87       0.00
LOCATION DS24R299 AREA       -2021.85     626.03       0.00
LOCATION DS24R300 AREA       -2132.63     612.94       0.00
LOCATION DS24R301 AREA       -2331.25     589.47       0.00
LOCATION DS24R302 AREA       -2529.87     566.01       0.00
LOCATION DS24R303 AREA       -2732.79     542.03       0.00
LOCATION DS24R304 AREA       -2927.10     519.07       0.00
LOCATION DS24R309 AREA       -3970.02     395.85       0.00
LOCATION DS24R310 AREA       -4118.82     378.27       0.00
LOCATION DS24R311 AREA       -4317.43     354.81       0.00
LOCATION DS24R330 AREA       -1110.13     733.75       0.00
LOCATION DS24R331 AREA       -1139.54     730.27       0.00
LOCATION DS24R332 AREA       -1338.16     706.80       0.00
LOCATION DS24R333 AREA       -1536.78     683.34       0.00
LOCATION DS24R334 AREA       -1748.18     658.36       0.00
LOCATION DS24R336 AREA       -2194.21     605.66       0.00
LOCATION DS24R337 AREA       -2331.25     589.47       0.00
LOCATION DS24R338 AREA       -2529.87     566.01       0.00
LOCATION DS24R339 AREA       -2845.16     528.75       0.00
LOCATION DS24R340 AREA       -2927.10     519.07       0.00
LOCATION DS24R341 AREA       -3125.72     495.61       0.00
LOCATION DS24R346 AREA       -4133.53     376.54       0.00
LOCATION DS24R347 AREA       -4373.09     348.23       0.00
LOCATION DS24R348 AREA       -4516.05     331.34       0.00
LOCATION DS24R367 AREA       -1203.84     722.67       0.00
LOCATION DS24R368 AREA       -1340.77     706.50       0.00
LOCATION DS24R369 AREA       -1567.78     679.67       0.00
LOCATION DS24R370 AREA       -1735.39     659.87       0.00
LOCATION DS24R371 AREA       -1934.01     636.40       0.00
LOCATION DS24R373 AREA       -2366.57     585.30       0.00
LOCATION DS24R374 AREA       -2529.87     566.01       0.00
LOCATION DS24R375 AREA       -2728.49     542.54       0.00
LOCATION DS24R376 AREA       -2957.53     515.48       0.00
LOCATION DS24R377 AREA       -3125.72     495.61       0.00
LOCATION DS24R382 AREA       -4297.04     357.22       0.00
LOCATION DS24R383 AREA       -4317.43     354.81       0.00
LOCATION DS24R384 AREA       -4553.56     326.91       0.00
LOCATION DS24R385 AREA       -4714.67     307.88       0.00
LOCATION DS24R403 AREA       -1297.55     711.60       0.00
LOCATION DS24R404 AREA       -1338.16     706.80       0.00
LOCATION DS24R405 AREA       -1536.78     683.34       0.00
LOCATION DS24R406 AREA       -1735.39     659.87       0.00
```

Table L.2-1
AERMOD Input File for 2005 SAIP Diesel PM Run

```
LOCATION DS24R407 AREA       -1934.01     636.40        0.00
LOCATION DS24R408 AREA       -2132.63     612.94        0.00
LOCATION DS24R409 AREA       -2473.04     572.72        0.00
LOCATION DS24R410 AREA       -2529.87     566.01        0.00
LOCATION DS24R411 AREA       -2728.49     542.54        0.00
LOCATION DS24R412 AREA       -2927.10     519.07        0.00
LOCATION DS24R413 AREA       -3125.72     495.61        0.00
LOCATION DS24R414 AREA       -3324.34     472.14        0.00
LOCATION DS24R419 AREA       -4460.54     337.90        0.00
LOCATION DS24R420 AREA       -4516.05     331.34        0.00
LOCATION DS24R421 AREA       -4734.02     305.59        0.00
LOCATION DS24R422 AREA       -4913.29     284.41        0.00
LOCATION DS24R440 AREA       -1391.27     700.53        0.00
LOCATION DS24R441 AREA       -1536.78     683.34        0.00
LOCATION DS24R442 AREA       -1834.46     648.17        0.00
LOCATION DS24R443 AREA       -1934.01     636.40        0.00
LOCATION DS24R444 AREA       -2144.49     611.54        0.00
LOCATION DS24R446 AREA       -2569.12     561.37        0.00
LOCATION DS24R447 AREA       -2728.49     542.54        0.00
LOCATION DS24R448 AREA       -2927.10     519.07        0.00
LOCATION DS24R449 AREA       -3182.27     488.93        0.00
LOCATION DS24R450 AREA       -3324.34     472.14        0.00
LOCATION DS24R451 AREA       -3522.96     448.67        0.00
LOCATION DS24R456 AREA       -4624.05     318.58        0.00
LOCATION DS24R457 AREA       -4714.67     307.88        0.00
LOCATION DS24R458 AREA       -4914.48     284.27        0.00
LOCATION DS24R476 AREA       -1484.98     689.46        0.00
LOCATION DS24R477 AREA       -1536.78     683.34        0.00
LOCATION DS24R478 AREA       -1735.39     659.87        0.00
LOCATION DS24R479 AREA       -1967.81     632.41        0.00
LOCATION DS24R480 AREA       -2132.63     612.94        0.00
LOCATION DS24R481 AREA       -2331.25     589.47        0.00
LOCATION DS24R482 AREA       -2665.20     550.02        0.00
LOCATION DS24R483 AREA       -2728.49     542.54        0.00
LOCATION DS24R484 AREA       -2927.10     519.07        0.00
LOCATION DS24R485 AREA       -3125.72     495.61        0.00
LOCATION DS24R486 AREA       -3324.34     472.14        0.00
LOCATION DS24R487 AREA       -3522.96     448.67        0.00
LOCATION DS24R493 AREA       -4787.56     299.26        0.00
LOCATION DS24R494 AREA       -4913.29     284.41        0.00
LOCATION DS24R495 AREA       -5111.91     260.94        0.00
LOCATION DS24R513 AREA       -1578.70     678.38        0.00
LOCATION DS24R514 AREA       -1735.39     659.87        0.00
LOCATION DS24R515 AREA       -2101.15     616.66        0.00
LOCATION DS24R516 AREA       -2132.63     612.94        0.00
LOCATION DS24R517 AREA       -2331.25     589.47        0.00
LOCATION DS24R518 AREA       -2529.87     566.01        0.00
LOCATION DS24R519 AREA       -2761.27     538.67        0.00
LOCATION DS24R520 AREA       -2927.10     519.07        0.00
LOCATION DS24R521 AREA       -3125.72     495.61        0.00
LOCATION DS24R522 AREA       -3407.00     462.37        0.00
LOCATION DS24R523 AREA       -3522.96     448.67        0.00
LOCATION DS24R524 AREA       -3721.58     425.21        0.00
LOCATION DS24R530 AREA       -4951.06     279.95        0.00
LOCATION DS24R531 AREA       -5111.91     260.94        0.00
LOCATION DS24R532 AREA       -5310.53     237.48        0.00
LOCATION AS24R001 AREA         203.77     888.98        0.00
LOCATION AS24R037 AREA         250.79     894.54        0.00
LOCATION AS24R038 AREA         449.41     918.00        0.00
LOCATION AS24R039 AREA         585.02     934.02        0.00
LOCATION AS24R075 AREA         648.03     941.47        0.00
LOCATION AS24R076 AREA         846.65     964.93        0.00
LOCATION AS24R077 AREA         963.84     978.78        0.00
LOCATION AS24R113 AREA        1045.27     988.40        0.00
LOCATION AS24R114 AREA        1243.88    1011.87        0.00
LOCATION AS24R115 AREA        1342.66    1023.54        0.00
LOCATION AS24R151 AREA        1442.50    1035.33        0.00
LOCATION AS24R152 AREA        1641.12    1058.80        0.00
LOCATION AS24R153 AREA        1721.48    1068.29        0.00
LOCATION AS24R189 AREA        1839.74    1082.27        0.00
LOCATION AS24R190 AREA        2038.36    1105.73        0.00
```

Table L.2-1
AERMOD Input File for 2005 SAIP Diesel PM Run

```
LOCATION AS24R191 AREA         2100.30    1113.05        0.00
LOCATION AS24R227 AREA         2236.98    1129.20        0.00
LOCATION AS24R228 AREA         2435.60    1152.67        0.00
LOCATION AS24R229 AREA         2479.12    1157.81        0.00
LOCATION AS24R265 AREA         2634.21    1176.13        0.00
LOCATION AS24R266 AREA         2832.83    1199.60        0.00
LOCATION AS24R267 AREA         2857.94    1202.57        0.00
LOCATION AS24R303 AREA         3031.45    1223.07        0.00
LOCATION AS24R304 AREA         3230.07    1246.53        0.00
LOCATION AS24R305 AREA         3236.76    1247.32        0.00
LOCATION AS24R341 AREA         3428.69    1270.00        0.00
LOCATION AS24R342 AREA         3615.58    1292.08        0.00
LOCATION AS24R378 AREA         3627.31    1293.46        0.00
LOCATION AS24R379 AREA         3825.93    1316.93        0.00
LOCATION AS24R380 AREA         3994.40    1336.84        0.00
LOCATION AS24R416 AREA         4024.54    1340.40        0.00
LOCATION AS24R417 AREA         4223.16    1363.86        0.00
LOCATION AS24R418 AREA         4373.22    1381.59        0.00
LOCATION AS24R454 AREA         4421.78    1387.33        0.00
LOCATION AS24R455 AREA         4620.40    1410.80        0.00
LOCATION AS24R456 AREA         4752.04    1426.35        0.00
LOCATION AS24R492 AREA         4819.02    1434.26        0.00
LOCATION AS24R493 AREA         5017.64    1457.73        0.00
LOCATION AS24R494 AREA         5130.86    1471.11        0.00
LOCATION AS24R530 AREA         5216.26    1481.20        0.00
LOCATION AS24R531 AREA         5414.87    1504.66        0.00
LOCATION AS24R532 AREA         5600.60    1526.61        0.00
LOCATION QU24L001 AREA           78.78     661.39        0.00
LOCATION QU24L002 AREA          -84.62     614.19        0.00
LOCATION QU24L003 AREA         -248.02     566.99        0.00
LOCATION QU24L004 AREA         -411.42     519.79        0.00
LOCATION QU24L005 AREA         -574.82     472.59        0.00
LOCATION RW06R001 AREA        -3036.18     311.93        0.00
LOCATION RW06R002 AREA        -2986.80     317.79        0.00
LOCATION RW06R003 AREA        -2937.42     323.64        0.00
LOCATION RW06R004 AREA        -2888.04     329.50        0.00
LOCATION RW06R005 AREA        -2838.65     335.36        0.00
LOCATION RW06R006 AREA        -2789.27     341.22        0.00
LOCATION RW06R007 AREA        -2739.89     347.07        0.00
LOCATION RW06R008 AREA        -2690.51     352.93        0.00
LOCATION RW06R009 AREA        -2641.13     358.79        0.00
LOCATION RW06R010 AREA        -2591.75     364.64        0.00
LOCATION RW06R011 AREA        -2542.37     370.50        0.00
LOCATION RW06R012 AREA        -2492.99     376.36        0.00
LOCATION RW06R013 AREA        -2443.61     382.22        0.00
LOCATION RW06R014 AREA        -2394.23     388.07        0.00
LOCATION RW06R015 AREA        -2344.84     393.93        0.00
LOCATION RW06R016 AREA        -2295.46     399.79        0.00
LOCATION RW06R017 AREA        -2246.08     405.64        0.00
LOCATION RW06R018 AREA        -2196.70     411.50        0.00
LOCATION RW06R019 AREA        -2147.32     417.36        0.00
LOCATION RW06R020 AREA        -2097.94     423.22        0.00
LOCATION RW06R021 AREA        -2048.56     429.07        0.00
LOCATION RW06R022 AREA        -1999.18     434.93        0.00
LOCATION RW06R023 AREA        -1949.80     440.79        0.00
LOCATION RW06R024 AREA        -1900.42     446.64        0.00
LOCATION RW06R025 AREA        -1851.04     452.50        0.00
LOCATION RW06R026 AREA        -1801.65     458.36        0.00
LOCATION RW06R027 AREA        -1752.27     464.22        0.00
LOCATION RW06R028 AREA        -1702.89     470.07        0.00
LOCATION RW06R029 AREA        -1653.51     475.93        0.00
LOCATION RW06R030 AREA        -1604.13     481.79        0.00
LOCATION RW06R031 AREA        -1554.75     487.64        0.00
LOCATION RW06R032 AREA        -1505.37     493.50        0.00
LOCATION RW06R033 AREA        -1455.99     499.36        0.00
LOCATION RW06R034 AREA        -1406.61     505.22        0.00
LOCATION RW06R035 AREA        -1357.23     511.07        0.00
LOCATION RW06R036 AREA        -1307.84     516.93        0.00
LOCATION RW06R037 AREA        -1258.46     522.79        0.00
LOCATION RW06R038 AREA        -1209.08     528.64        0.00
LOCATION RW06R039 AREA        -1159.70     534.50        0.00
```

Table L.2-1
AERMOD Input File for 2005 SAIP Diesel PM Run

```
LOCATION RW06R040 AREA       -1110.32      540.36        0.00
LOCATION RW06R041 AREA       -1060.94      546.22        0.00
LOCATION RW06R042 AREA       -1011.56      552.07        0.00
LOCATION RW06R043 AREA        -962.18      557.93        0.00
LOCATION RW06R044 AREA        -912.80      563.79        0.00
LOCATION RW06R045 AREA        -863.42      569.64        0.00
LOCATION RW06R046 AREA        -814.04      575.50        0.00
LOCATION RW06R047 AREA        -764.65      581.36        0.00
LOCATION RW06R048 AREA        -715.27      587.22        0.00
LOCATION RW06R049 AREA        -665.89      593.07        0.00
LOCATION RW06R050 AREA        -616.51      598.93        0.00
LOCATION RW06R051 AREA        -567.13      604.79        0.00
LOCATION RW06R052 AREA        -517.75      610.64        0.00
LOCATION RW06R053 AREA        -468.37      616.50        0.00
LOCATION RW06R054 AREA        -418.99      622.36        0.00
LOCATION RW06R055 AREA        -369.61      628.22        0.00
LOCATION RW06R056 AREA        -320.23      634.07        0.00
LOCATION RW06R057 AREA        -270.84      639.93        0.00
LOCATION RW06R058 AREA        -221.46      645.79        0.00
LOCATION RW06R059 AREA        -172.08      651.64        0.00
LOCATION RW06R060 AREA        -122.70      657.50        0.00
LOCATION RW06R061 AREA         -73.32      663.36        0.00
LOCATION RW06R062 AREA         -23.94      669.22        0.00
LOCATION RW06R063 AREA          25.44      675.07        0.00
LOCATION DS24L002 AREA        -297.90      616.58        0.00
LOCATION DS24L003 AREA        -320.04      613.96        0.00
LOCATION DS24L004 AREA        -557.30      585.81        0.00
LOCATION DS24L005 AREA        -721.38      566.35        0.00
LOCATION DS24L007 AREA       -1152.91      515.17        0.00
LOCATION DS24L008 AREA       -1338.87      493.11        0.00
LOCATION DS24L009 AREA       -1511.68      472.61        0.00
LOCATION DS24L010 AREA       -1710.29      449.06        0.00
LOCATION DS24L011 AREA       -1950.52      420.56        0.00
LOCATION DS24L012 AREA       -2283.50      381.07        0.00
LOCATION DS24L013 AREA       -2306.12      378.38        0.00
LOCATION DS24L014 AREA       -2541.02      350.52        0.00
LOCATION DS24L015 AREA       -2734.92      327.52        0.00
LOCATION DS24L016 AREA       -2901.94      307.71        0.00
LOCATION DS24L017 AREA       -3124.98      281.26        0.00
LOCATION DS24L039 AREA        -335.38      612.13        0.00
LOCATION DS24L040 AREA        -518.65      590.40        0.00
LOCATION DS24L041 AREA        -717.25      566.84        0.00
LOCATION DS24L042 AREA        -915.86      543.28        0.00
LOCATION DS24L043 AREA       -1194.92      510.18        0.00
LOCATION DS24L044 AREA       -1382.03      487.99        0.00
LOCATION DS24L045 AREA       -1511.68      472.61        0.00
LOCATION DS24L046 AREA       -1710.29      449.06        0.00
LOCATION DS24L047 AREA       -1908.90      425.50        0.00
LOCATION DS24L048 AREA       -2107.51      401.94        0.00
LOCATION DS24L049 AREA       -2350.87      373.08        0.00
LOCATION DS24L050 AREA       -2504.72      354.83        0.00
LOCATION DS24L051 AREA       -2703.33      331.27        0.00
LOCATION DS24L052 AREA       -2901.94      307.71        0.00
LOCATION DS24L053 AREA       -3100.55      284.16        0.00
LOCATION DS24L054 AREA       -3299.15      260.60        0.00
LOCATION DS24L075 AREA        -429.09      601.02        0.00
LOCATION DS24L076 AREA        -518.65      590.40        0.00
LOCATION DS24L077 AREA        -717.25      566.84        0.00
LOCATION DS24L078 AREA        -915.86      543.28        0.00
LOCATION DS24L079 AREA       -1114.47      519.73        0.00
LOCATION DS24L080 AREA       -1313.08      496.17        0.00
LOCATION DS24L081 AREA       -1511.68      472.61        0.00
LOCATION DS24L082 AREA       -1710.29      449.06        0.00
LOCATION DS24L083 AREA       -1908.90      425.50        0.00
LOCATION DS24L084 AREA       -2107.51      401.94        0.00
LOCATION DS24L085 AREA       -2306.12      378.38        0.00
LOCATION DS24L086 AREA       -2519.30      353.10        0.00
LOCATION DS24L087 AREA       -2778.90      322.31        0.00
LOCATION DS24L088 AREA       -2901.94      307.71        0.00
LOCATION DS24L089 AREA       -3100.55      284.16        0.00
LOCATION DS24L090 AREA       -3299.15      260.60        0.00
```

Table L.2-1
AERMOD Input File for 2005 SAIP Diesel PM Run

```
LOCATION DS24L091 AREA       -3497.76     237.04       0.00
LOCATION DS24L092 AREA       -3696.37     213.48       0.00
LOCATION DS24L112 AREA        -522.80     589.91       0.00
LOCATION DS24L113 AREA        -717.25     566.84       0.00
LOCATION DS24L114 AREA        -915.86     543.28       0.00
LOCATION DS24L115 AREA       -1135.01     517.29       0.00
LOCATION DS24L116 AREA       -1405.00     485.27       0.00
LOCATION DS24L117 AREA       -1597.83     462.39       0.00
LOCATION DS24L118 AREA       -1710.29     449.06       0.00
LOCATION DS24L119 AREA       -1908.90     425.50       0.00
LOCATION DS24L120 AREA       -2107.51     401.94       0.00
LOCATION DS24L121 AREA       -2306.12     378.38       0.00
LOCATION DS24L122 AREA       -2687.73     333.12       0.00
LOCATION DS24L123 AREA       -2703.33     331.27       0.00
LOCATION DS24L124 AREA       -2936.77     303.58       0.00
LOCATION DS24L125 AREA       -3100.55     284.16       0.00
LOCATION DS24L126 AREA       -3299.15     260.60       0.00
LOCATION DS24L127 AREA       -3497.76     237.04       0.00
LOCATION DS24L128 AREA       -3722.13     210.43       0.00
LOCATION DS24L129 AREA       -3894.98     189.93       0.00
LOCATION DS24L148 AREA        -616.51     578.79       0.00
LOCATION DS24L149 AREA        -773.30     560.19       0.00
LOCATION DS24L150 AREA        -915.86     543.28       0.00
LOCATION DS24L151 AREA       -1114.47     519.73       0.00
LOCATION DS24L152 AREA       -1313.08     496.17       0.00
LOCATION DS24L153 AREA       -1511.68     472.61       0.00
LOCATION DS24L154 AREA       -1710.29     449.06       0.00
LOCATION DS24L155 AREA       -1908.90     425.50       0.00
LOCATION DS24L156 AREA       -2107.51     401.94       0.00
LOCATION DS24L157 AREA       -2306.12     378.38       0.00
LOCATION DS24L158 AREA       -2504.72     354.83       0.00
LOCATION DS24L159 AREA       -2856.15     313.14       0.00
LOCATION DS24L160 AREA       -2901.94     307.71       0.00
LOCATION DS24L161 AREA       -3100.55     284.16       0.00
LOCATION DS24L162 AREA       -3299.15     260.60       0.00
LOCATION DS24L163 AREA       -3497.76     237.04       0.00
LOCATION DS24L164 AREA       -3696.37     213.48       0.00
LOCATION DS24L165 AREA       -3970.95     180.92       0.00
LOCATION DS24L166 AREA       -4093.59     166.37       0.00
LOCATION DS24L184 AREA        -710.22     567.68       0.00
LOCATION DS24L185 AREA        -717.25     566.84       0.00
LOCATION DS24L186 AREA        -915.86     543.28       0.00
LOCATION DS24L187 AREA       -1133.80     517.43       0.00
LOCATION DS24L188 AREA       -1313.08     496.17       0.00
LOCATION DS24L189 AREA       -1511.68     472.61       0.00
LOCATION DS24L190 AREA       -1710.29     449.06       0.00
LOCATION DS24L191 AREA       -1908.90     425.50       0.00
LOCATION DS24L192 AREA       -2134.14     398.78       0.00
LOCATION DS24L193 AREA       -2322.40     376.45       0.00
LOCATION DS24L194 AREA       -2504.72     354.83       0.00
LOCATION DS24L195 AREA       -2703.33     331.27       0.00
LOCATION DS24L196 AREA       -3024.58     293.17       0.00
LOCATION DS24L197 AREA       -3100.55     284.16       0.00
LOCATION DS24L198 AREA       -3299.15     260.60       0.00
LOCATION DS24L199 AREA       -3497.76     237.04       0.00
LOCATION DS24L200 AREA       -3696.37     213.48       0.00
LOCATION DS24L201 AREA       -3894.98     189.93       0.00
LOCATION DS24L202 AREA       -4219.77     151.40       0.00
LOCATION DS24L203 AREA       -4292.19     142.81       0.00
LOCATION DS24L221 AREA        -803.93     556.56       0.00
LOCATION DS24L222 AREA        -954.10     538.75       0.00
LOCATION DS24L223 AREA       -1114.47     519.73       0.00
LOCATION DS24L224 AREA       -1313.08     496.17       0.00
LOCATION DS24L225 AREA       -1652.05     455.96       0.00
LOCATION DS24L226 AREA       -1710.29     449.06       0.00
LOCATION DS24L227 AREA       -1921.53     424.00       0.00
LOCATION DS24L228 AREA       -2107.51     401.94       0.00
LOCATION DS24L229 AREA       -2306.12     378.38       0.00
LOCATION DS24L230 AREA       -2504.72     354.83       0.00
LOCATION DS24L231 AREA       -2703.33     331.27       0.00
LOCATION DS24L232 AREA       -2901.94     307.71       0.00
```

Table L.2-1
AERMOD Input File for 2005 SAIP Diesel PM Run

```
LOCATION DS24L233 AREA       -3193.01     273.19        0.00
LOCATION DS24L234 AREA       -3299.15     260.60        0.00
LOCATION DS24L235 AREA       -3497.76     237.04        0.00
LOCATION DS24L236 AREA       -3696.37     213.48        0.00
LOCATION DS24L237 AREA       -3894.98     189.93        0.00
LOCATION DS24L238 AREA       -4093.59     166.37        0.00
LOCATION DS24L239 AREA       -4468.58     121.89        0.00
LOCATION DS24L240 AREA       -4490.80     119.26        0.00
LOCATION DS24L241 AREA       -4689.41      95.70        0.00
LOCATION DS24L257 AREA        -897.64     545.45        0.00
LOCATION DS24L258 AREA        -915.86     543.28        0.00
LOCATION DS24L259 AREA       -1114.47     519.73        0.00
LOCATION DS24L260 AREA       -1363.44     490.20        0.00
LOCATION DS24L261 AREA       -1511.68     472.61        0.00
LOCATION DS24L262 AREA       -1824.39     435.52        0.00
LOCATION DS24L263 AREA       -1908.90     425.50        0.00
LOCATION DS24L264 AREA       -2107.51     401.94        0.00
LOCATION DS24L265 AREA       -2306.12     378.38        0.00
LOCATION DS24L266 AREA       -2576.96     346.26        0.00
LOCATION DS24L267 AREA       -2703.33     331.27        0.00
LOCATION DS24L268 AREA       -2976.64     298.85        0.00
LOCATION DS24L269 AREA       -3100.55     284.16        0.00
LOCATION DS24L270 AREA       -3361.44     253.21        0.00
LOCATION DS24L271 AREA       -3497.76     237.04        0.00
LOCATION DS24L272 AREA       -3696.37     213.48        0.00
LOCATION DS24L273 AREA       -3894.98     189.93        0.00
LOCATION DS24L274 AREA       -4093.59     166.37        0.00
LOCATION DS24L277 AREA       -4717.40      92.38        0.00
LOCATION DS24L278 AREA       -4888.02      72.14        0.00
LOCATION DS24L294 AREA        -991.35     534.33        0.00
LOCATION DS24L295 AREA       -1134.90     517.30        0.00
LOCATION DS24L296 AREA       -1478.25     476.58        0.00
LOCATION DS24L297 AREA       -1511.68     472.61        0.00
LOCATION DS24L298 AREA       -1710.29     449.06        0.00
LOCATION DS24L299 AREA       -1934.33     422.48        0.00
LOCATION DS24L300 AREA       -2107.51     401.94        0.00
LOCATION DS24L301 AREA       -2306.12     378.38        0.00
LOCATION DS24L302 AREA       -2504.72     354.83        0.00
LOCATION DS24L303 AREA       -2703.33     331.27        0.00
LOCATION DS24L304 AREA       -2901.94     307.71        0.00
LOCATION DS24L305 AREA       -3136.97     279.84        0.00
LOCATION DS24L307 AREA       -3529.86     233.23        0.00
LOCATION DS24L308 AREA       -3696.37     213.48        0.00
LOCATION DS24L309 AREA       -3894.98     189.93        0.00
LOCATION DS24L310 AREA       -4093.59     166.37        0.00
LOCATION DS24L311 AREA       -4292.19     142.81        0.00
LOCATION DS24L314 AREA       -4966.21      62.87        0.00
LOCATION DS24L315 AREA       -5086.63      48.58        0.00
LOCATION DS24L330 AREA       -1085.06     523.22        0.00
LOCATION DS24L331 AREA       -1114.47     519.73        0.00
LOCATION DS24L332 AREA       -1313.08     496.17        0.00
LOCATION DS24L333 AREA       -1593.07     462.96        0.00
LOCATION DS24L334 AREA       -1710.29     449.06        0.00
LOCATION DS24L335 AREA       -2040.84     409.85        0.00
LOCATION DS24L336 AREA       -2107.51     401.94        0.00
LOCATION DS24L337 AREA       -2306.12     378.38        0.00
LOCATION DS24L338 AREA       -2504.72     354.83        0.00
LOCATION DS24L339 AREA       -2820.57     317.36        0.00
LOCATION DS24L340 AREA       -2901.94     307.71        0.00
LOCATION DS24L341 AREA       -3100.55     284.16        0.00
LOCATION DS24L342 AREA       -3299.15     260.60        0.00
LOCATION DS24L344 AREA       -3698.29     213.26        0.00
LOCATION DS24L345 AREA       -3894.98     189.93        0.00
LOCATION DS24L346 AREA       -4108.30     164.62        0.00
LOCATION DS24L347 AREA       -4292.19     142.81        0.00
LOCATION DS24L348 AREA       -4490.80     119.26        0.00
LOCATION DS24L351 AREA       -5215.03      33.35        0.00
LOCATION DS24L352 AREA       -5285.23      25.03        0.00
LOCATION DS24L367 AREA       -1178.77     512.10        0.00
LOCATION DS24L368 AREA       -1315.69     495.86        0.00
LOCATION DS24L369 AREA       -1707.89     449.34        0.00
```

Table L.2-1
AERMOD Input File for 2005 SAIP Diesel PM Run

```
LOCATION DS24L370 AREA      -1710.29     449.06       0.00
LOCATION DS24L371 AREA      -1908.90     425.50       0.00
LOCATION DS24L372 AREA      -2147.34     397.22       0.00
LOCATION DS24L373 AREA      -2341.43     374.20       0.00
LOCATION DS24L374 AREA      -2504.72     354.83       0.00
LOCATION DS24L375 AREA      -2703.33     331.27       0.00
LOCATION DS24L376 AREA      -2942.17     302.94       0.00
LOCATION DS24L377 AREA      -3100.55     284.16       0.00
LOCATION DS24L378 AREA      -3457.63     241.80       0.00
LOCATION DS24L379 AREA      -3497.76     237.04       0.00
LOCATION DS24L380 AREA      -3866.72     193.28       0.00
LOCATION DS24L381 AREA      -3894.98     189.93       0.00
LOCATION DS24L382 AREA      -4093.59     166.37       0.00
LOCATION DS24L383 AREA      -4292.19     142.81       0.00
LOCATION DS24L384 AREA      -4490.80     119.26       0.00
LOCATION DS24L385 AREA      -4689.41      95.70       0.00
LOCATION DS24L388 AREA      -5463.85       3.84       0.00
LOCATION DS24L389 AREA      -5483.84       1.47       0.00
LOCATION DS24L390 AREA      -5682.45     -22.09       0.00
LOCATION DS24L403 AREA      -1272.48     500.99       0.00
LOCATION DS24L404 AREA      -1313.08     496.17       0.00
LOCATION DS24L405 AREA      -1511.68     472.61       0.00
LOCATION DS24L406 AREA      -1822.71     435.72       0.00
LOCATION DS24L407 AREA      -1908.90     425.50       0.00
LOCATION DS24L408 AREA      -2107.51     401.94       0.00
LOCATION DS24L409 AREA      -2306.12     378.38       0.00
LOCATION DS24L410 AREA      -2504.72     354.83       0.00
LOCATION DS24L411 AREA      -2703.33     331.27       0.00
LOCATION DS24L412 AREA      -2901.94     307.71       0.00
LOCATION DS24L413 AREA      -3100.55     284.16       0.00
LOCATION DS24L414 AREA      -3299.15     260.60       0.00
LOCATION DS24L415 AREA      -3617.96     222.78       0.00
LOCATION DS24L416 AREA      -3696.37     213.48       0.00
LOCATION DS24L417 AREA      -4035.09     173.31       0.00
LOCATION DS24L418 AREA      -4093.59     166.37       0.00
LOCATION DS24L419 AREA      -4292.19     142.81       0.00
LOCATION DS24L420 AREA      -4490.80     119.26       0.00
LOCATION DS24L421 AREA      -4689.41      95.70       0.00
LOCATION DS24L422 AREA      -4888.02      72.14       0.00
LOCATION DS24L426 AREA      -5712.66     -25.67       0.00
LOCATION DS24L427 AREA      -5881.06     -45.64       0.00
LOCATION DS24L440 AREA      -1366.19     489.87       0.00
LOCATION DS24L441 AREA      -1511.68     472.61       0.00
LOCATION DS24L443 AREA      -1937.52     422.10       0.00
LOCATION DS24L444 AREA      -2107.51     401.94       0.00
LOCATION DS24L445 AREA      -2360.35     371.95       0.00
LOCATION DS24L446 AREA      -2543.97     350.17       0.00
LOCATION DS24L447 AREA      -2703.33     331.27       0.00
LOCATION DS24L448 AREA      -2901.94     307.71       0.00
LOCATION DS24L449 AREA      -3174.27     275.41       0.00
LOCATION DS24L450 AREA      -3299.15     260.60       0.00
LOCATION DS24L451 AREA      -3497.76     237.04       0.00
LOCATION DS24L452 AREA      -3778.29     203.77       0.00
LOCATION DS24L453 AREA      -3894.98     189.93       0.00
LOCATION DS24L454 AREA      -4172.38     157.02       0.00
LOCATION DS24L455 AREA      -4292.19     142.81       0.00
LOCATION DS24L456 AREA      -4490.80     119.26       0.00
LOCATION DS24L457 AREA      -4689.41      95.70       0.00
LOCATION DS24L458 AREA      -4888.02      72.14       0.00
LOCATION DS24L459 AREA      -5086.63      48.58       0.00
LOCATION DS24L463 AREA      -5961.48     -55.18       0.00
LOCATION DS24L464 AREA      -6079.66     -69.20       0.00
LOCATION DS24L476 AREA      -1459.89     478.76       0.00
LOCATION DS24L477 AREA      -1511.68     472.61       0.00
LOCATION DS24L478 AREA      -1710.29     449.06       0.00
LOCATION DS24L479 AREA      -2052.34     408.48       0.00
LOCATION DS24L480 AREA      -2107.51     401.94       0.00
LOCATION DS24L481 AREA      -2306.12     378.38       0.00
LOCATION DS24L482 AREA      -2504.72     354.83       0.00
LOCATION DS24L483 AREA      -2703.33     331.27       0.00
LOCATION DS24L484 AREA      -2901.94     307.71       0.00
```

Table L.2-1
AERMOD Input File for 2005 SAIP Diesel PM Run

```
LOCATION DS24L485 AREA       -3100.55     284.16       0.00
LOCATION DS24L486 AREA       -3299.15     260.60       0.00
LOCATION DS24L487 AREA       -3497.76     237.04       0.00
LOCATION DS24L488 AREA       -3696.37     213.48       0.00
LOCATION DS24L489 AREA       -3938.62     184.75       0.00
LOCATION DS24L490 AREA       -4093.59     166.37       0.00
LOCATION DS24L491 AREA       -4309.67     140.74       0.00
LOCATION DS24L492 AREA       -4490.80     119.26       0.00
LOCATION DS24L493 AREA       -4689.41      95.70       0.00
LOCATION DS24L494 AREA       -4888.02      72.14       0.00
LOCATION DS24L495 AREA       -5086.63      48.58       0.00
LOCATION DS24L496 AREA       -5285.23      25.03       0.00
LOCATION DS24L500 AREA       -6210.29     -84.70       0.00
LOCATION DS24L501 AREA       -6278.27     -92.76       0.00
LOCATION DS24L513 AREA       -1553.60     467.64       0.00
LOCATION DS24L514 AREA       -1710.29     449.06       0.00
LOCATION DS24L516 AREA       -2167.16     394.87       0.00
LOCATION DS24L517 AREA       -2306.12     378.38       0.00
LOCATION DS24L518 AREA       -2504.72     354.83       0.00
LOCATION DS24L519 AREA       -2703.33     331.27       0.00
LOCATION DS24L520 AREA       -2901.94     307.71       0.00
LOCATION DS24L521 AREA       -3100.55     284.16       0.00
LOCATION DS24L522 AREA       -3406.36     247.88       0.00
LOCATION DS24L523 AREA       -3497.76     237.04       0.00
LOCATION DS24L524 AREA       -3696.37     213.48       0.00
LOCATION DS24L526 AREA       -4098.95     165.73       0.00
LOCATION DS24L527 AREA       -4292.19     142.81       0.00
LOCATION DS24L528 AREA       -4490.80     119.26       0.00
LOCATION DS24L529 AREA       -4689.41      95.70       0.00
LOCATION DS24L530 AREA       -4888.02      72.14       0.00
LOCATION DS24L531 AREA       -5086.63      48.58       0.00
LOCATION DS24L532 AREA       -5285.23      25.03       0.00
LOCATION DS24L533 AREA       -5483.84       1.47       0.00
LOCATION DS24L537 AREA       -6459.11    -114.21       0.00
LOCATION DS24L538 AREA       -6476.88    -116.32       0.00
LOCATION DS24L539 AREA       -6675.49    -139.87       0.00
LOCATION AS24L001 AREA         228.77     679.05       0.00
LOCATION AS24L037 AREA         275.79     684.63       0.00
LOCATION AS24L038 AREA         474.39     708.18       0.00
LOCATION AS24L039 AREA         610.12     724.28       0.00
LOCATION AS24L075 AREA         673.00     731.74       0.00
LOCATION AS24L076 AREA         871.61     755.30       0.00
LOCATION AS24L077 AREA         989.25     769.25       0.00
LOCATION AS24L113 AREA        1070.22     778.86       0.00
LOCATION AS24L114 AREA        1268.82     802.41       0.00
LOCATION AS24L115 AREA        1368.02     814.18       0.00
LOCATION AS24L151 AREA        1467.43     825.97       0.00
LOCATION AS24L152 AREA        1666.04     849.53       0.00
LOCATION AS24L153 AREA        1746.78     859.10       0.00
LOCATION AS24L188 AREA        1666.04     849.53       0.00
LOCATION AS24L189 AREA        1864.65     873.08       0.00
LOCATION AS24L190 AREA        2063.26     896.64       0.00
LOCATION AS24L191 AREA        2125.54     904.03       0.00
LOCATION AS24L226 AREA        2063.26     896.64       0.00
LOCATION AS24L227 AREA        2261.86     920.20       0.00
LOCATION AS24L228 AREA        2460.47     943.76       0.00
LOCATION AS24L229 AREA        2504.31     948.95       0.00
LOCATION AS24L264 AREA        2460.47     943.76       0.00
LOCATION AS24L265 AREA        2659.08     967.31       0.00
LOCATION AS24L266 AREA        2857.69     990.87       0.00
LOCATION AS24L267 AREA        2883.07     993.88       0.00
LOCATION AS24L302 AREA        2857.69     990.87       0.00
LOCATION AS24L303 AREA        3056.29    1014.43       0.00
LOCATION AS24L304 AREA        3254.90    1037.98       0.00
LOCATION AS24L305 AREA        3261.84    1038.81       0.00
LOCATION AS24L340 AREA        3254.90    1037.98       0.00
LOCATION AS24L341 AREA        3453.51    1061.54       0.00
LOCATION AS24L342 AREA        3640.60    1083.73       0.00
LOCATION AS24L377 AREA        3453.51    1061.54       0.00
LOCATION AS24L378 AREA        3652.12    1085.10       0.00
LOCATION AS24L379 AREA        3850.73    1108.66       0.00
```

Table L.2-1
AERMOD Input File for 2005 SAIP Diesel PM Run

```
   LOCATION AS24L380 AREA        4019.36    1128.66       0.00
   LOCATION AS24L415 AREA        3850.73    1108.66       0.00
   LOCATION AS24L416 AREA        4049.33    1132.21       0.00
   LOCATION AS24L417 AREA        4247.94    1155.77       0.00
   LOCATION AS24L418 AREA        4398.13    1173.58       0.00
   LOCATION AS24L453 AREA        4247.94    1155.77       0.00
   LOCATION AS24L454 AREA        4446.55    1179.33       0.00
   LOCATION AS24L455 AREA        4645.16    1202.88       0.00
   LOCATION AS24L456 AREA        4776.89    1218.51       0.00
   LOCATION AS24L491 AREA        4645.16    1202.88       0.00
   LOCATION AS24L492 AREA        4843.77    1226.44       0.00
   LOCATION AS24L493 AREA        5042.37    1250.00       0.00
   LOCATION AS24L494 AREA        5155.66    1263.43       0.00
   LOCATION AS24L528 AREA        4843.77    1226.44       0.00
   LOCATION AS24L529 AREA        5042.37    1250.00       0.00
   LOCATION AS24L530 AREA        5240.98    1273.56       0.00
   LOCATION AS24L531 AREA        5439.59    1297.11       0.00
   LOCATION AS24L532 AREA        5625.32    1319.14       0.00
**----------------------------------------
** Construction Source Parameters
**----------------------------------------
   SRCPARAM L0000001 0.029412 5.00 45.62 1.16
   SRCPARAM L0000002 0.029412 5.00 45.62 1.16
   SRCPARAM L0000003 0.029412 5.00 45.62 1.16
   SRCPARAM L0000004 0.029412 5.00 45.62 1.16
   SRCPARAM L0000005 0.029412 5.00 45.62 1.16
   SRCPARAM L0000006 0.029412 5.00 45.62 1.16
   SRCPARAM L0000007 0.029412 5.00 45.62 1.16
   SRCPARAM L0000008 0.029412 5.00 45.62 1.16
   SRCPARAM L0000009 0.029412 5.00 45.62 1.16
   SRCPARAM L0000010 0.029412 5.00 45.62 1.16
   SRCPARAM L0000011 0.029412 5.00 45.62 1.16
   SRCPARAM L0000012 0.029412 5.00 45.62 1.16
   SRCPARAM L0000013 0.029412 5.00 45.62 1.16
   SRCPARAM L0000014 0.029412 5.00 45.62 1.16
   SRCPARAM L0000015 0.029412 5.00 45.62 1.16
   SRCPARAM L0000016 0.029412 5.00 45.62 1.16
   SRCPARAM L0000017 0.029412 5.00 45.62 1.16
   SRCPARAM L0000018 0.029412 5.00 45.62 1.16
   SRCPARAM L0000019 0.029412 5.00 45.62 1.16
   SRCPARAM L0000020 0.029412 5.00 45.62 1.16
   SRCPARAM L0000021 0.029412 5.00 45.62 1.16
   SRCPARAM L0000022 0.029412 5.00 45.62 1.16
   SRCPARAM L0000023 0.029412 5.00 45.62 1.16
   SRCPARAM L0000024 0.029412 5.00 45.62 1.16
   SRCPARAM L0000025 0.029412 5.00 45.62 1.16
   SRCPARAM L0000026 0.029412 5.00 45.62 1.16
   SRCPARAM L0000027 0.029412 5.00 45.62 1.16
   SRCPARAM L0000028 0.029412 5.00 45.62 1.16
   SRCPARAM L0000029 0.029412 5.00 45.62 1.16
   SRCPARAM L0000030 0.029412 5.00 45.62 1.16
   SRCPARAM L0000031 0.029412 5.00 45.62 1.16
   SRCPARAM L0000032 0.029412 5.00 45.62 1.16
   SRCPARAM L0000033 0.029412 5.00 45.62 1.16
   SRCPARAM L0000034 0.029412 5.00 45.62 1.16
   SRCPARAM L0000617 0.029412 0.00 45.62 2.33
   SRCPARAM L0000618 0.029412 0.00 45.62 2.33
   SRCPARAM L0000619 0.029412 0.00 45.62 2.33
   SRCPARAM L0000620 0.029412 0.00 45.62 2.33
   SRCPARAM L0000621 0.029412 0.00 45.62 2.33
   SRCPARAM L0000622 0.029412 0.00 45.62 2.33
   SRCPARAM L0000623 0.029412 0.00 45.62 2.33
   SRCPARAM L0000624 0.029412 0.00 45.62 2.33
   SRCPARAM L0000625 0.029412 0.00 45.62 2.33
   SRCPARAM L0000626 0.029412 0.00 45.62 2.33
   SRCPARAM L0000627 0.029412 0.00 45.62 2.33
   SRCPARAM L0000628 0.029412 0.00 45.62 2.33
   SRCPARAM L0000629 0.029412 0.00 45.62 2.33
   SRCPARAM L0000630 0.029412 0.00 45.62 2.33
   SRCPARAM L0000631 0.029412 0.00 45.62 2.33
   SRCPARAM L0000632 0.029412 0.00 45.62 2.33
```

Table L.2-1
AERMOD Input File for 2005 SAIP Diesel PM Run

```
   SRCPARAM L0000633 0.029412 0.00 45.62 2.33
   SRCPARAM L0000634 0.029412 0.00 45.62 2.33
   SRCPARAM L0000635 0.029412 0.00 45.62 2.33
   SRCPARAM L0000636 0.029412 0.00 45.62 2.33
   SRCPARAM L0000637 0.029412 0.00 45.62 2.33
   SRCPARAM L0000638 0.029412 0.00 45.62 2.33
   SRCPARAM L0000639 0.029412 0.00 45.62 2.33
   SRCPARAM L0000640 0.029412 0.00 45.62 2.33
   SRCPARAM L0000641 0.029412 0.00 45.62 2.33
   SRCPARAM L0000642 0.029412 0.00 45.62 2.33
   SRCPARAM L0000643 0.029412 0.00 45.62 2.33
   SRCPARAM L0000644 0.029412 0.00 45.62 2.33
   SRCPARAM L0000645 0.029412 0.00 45.62 2.33
   SRCPARAM L0000646 0.029412 0.00 45.62 2.33
   SRCPARAM L0000647 0.029412 0.00 45.62 2.33
   SRCPARAM L0000648 0.029412 0.00 45.62 2.33
   SRCPARAM L0000649 0.029412 0.00 45.62 2.33
   SRCPARAM L0000650 0.029412 0.00 45.62 2.33
** END OF CONSTRUCTION PARAMETERS
** ------------------------------------------------------------
**  VOLUME SOURCE PARAMETERS:     HEIGHT   SIGMA-Y0   SIGMA-Z0
** ------------------------------------------------------------
   SRCPARAM GATE_001 1.0            1.50      16.00      3.00
   SRCPARAM GATE_002 1.0            1.50      16.00      3.00
   SRCPARAM GATE_003 1.0            1.50      16.00      3.00
   SRCPARAM GATE_004 1.0            1.50      16.00      3.00
   SRCPARAM GATE_005 1.0            1.50      16.00      3.00
   SRCPARAM GATE_006 1.0            1.50      16.00      3.00
   SRCPARAM GATE_007 1.0            1.50      16.00      3.00
   SRCPARAM GATE_008 1.0            1.50      16.00      3.00
   SRCPARAM GATE_009 1.0            1.50      16.00      3.00
   SRCPARAM GATE_010 1.0            1.50      16.00      3.00
   SRCPARAM GATE_011 1.0            1.50      16.00      3.00
   SRCPARAM GATE_012 1.0            1.50      16.00      3.00
   SRCPARAM GATE_013 1.0            1.50      16.00      3.00
   SRCPARAM GATE_014 1.0            1.50      16.00      3.00
   SRCPARAM GATE_015 1.0            1.50      16.00      3.00
** ----------------------------------------------------------------------
**  POINT SOURCE PARAMETERS:      HEIGHT     -----*     -----*  DIAMETER
**  *These two columns are overridden in the hourly emission (.hre) file.
** ----------------------------------------------------------------------
   SRCPARAM STAT_001 1.0           10.00     273.15       1.00      1.70
   SRCPARAM STAT_002 1.0           15.00     273.15       1.00      0.50
   SRCPARAM STAT_003 1.0           15.00     273.15       1.00      0.50
   SRCPARAM STAT_004 1.0           15.00     273.15       1.00      0.50
   SRCPARAM STAT_005 1.0           15.00     273.15       1.00      0.50
   SRCPARAM STAT_006 1.0           10.00     273.15       1.00      0.60
   SRCPARAM STAT_007 1.0           15.00     273.15       1.00     10.00
   SRCPARAM STAT_008 1.0            4.00     273.15       1.00      7.00
   SRCPARAM STAT_009 1.0            4.00     273.15       1.00      7.00
   SRCPARAM STAT_010 1.0            4.00     273.15       1.00      7.00
   SRCPARAM STAT_011 1.0            4.00     273.15       1.00      7.00
   SRCPARAM STAT_012 1.0           20.00     273.15       1.00      0.60
   SRCPARAM STAT_013 1.0           20.00     273.15       1.00      0.60
   SRCPARAM STAT_014 1.0           20.00     273.15       1.00      0.60
   SRCPARAM STAT_015 1.0           20.00     273.15       1.00      0.60
   SRCPARAM STAT_016 1.0           15.00     273.15       1.00      0.60
   SRCPARAM STAT_017 1.0            4.00     273.15       1.00      7.00
** ----------------------------------------------------------------------------------
**  AREA SOURCE PARAMETERS:       HEIGHT      WIDTH     LENGTH      ANGLE   SIGMA-Z0
** ----------------------------------------------------------------------------------
   SRCPARAM RD001001 1.0            0.00      20.00     183.37      84.99       3.00
   SRCPARAM RD001002 1.0            0.00      20.00     183.37      84.99       3.00
   SRCPARAM RD001003 1.0            0.00      20.00     183.37      84.99       3.00
   SRCPARAM RD001004 1.0            0.00      20.00     183.37      84.99       3.00
   SRCPARAM RD001005 1.0            0.00      20.00     183.37      84.99       3.00
   SRCPARAM RD001006 1.0            0.00      20.00     183.37      84.99       3.00
   SRCPARAM RD002001 1.0            0.00      20.00     189.42      76.26       3.00
   SRCPARAM RD003001 1.0            0.00      20.00     124.90     173.10       3.00
   SRCPARAM RD003002 1.0            0.00      20.00     124.90     173.10       3.00
   SRCPARAM RD004001 1.0            0.00      20.00     143.46     -13.83       3.00
```

Table L.2-1
AERMOD Input File for 2005 SAIP Diesel PM Run

```
SRCPARAM RD005001 1.0            0.00      20.00     104.70     -87.48         3.00
SRCPARAM RD005002 1.0            0.00      20.00     104.70     -87.48         3.00
SRCPARAM RD006001 1.0            0.00      20.00     135.36    -172.19         3.00
SRCPARAM RD007001 1.0            0.00      20.00     156.01     -16.15         3.00
SRCPARAM RD007002 1.0            0.00      20.00     156.01     -16.15         3.00
SRCPARAM RD008001 1.0            0.00      20.00     116.50      -0.25         3.00
SRCPARAM RD008002 1.0            0.00      20.00     116.50      -0.25         3.00
SRCPARAM RD009001 1.0            0.00      20.00     167.82     175.08         3.00
SRCPARAM RD010001 1.0            0.00      20.00     173.42     176.81         3.00
SRCPARAM RD010002 1.0            0.00      20.00     173.42     176.81         3.00
SRCPARAM RD011001 1.0            0.00      20.00     145.80      90.00         3.00
SRCPARAM RD012001 1.0            0.00      20.00     161.20       0.00         3.00
SRCPARAM RD013001 1.0            0.00      20.00     153.34      89.70         3.00
SRCPARAM RD013002 1.0            0.00      20.00     153.34      89.70         3.00
SRCPARAM RD013003 1.0            0.00      20.00     153.34      89.70         3.00
SRCPARAM RD014001 1.0            0.00      20.00     123.90     180.00         3.00
SRCPARAM RD015001 1.0            0.00      20.00     136.50      89.83         3.00
SRCPARAM RD015002 1.0            0.00      20.00     136.50      89.83         3.00
SRCPARAM RD015003 1.0            0.00      20.00     136.50      89.83         3.00
SRCPARAM RD016001 1.0            0.00      20.00     121.46     179.43         3.00
SRCPARAM RD016002 1.0            0.00      20.00     121.46     179.43         3.00
SRCPARAM RD017001 1.0            0.00      20.00     142.11       5.18         3.00
SRCPARAM RD017002 1.0            0.00      20.00     142.11       5.18         3.00
SRCPARAM RD017003 1.0            0.00      20.00     142.11       5.18         3.00
SRCPARAM RD018001 1.0            0.00      20.00     118.07      83.87         3.00
SRCPARAM RD018002 1.0            0.00      20.00     118.07      83.87         3.00
SRCPARAM RD019001 1.0            0.00      20.00     100.45     165.38         3.00
SRCPARAM RD019002 1.0            0.00      20.00     100.45     165.38         3.00
SRCPARAM RD020001 1.0            0.00      20.00     161.34    -179.53         3.00
SRCPARAM RD020002 1.0            0.00      20.00     161.34    -179.53         3.00
SRCPARAM RD020003 1.0            0.00      20.00     161.34    -179.53         3.00
SRCPARAM RD021001 1.0            0.00      20.00     155.81     -81.27         3.00
SRCPARAM RD021002 1.0            0.00      20.00     155.81     -81.27         3.00
SRCPARAM RD022001 1.0            0.00      20.00     169.60     178.38         3.00
SRCPARAM RD022002 1.0            0.00      20.00     169.60     178.38         3.00
SRCPARAM RD022003 1.0            0.00      20.00     169.60     178.38         3.00
SRCPARAM RD023001 1.0            0.00      20.00     140.30     -89.82         3.00
SRCPARAM RD023002 1.0            0.00      20.00     140.30     -89.82         3.00
SRCPARAM RD023003 1.0            0.00      20.00     140.30     -89.82         3.00
SRCPARAM RD024001 1.0            0.00      20.00     139.30       0.18         3.00
SRCPARAM RD024002 1.0            0.00      20.00     139.30       0.18         3.00
SRCPARAM RD024003 1.0            0.00      20.00     139.30       0.18         3.00
SRCPARAM RD025001 1.0            0.00      20.00     196.13      83.20         3.00
SRCPARAM RD025002 1.0            0.00      20.00     196.13      83.20         3.00
SRCPARAM RD025003 1.0            0.00      20.00     196.13      83.20         3.00
SRCPARAM RD025004 1.0            0.00      20.00     196.13      83.20         3.00
SRCPARAM RD025005 1.0            0.00      20.00     196.13      83.20         3.00
SRCPARAM RD025006 1.0            0.00      20.00     196.13      83.20         3.00
SRCPARAM RD025007 1.0            0.00      20.00     196.13      83.20         3.00
SRCPARAM RD025008 1.0            0.00      20.00     196.13      83.20         3.00
SRCPARAM RD025009 1.0            0.00      20.00     196.13      83.20         3.00
SRCPARAM RD025010 1.0            0.00      20.00     196.13      83.20         3.00
SRCPARAM RD026001 1.0            0.00      20.00     174.53     -91.12         3.00
SRCPARAM RD026002 1.0            0.00      20.00     174.53     -91.12         3.00
SRCPARAM RD026003 1.0            0.00      20.00     174.53     -91.12         3.00
SRCPARAM RD026004 1.0            0.00      20.00     174.53     -91.12         3.00
SRCPARAM RD026005 1.0            0.00      20.00     174.53     -91.12         3.00
SRCPARAM RD027001 1.0            0.00      20.00     165.67     -95.01         3.00
SRCPARAM RD027002 1.0            0.00      20.00     165.67     -95.01         3.00
SRCPARAM RD027003 1.0            0.00      20.00     165.67     -95.01         3.00
SRCPARAM RD027004 1.0            0.00      20.00     165.67     -95.01         3.00
SRCPARAM RD027005 1.0            0.00      20.00     165.67     -95.01         3.00
SRCPARAM RD028001 1.0            0.00      20.00     174.76     -80.45         3.00
SRCPARAM RD028002 1.0            0.00      20.00     174.76     -80.45         3.00
SRCPARAM RD028003 1.0            0.00      20.00     174.76     -80.45         3.00
SRCPARAM RD029001 1.0            0.00      20.00     192.07     -97.33         3.00
SRCPARAM RD029002 1.0            0.00      20.00     192.07     -97.33         3.00
SRCPARAM RD030001 1.0            0.00      20.00     108.19     -98.50         3.00
SRCPARAM RD030002 1.0            0.00      20.00     108.19     -98.50         3.00
SRCPARAM RD031001 1.0            0.00      20.00     107.02      84.37         3.00
SRCPARAM RD031002 1.0            0.00      20.00     107.02      84.37         3.00
```

Table L.2-1
AERMOD Input File for 2005 SAIP Diesel PM Run

```
SRCPARAM RD032001 1.0           0.00       20.00      178.24       83.23         3.00
SRCPARAM RD033001 1.0           0.00       20.00      103.64       83.63         3.00
SRCPARAM RD033002 1.0           0.00       20.00      103.64       83.63         3.00
SRCPARAM RD034001 1.0           0.00       20.00      153.62       83.08         3.00
SRCPARAM RD034002 1.0           0.00       20.00      153.62       83.08         3.00
SRCPARAM RD035001 1.0           0.00       20.00      110.11       55.73         3.00
SRCPARAM RD035002 1.0           0.00       20.00      110.11       55.73         3.00
SRCPARAM RD036001 1.0           0.00       20.00      116.90      172.87         3.00
SRCPARAM RD036002 1.0           0.00       20.00      116.90      172.87         3.00
SRCPARAM RD037001 1.0           0.00       20.00      122.30      173.43         3.00
SRCPARAM RD037002 1.0           0.00       20.00      122.30      173.43         3.00
SRCPARAM TW001001 1.0          12.00       20.00      176.69      173.34         4.10
SRCPARAM TW001002 1.0          12.00       20.00      176.69      173.34         4.10
SRCPARAM TW001003 1.0          12.00       20.00      176.69      173.34         4.10
SRCPARAM TW001004 1.0          12.00       20.00      176.69      173.34         4.10
SRCPARAM TW001005 1.0          12.00       20.00      176.69      173.34         4.10
SRCPARAM TW001006 1.0          12.00       20.00      176.69      173.34         4.10
SRCPARAM TW002001 1.0          12.00       20.00      190.60      172.97         4.10
SRCPARAM TW002002 1.0          12.00       20.00      190.60      172.97         4.10
SRCPARAM TW002003 1.0          12.00       20.00      190.60      172.97         4.10
SRCPARAM TW002004 1.0          12.00       20.00      190.60      172.97         4.10
SRCPARAM TW002005 1.0          12.00       20.00      190.60      172.97         4.10
SRCPARAM TW002006 1.0          12.00       20.00      190.60      172.97         4.10
SRCPARAM TW003001 1.0          12.00       20.00      188.72      173.05         4.10
SRCPARAM TW003002 1.0          12.00       20.00      188.72      173.05         4.10
SRCPARAM TW003003 1.0          12.00       20.00      188.72      173.05         4.10
SRCPARAM TW003004 1.0          12.00       20.00      188.72      173.05         4.10
SRCPARAM TW003005 1.0          12.00       20.00      188.72      173.05         4.10
SRCPARAM TW003006 1.0          12.00       20.00      188.72      173.05         4.10
SRCPARAM TW004001 1.0          12.00       20.00      190.39       82.06         4.10
SRCPARAM TW004002 1.0          12.00       20.00      190.39       82.06         4.10
SRCPARAM TW004003 1.0          12.00       20.00      190.39       82.06         4.10
SRCPARAM TW004004 1.0          12.00       20.00      190.39       82.06         4.10
SRCPARAM TW004005 1.0          12.00       20.00      190.39       82.06         4.10
SRCPARAM TW004006 1.0          12.00       20.00      190.39       82.06         4.10
SRCPARAM TW004007 1.0          12.00       20.00      190.39       82.06         4.10
SRCPARAM TW005001 1.0          12.00       20.00      198.83       83.36         4.10
SRCPARAM TW005002 1.0          12.00       20.00      198.83       83.36         4.10
SRCPARAM TW005003 1.0          12.00       20.00      198.83       83.36         4.10
SRCPARAM TW005004 1.0          12.00       20.00      198.83       83.36         4.10
SRCPARAM TW005005 1.0          12.00       20.00      198.83       83.36         4.10
SRCPARAM TW005006 1.0          12.00       20.00      198.83       83.36         4.10
SRCPARAM TW005007 1.0          12.00       20.00      198.83       83.36         4.10
SRCPARAM TW005008 1.0          12.00       20.00      198.83       83.36         4.10
SRCPARAM TW005009 1.0          12.00       20.00      198.83       83.36         4.10
SRCPARAM TW005010 1.0          12.00       20.00      198.83       83.36         4.10
SRCPARAM TW005011 1.0          12.00       20.00      198.83       83.36         4.10
SRCPARAM TW005012 1.0          12.00       20.00      198.83       83.36         4.10
SRCPARAM TW005013 1.0          12.00       20.00      198.83       83.36         4.10
SRCPARAM TW005014 1.0          12.00       20.00      198.83       83.36         4.10
SRCPARAM TW006001 1.0          12.00       20.00      181.03       83.18         4.10
SRCPARAM TW006002 1.0          12.00       20.00      181.03       83.18         4.10
SRCPARAM TW006003 1.0          12.00       20.00      181.03       83.18         4.10
SRCPARAM TW006004 1.0          12.00       20.00      181.03       83.18         4.10
SRCPARAM TW006005 1.0          12.00       20.00      181.03       83.18         4.10
SRCPARAM TW006006 1.0          12.00       20.00      181.03       83.18         4.10
SRCPARAM TW006007 1.0          12.00       20.00      181.03       83.18         4.10
SRCPARAM TW006008 1.0          12.00       20.00      181.03       83.18         4.10
SRCPARAM TW007001 1.0          12.00       20.00      194.77       84.89         4.10
SRCPARAM TW007002 1.0          12.00       20.00      194.77       84.89         4.10
SRCPARAM TW007003 1.0          12.00       20.00      194.77       84.89         4.10
SRCPARAM TW008001 1.0          12.00       20.00      192.05       82.71         4.10
SRCPARAM TW008002 1.0          12.00       20.00      192.05       82.71         4.10
SRCPARAM TW008003 1.0          12.00       20.00      192.05       82.71         4.10
SRCPARAM TW008004 1.0          12.00       20.00      192.05       82.71         4.10
SRCPARAM TW008005 1.0          12.00       20.00      192.05       82.71         4.10
SRCPARAM TW008006 1.0          12.00       20.00      192.05       82.71         4.10
SRCPARAM TW008007 1.0          12.00       20.00      192.05       82.71         4.10
SRCPARAM TW008008 1.0          12.00       20.00      192.05       82.71         4.10
SRCPARAM TW009001 1.0          12.00       20.00      180.08       83.17         4.10
SRCPARAM TW009002 1.0          12.00       20.00      180.08       83.17         4.10
```

Table L.2-1
AERMOD Input File for 2005 SAIP Diesel PM Run

```
SRCPARAM TW009003 1.0            12.00      20.00     180.08      83.17       4.10
SRCPARAM TW009004 1.0            12.00      20.00     180.08      83.17       4.10
SRCPARAM TW009005 1.0            12.00      20.00     180.08      83.17       4.10
SRCPARAM TW010001 1.0            12.00      20.00     179.53      83.16       4.10
SRCPARAM TW010002 1.0            12.00      20.00     179.53      83.16       4.10
SRCPARAM TW010003 1.0            12.00      20.00     179.53      83.16       4.10
SRCPARAM TW010004 1.0            12.00      20.00     179.53      83.16       4.10
SRCPARAM TW010005 1.0            12.00      20.00     179.53      83.16       4.10
SRCPARAM TW010006 1.0            12.00      20.00     179.53      83.16       4.10
SRCPARAM TW010007 1.0            12.00      20.00     179.53      83.16       4.10
SRCPARAM TW010008 1.0            12.00      20.00     179.53      83.16       4.10
SRCPARAM TW011001 1.0            12.00      20.00     192.50      83.57       4.10
SRCPARAM TW011002 1.0            12.00      20.00     192.50      83.57       4.10
SRCPARAM TW011003 1.0            12.00      20.00     192.50      83.57       4.10
SRCPARAM TW011004 1.0            12.00      20.00     192.50      83.57       4.10
SRCPARAM TW011005 1.0            12.00      20.00     192.50      83.57       4.10
SRCPARAM TW011006 1.0            12.00      20.00     192.50      83.57       4.10
SRCPARAM TW011007 1.0            12.00      20.00     192.50      83.57       4.10
SRCPARAM TW012001 1.0            12.00      20.00     178.81      -5.46       4.10
SRCPARAM TW012002 1.0            12.00      20.00     178.81      -5.46       4.10
SRCPARAM QU25R001 1.0            12.00      20.00     175.09     -88.12       4.10
SRCPARAM QU25R002 1.0            12.00      20.00     175.09     -88.12       4.10
SRCPARAM QU25R003 1.0            12.00      20.00     175.09     -88.12       4.10
SRCPARAM QU25R004 1.0            12.00      20.00     175.09     -88.12       4.10
SRCPARAM RW07L001 1.0            12.00      20.00      49.79      83.17       4.10
SRCPARAM RW07L002 1.0            12.00      20.00      49.79      83.17       4.10
SRCPARAM RW07L003 1.0            12.00      20.00      49.79      83.17       4.10
SRCPARAM RW07L004 1.0            12.00      20.00      49.79      83.17       4.10
SRCPARAM RW07L005 1.0            12.00      20.00      49.79      83.17       4.10
SRCPARAM RW07L006 1.0            12.00      20.00      49.79      83.17       4.10
SRCPARAM RW07L007 1.0            12.00      20.00      49.79      83.17       4.10
SRCPARAM RW07L008 1.0            12.00      20.00      49.79      83.17       4.10
SRCPARAM RW07L009 1.0            12.00      20.00      49.79      83.17       4.10
SRCPARAM RW07L010 1.0            12.00      20.00      49.79      83.17       4.10
SRCPARAM RW07L011 1.0            12.00      20.00      49.79      83.17       4.10
SRCPARAM RW07L012 1.0            12.00      20.00      49.79      83.17       4.10
SRCPARAM RW07L013 1.0            12.00      20.00      49.79      83.17       4.10
SRCPARAM RW07L014 1.0            12.00      20.00      49.79      83.17       4.10
SRCPARAM RW07L015 1.0            12.00      20.00      49.79      83.17       4.10
SRCPARAM RW07L016 1.0            12.00      20.00      49.79      83.17       4.10
SRCPARAM RW07L017 1.0            12.00      20.00      49.79      83.17       4.10
SRCPARAM RW07L018 1.0            12.00      20.00      49.79      83.17       4.10
SRCPARAM RW07L019 1.0            12.00      20.00      49.79      83.17       4.10
SRCPARAM RW07L020 1.0            12.00      20.00      49.79      83.17       4.10
SRCPARAM RW07L021 1.0            12.00      20.00      49.79      83.17       4.10
SRCPARAM RW07L022 1.0            12.00      20.00      49.79      83.17       4.10
SRCPARAM RW07L023 1.0            12.00      20.00      49.79      83.17       4.10
SRCPARAM RW07L024 1.0            12.00      20.00      49.79      83.17       4.10
SRCPARAM RW07L025 1.0            12.00      20.00      49.79      83.17       4.10
SRCPARAM RW07L026 1.0            12.00      20.00      49.79      83.17       4.10
SRCPARAM RW07L027 1.0            12.00      20.00      49.79      83.17       4.10
SRCPARAM RW07L028 1.0            12.00      20.00      49.79      83.17       4.10
SRCPARAM RW07L029 1.0            12.00      20.00      49.79      83.17       4.10
SRCPARAM RW07L030 1.0            12.00      20.00      49.79      83.17       4.10
SRCPARAM RW07L031 1.0            12.00      20.00      49.79      83.17       4.10
SRCPARAM RW07L032 1.0            12.00      20.00      49.79      83.17       4.10
SRCPARAM RW07L033 1.0            12.00      20.00      49.79      83.17       4.10
SRCPARAM RW07L034 1.0            12.00      20.00      49.79      83.17       4.10
SRCPARAM RW07L035 1.0            12.00      20.00      49.79      83.17       4.10
SRCPARAM RW07L036 1.0            12.00      20.00      49.79      83.17       4.10
SRCPARAM RW07L037 1.0            12.00      20.00      49.79      83.17       4.10
SRCPARAM RW07L038 1.0            12.00      20.00      49.79      83.17       4.10
SRCPARAM RW07L039 1.0            12.00      20.00      49.79      83.17       4.10
SRCPARAM RW07L040 1.0            12.00      20.00      49.79      83.17       4.10
SRCPARAM RW07L041 1.0            12.00      20.00      49.79      83.17       4.10
SRCPARAM RW07L042 1.0            12.00      20.00      49.79      83.17       4.10
SRCPARAM RW07L043 1.0            12.00      20.00      49.79      83.17       4.10
SRCPARAM RW07L044 1.0            12.00      20.00      49.79      83.17       4.10
SRCPARAM RW07L045 1.0            12.00      20.00      49.79      83.17       4.10
SRCPARAM RW07L046 1.0            12.00      20.00      49.79      83.17       4.10
SRCPARAM RW07L047 1.0            12.00      20.00      49.79      83.17       4.10
```

Table L.2-1
AERMOD Input File for 2005 SAIP Diesel PM Run

SRCPARAM	RW07L048	1.0	12.00	20.00	49.79	83.17	4.10
SRCPARAM	RW07L049	1.0	12.00	20.00	49.79	83.17	4.10
SRCPARAM	RW07L050	1.0	12.00	20.00	49.79	83.17	4.10
SRCPARAM	RW07L051	1.0	12.00	20.00	49.79	83.17	4.10
SRCPARAM	RW07L052	1.0	12.00	20.00	49.79	83.17	4.10
SRCPARAM	RW07L053	1.0	12.00	20.00	49.79	83.17	4.10
SRCPARAM	RW07L054	1.0	12.00	20.00	49.79	83.17	4.10
SRCPARAM	RW07L055	1.0	12.00	20.00	49.79	83.17	4.10
SRCPARAM	RW07L056	1.0	12.00	20.00	49.79	83.17	4.10
SRCPARAM	RW07L057	1.0	12.00	20.00	49.79	83.17	4.10
SRCPARAM	RW07L058	1.0	12.00	20.00	49.79	83.17	4.10
SRCPARAM	RW07L059	1.0	12.00	20.00	49.79	83.17	4.10
SRCPARAM	RW07L060	1.0	12.00	20.00	49.79	83.17	4.10
SRCPARAM	RW07L061	1.0	12.00	20.00	49.79	83.17	4.10
SRCPARAM	RW07L062	1.0	12.00	20.00	49.79	83.17	4.10
SRCPARAM	RW07L063	1.0	12.00	20.00	49.79	83.17	4.10
SRCPARAM	RW07L064	1.0	12.00	20.00	49.79	83.17	4.10
SRCPARAM	RW07L065	1.0	12.00	20.00	49.79	83.17	4.10
SRCPARAM	RW07L066	1.0	12.00	20.00	49.79	83.17	4.10
SRCPARAM	RW07L067	1.0	12.00	20.00	49.79	83.17	4.10
SRCPARAM	RW07L068	1.0	12.00	20.00	49.79	83.17	4.10
SRCPARAM	RW07L069	1.0	12.00	20.00	49.79	83.17	4.10
SRCPARAM	RW07L070	1.0	12.00	20.00	49.79	83.17	4.10
SRCPARAM	RW07L071	1.0	12.00	20.00	49.79	83.17	4.10
SRCPARAM	RW07L072	1.0	12.00	20.00	49.79	83.17	4.10
SRCPARAM	RW07L073	1.0	12.00	20.00	49.79	83.17	4.10
SRCPARAM	RW07L074	1.0	12.00	20.00	49.79	83.17	4.10
SRCPARAM	DS25R002	1.0	14.35	20.00	30.92	-96.83	4.10
SRCPARAM	DS25R003	1.0	16.05	20.00	183.35	-96.83	4.12
SRCPARAM	DS25R004	1.0	16.00	20.00	118.06	-96.83	4.10
SRCPARAM	DS25R005	1.0	16.00	20.00	69.42	-96.83	4.10
SRCPARAM	DS25R007	1.0	15.47	20.00	161.29	-96.83	4.20
SRCPARAM	DS25R008	1.0	15.75	20.00	200.00	-96.83	4.13
SRCPARAM	DS25R009	1.0	18.26	20.00	200.00	-96.83	4.45
SRCPARAM	DS25R010	1.0	15.91	20.00	200.00	-96.83	4.11
SRCPARAM	DS25R011	1.0	16.13	20.00	125.95	-96.83	4.14
SRCPARAM	DS25R012	1.0	13.34	20.00	22.77	-96.83	4.10
SRCPARAM	DS25R013	1.0	17.34	20.00	45.07	-96.83	4.10
SRCPARAM	DS25R014	1.0	16.00	20.00	138.38	-96.83	4.10
SRCPARAM	DS25R015	1.0	15.55	20.00	168.19	-96.83	4.24
SRCPARAM	DS25R016	1.0	16.94	20.00	58.49	-96.83	4.10
SRCPARAM	DS25R039	1.0	24.08	20.00	184.55	-96.83	5.39
SRCPARAM	DS25R040	1.0	31.29	20.00	200.00	-96.83	4.59
SRCPARAM	DS25R041	1.0	32.50	20.00	200.00	-96.83	4.81
SRCPARAM	DS25R042	1.0	37.28	20.00	47.13	-96.83	4.10
SRCPARAM	DS25R043	1.0	29.41	20.00	118.98	-96.83	4.10
SRCPARAM	DS25R044	1.0	27.71	20.00	200.00	-96.83	5.86
SRCPARAM	DS25R045	1.0	30.26	20.00	200.00	-96.83	4.30
SRCPARAM	DS25R046	1.0	26.78	20.00	200.00	-96.83	5.47
SRCPARAM	DS25R047	1.0	29.26	20.00	200.00	-96.83	4.89
SRCPARAM	DS25R048	1.0	35.91	20.00	67.95	-96.83	4.10
SRCPARAM	DS25R049	1.0	29.13	20.00	154.93	-96.83	4.10
SRCPARAM	DS25R050	1.0	26.37	20.00	200.00	-96.83	6.02
SRCPARAM	DS25R051	1.0	30.13	20.00	200.00	-96.83	5.80
SRCPARAM	DS25R052	1.0	30.97	20.00	200.00	-96.83	5.92
SRCPARAM	DS25R053	1.0	37.42	20.00	49.23	-96.83	4.10
SRCPARAM	DS25R075	1.0	48.83	20.00	90.18	-96.83	4.57
SRCPARAM	DS25R076	1.0	43.57	20.00	200.00	-96.83	5.23
SRCPARAM	DS25R077	1.0	51.91	20.00	188.23	-96.83	4.21
SRCPARAM	DS25R078	1.0	48.81	20.00	152.87	-96.83	4.10
SRCPARAM	DS25R079	1.0	48.63	20.00	200.00	-96.83	9.59
SRCPARAM	DS25R080	1.0	48.89	20.00	200.00	-96.83	4.45
SRCPARAM	DS25R081	1.0	48.93	20.00	200.00	-96.83	4.38
SRCPARAM	DS25R082	1.0	55.47	20.00	200.00	-96.83	5.71
SRCPARAM	DS25R083	1.0	47.16	20.00	200.00	-96.83	4.68
SRCPARAM	DS25R084	1.0	51.68	20.00	200.00	-96.83	4.95
SRCPARAM	DS25R085	1.0	58.18	20.00	29.41	-96.83	4.10
SRCPARAM	DS25R086	1.0	50.00	20.00	169.61	-96.83	4.10
SRCPARAM	DS25R087	1.0	47.12	20.00	123.90	-96.83	4.26
SRCPARAM	DS25R088	1.0	50.65	20.00	200.00	-96.83	5.53
SRCPARAM	DS25R089	1.0	50.20	20.00	200.00	-96.83	5.90

Table L.2-1
AERMOD Input File for 2005 SAIP Diesel PM Run

```
SRCPARAM DS25R090 1.0          57.90      20.00      39.96      -96.83         4.10
SRCPARAM DS25R112 1.0          69.07      20.00     195.81      -96.83         4.46
SRCPARAM DS25R113 1.0          64.34      20.00     200.00      -96.83         5.51
SRCPARAM DS25R114 1.0          72.26      20.00     144.47      -96.83         4.14
SRCPARAM DS25R115 1.0          70.00      20.00     173.55      -96.83         4.10
SRCPARAM DS25R116 1.0          70.00      20.00     107.34      -96.83         4.10
SRCPARAM DS25R117 1.0          66.94      20.00     161.95      -96.83         5.28
SRCPARAM DS25R118 1.0          70.39      20.00     200.00      -96.83         4.26
SRCPARAM DS25R119 1.0          66.09      20.00     200.00      -96.83         5.38
SRCPARAM DS25R120 1.0          69.16      20.00     200.00      -96.83         4.98
SRCPARAM DS25R121 1.0          72.04      20.00     190.86      -96.83         4.53
SRCPARAM DS25R122 1.0          60.93      20.00      15.71      -96.83         4.10
SRCPARAM DS25R123 1.0          70.93      20.00     153.89      -96.83         4.10
SRCPARAM DS25R124 1.0          69.25      20.00     164.92      -96.83         4.32
SRCPARAM DS25R125 1.0          70.61      20.00     200.00      -96.83         4.59
SRCPARAM DS25R126 1.0          68.50      20.00     200.00      -96.83         4.15
SRCPARAM DS25R127 1.0          78.39      20.00      30.70      -96.83         4.10
SRCPARAM DS25R148 1.0          90.00      20.00      94.37      -96.83         4.10
SRCPARAM DS25R149 1.0          88.12      20.00     174.40      -96.83         4.52
SRCPARAM DS25R150 1.0          85.92      20.00     200.00      -96.83         5.23
SRCPARAM DS25R151 1.0          94.20      20.00     200.00      -96.83         4.31
SRCPARAM DS25R152 1.0          83.57      20.00     200.00      -96.83         4.76
SRCPARAM DS25R153 1.0          90.10      20.00     200.00      -96.83         5.44
SRCPARAM DS25R154 1.0          88.25      20.00     200.00      -96.83         4.56
SRCPARAM DS25R155 1.0          95.06      20.00     200.00      -96.83         5.51
SRCPARAM DS25R156 1.0          87.05      20.00     200.00      -96.83         5.14
SRCPARAM DS25R157 1.0          89.96      20.00     200.00      -96.83         4.74
SRCPARAM DS25R158 1.0          94.31      20.00     152.31      -96.83         5.54
SRCPARAM DS25R159 1.0          82.72      20.00      46.11      -96.83         4.10
SRCPARAM DS25R160 1.0          92.08      20.00     200.00      -96.83         4.82
SRCPARAM DS25R161 1.0          89.46      20.00     200.00      -96.83         4.75
SRCPARAM DS25R162 1.0          90.74      20.00     200.00      -96.83         4.34
SRCPARAM DS25R163 1.0          88.99      20.00     200.00      -96.83         4.15
SRCPARAM DS25R164 1.0          98.88      20.00      21.44      -96.83         4.10
SRCPARAM DS25R184 1.0         100.75      20.00       7.08      -96.83         4.10
SRCPARAM DS25R185 1.0         109.29      20.00     200.00      -96.83         4.90
SRCPARAM DS25R186 1.0         111.05      20.00     124.17      -96.83         4.50
SRCPARAM DS25R187 1.0         109.20      20.00     180.53      -96.83         4.12
SRCPARAM DS25R188 1.0         117.43      20.00     200.00      -96.83         6.38
SRCPARAM DS25R189 1.0         110.01      20.00     200.00      -96.83         4.12
SRCPARAM DS25R190 1.0         107.02      20.00     200.00      -96.83         5.17
SRCPARAM DS25R191 1.0         110.42      20.00     183.54      -96.83         4.27
SRCPARAM DS25R192 1.0         110.00      20.00     160.91      -96.83         4.10
SRCPARAM DS25R193 1.0         107.80      20.00     183.60      -96.83         4.93
SRCPARAM DS25R194 1.0         111.23      20.00     200.00      -96.83         4.86
SRCPARAM DS25R195 1.0         112.95      20.00     113.77      -96.83         4.10
SRCPARAM DS25R196 1.0         104.51      20.00      76.50      -96.83         4.10
SRCPARAM DS25R197 1.0         110.28      20.00     200.00      -96.83         6.82
SRCPARAM DS25R198 1.0         109.42      20.00     200.00      -96.83         5.86
SRCPARAM DS25R199 1.0         112.54      20.00     200.00      -96.83         4.22
SRCPARAM DS25R200 1.0         109.46      20.00     200.00      -96.83         4.15
SRCPARAM DS25R201 1.0         119.36      20.00      12.18      -96.83         4.10
SRCPARAM DS25R221 1.0         130.00      20.00      94.37      -96.83         4.10
SRCPARAM DS25R222 1.0         128.64      20.00     161.49      -96.83         4.16
SRCPARAM DS25R223 1.0         127.21      20.00     200.00      -96.83         5.87
SRCPARAM DS25R224 1.0         130.60      20.00     146.82      -96.83         4.45
SRCPARAM DS25R225 1.0         125.99      20.00      58.65      -96.83         4.12
SRCPARAM DS25R226 1.0         131.04      20.00     200.00      -96.83         7.12
SRCPARAM DS25R227 1.0         127.74      20.00     200.00      -96.83         4.68
SRCPARAM DS25R228 1.0         134.17      20.00     200.00      -96.83         5.42
SRCPARAM DS25R229 1.0         124.90      20.00     200.00      -96.83         5.80
SRCPARAM DS25R230 1.0         128.83      20.00     200.00      -96.83         5.23
SRCPARAM DS25R231 1.0         133.50      20.00     200.00      -96.83         5.31
SRCPARAM DS25R232 1.0         135.34      20.00      75.22      -96.83         4.10
SRCPARAM DS25R233 1.0         126.30      20.00     106.89      -96.83         4.10
SRCPARAM DS25R234 1.0         129.50      20.00     200.00      -96.83         6.85
SRCPARAM DS25R235 1.0         129.30      20.00     200.00      -96.83         5.97
SRCPARAM DS25R236 1.0         134.36      20.00     200.00      -96.83         4.40
SRCPARAM DS25R237 1.0         129.94      20.00     200.00      -96.83         4.15
SRCPARAM DS25R238 1.0         139.85      20.00       2.92      -96.83         4.10
SRCPARAM DS25R257 1.0         141.94      20.00      18.35      -96.83         4.10
```

Table L.2-1
AERMOD Input File for 2005 SAIP Diesel PM Run

```
SRCPARAM DS25R258 1.0          150.98      20.00     200.00     -96.83          4.46
SRCPARAM DS25R259 1.0          150.35      20.00     162.68     -96.83          4.41
SRCPARAM DS25R260 1.0          146.43      20.00     149.29     -96.83          5.05
SRCPARAM DS25R261 1.0          154.00      20.00      79.85     -96.83          4.10
SRCPARAM DS25R262 1.0          149.83      20.00     166.09     -96.83          4.17
SRCPARAM DS25R263 1.0          147.30      20.00     200.00     -96.83          5.03
SRCPARAM DS25R264 1.0          150.30      20.00     200.00     -96.83          4.35
SRCPARAM DS25R265 1.0          151.74      20.00     192.88     -96.83          5.41
SRCPARAM DS25R266 1.0          149.08      20.00     127.26     -96.83          4.45
SRCPARAM DS25R267 1.0          150.28      20.00     198.69     -96.83          4.29
SRCPARAM DS25R268 1.0          147.73      20.00     124.78     -96.83          4.10
SRCPARAM DS25R269 1.0          157.73      20.00      36.68     -96.83          4.10
SRCPARAM DS25R270 1.0          147.92      20.00     137.28     -96.83          4.25
SRCPARAM DS25R271 1.0          148.75      20.00     200.00     -96.83          6.17
SRCPARAM DS25R272 1.0          149.86      20.00     200.00     -96.83          5.83
SRCPARAM DS25R273 1.0          155.77      20.00     200.00     -96.83          4.91
SRCPARAM DS25R274 1.0          150.08      20.00     193.65     -96.83          4.16
SRCPARAM DS25R294 1.0          170.00      20.00      94.37     -96.83          4.10
SRCPARAM DS25R295 1.0          169.49      20.00     179.43     -96.83          4.50
SRCPARAM DS25R296 1.0          165.23      20.00     200.00     -96.83          5.86
SRCPARAM DS25R297 1.0          169.71      20.00     200.00     -96.83          4.36
SRCPARAM DS25R298 1.0          169.98      20.00     200.00     -96.83          4.72
SRCPARAM DS25R299 1.0          167.45      20.00     200.00     -96.83          7.98
SRCPARAM DS25R300 1.0          167.37      20.00     200.00     -96.83          4.75
SRCPARAM DS25R301 1.0          173.52      20.00     200.00     -96.83          5.24
SRCPARAM DS25R302 1.0          171.41      20.00     200.00     -96.83          5.92
SRCPARAM DS25R303 1.0          167.98      20.00     200.00     -96.83          5.06
SRCPARAM DS25R304 1.0          171.28      20.00     123.36     -96.83          4.48
SRCPARAM DS25R305 1.0          170.00      20.00     161.45     -96.83          4.10
SRCPARAM DS25R307 1.0          169.37      20.00     167.67     -96.83          4.35
SRCPARAM DS25R308 1.0          168.69      20.00     200.00     -96.83          4.85
SRCPARAM DS25R309 1.0          170.49      20.00     200.00     -96.83          5.25
SRCPARAM DS25R310 1.0          173.23      20.00     200.00     -96.83          7.72
SRCPARAM DS25R311 1.0          170.40      20.00     184.39     -96.83          4.16
SRCPARAM DS25R330 1.0          183.14      20.00      29.62     -96.83          4.10
SRCPARAM DS25R331 1.0          191.28      20.00     200.00     -96.83          5.26
SRCPARAM DS25R332 1.0          190.08      20.00     200.00     -96.83          4.36
SRCPARAM DS25R333 1.0          190.21      20.00     197.58     -96.83          4.29
SRCPARAM DS25R334 1.0          190.00      20.00     133.02     -96.83          4.10
SRCPARAM DS25R335 1.0          189.89      20.00     194.63     -96.83          4.15
SRCPARAM DS25R336 1.0          187.41      20.00     200.00     -96.83          4.80
SRCPARAM DS25R337 1.0          190.12      20.00     200.00     -96.83          4.54
SRCPARAM DS25R338 1.0          192.80      20.00     198.04     -96.83          5.16
SRCPARAM DS25R339 1.0          186.31      20.00      82.51     -96.83          4.32
SRCPARAM DS25R340 1.0          188.72      20.00     200.00     -96.83          5.33
SRCPARAM DS25R341 1.0          195.96      20.00     200.00     -96.83          4.22
SRCPARAM DS25R342 1.0          190.11      20.00     159.58     -96.83          4.10
SRCPARAM DS25R344 1.0          189.96      20.00     198.07     -96.83          4.10
SRCPARAM DS25R345 1.0          189.73      20.00     200.00     -96.83          4.23
SRCPARAM DS25R346 1.0          190.18      20.00     200.00     -96.83          4.39
SRCPARAM DS25R347 1.0          186.23      20.00     200.00     -96.83          6.37
SRCPARAM DS25R348 1.0          190.87      20.00     175.13     -96.83          4.15
SRCPARAM DS25R367 1.0          210.00      20.00      94.37     -96.83          4.10
SRCPARAM DS25R368 1.0          210.00      20.00     170.83     -96.83          4.10
SRCPARAM DS25R369 1.0          208.58      20.00     168.78     -96.83          5.36
SRCPARAM DS25R370 1.0          206.50      20.00     200.00     -96.83          5.08
SRCPARAM DS25R371 1.0          211.13      20.00     176.82     -96.83          4.49
SRCPARAM DS25R372 1.0          205.12      20.00     159.89     -96.83          6.19
SRCPARAM DS25R373 1.0          206.91      20.00     200.00     -96.83          4.93
SRCPARAM DS25R374 1.0          213.28      20.00     200.00     -96.83          4.68
SRCPARAM DS25R375 1.0          210.66      20.00     112.17     -96.83          4.45
SRCPARAM DS25R376 1.0          209.46      20.00     169.36     -96.83          4.28
SRCPARAM DS25R377 1.0          210.16      20.00     198.86     -96.83          4.23
SRCPARAM DS25R378 1.0          202.50      20.00      40.42     -96.83          4.10
SRCPARAM DS25R379 1.0          212.50      20.00     121.04     -96.83          4.10
SRCPARAM DS25R380 1.0          201.68      20.00      28.46     -96.83          4.10
SRCPARAM DS25R381 1.0          210.95      20.00     200.00     -96.83          4.59
SRCPARAM DS25R382 1.0          209.09      20.00     200.00     -96.83          5.08
SRCPARAM DS25R383 1.0          211.20      20.00     200.00     -96.83          4.22
SRCPARAM DS25R384 1.0          205.52      20.00     200.00     -96.83          6.14
SRCPARAM DS25R385 1.0          211.34      20.00     165.87     -96.83          4.13
```

Table L.2-1
AERMOD Input File for 2005 SAIP Diesel PM Run

SRCPARAM	DS25R403	1.0	224.33	20.00	40.89	-96.83	4.10
SRCPARAM	DS25R404	1.0	230.16	20.00	200.00	-96.83	6.24
SRCPARAM	DS25R405	1.0	231.77	20.00	200.00	-96.83	5.26
SRCPARAM	DS25R406	1.0	228.06	20.00	200.00	-96.83	4.39
SRCPARAM	DS25R407	1.0	227.60	20.00	200.00	-96.83	5.50
SRCPARAM	DS25R408	1.0	232.94	20.00	200.00	-96.83	4.63
SRCPARAM	DS25R409	1.0	227.30	20.00	200.00	-96.83	4.51
SRCPARAM	DS25R410	1.0	230.14	20.00	200.00	-96.83	4.73
SRCPARAM	DS25R411	1.0	231.79	20.00	200.00	-96.83	4.95
SRCPARAM	DS25R412	1.0	225.01	20.00	200.00	-96.83	5.26
SRCPARAM	DS25R413	1.0	227.93	20.00	200.00	-96.83	6.17
SRCPARAM	DS25R414	1.0	231.94	20.00	139.00	-96.83	4.43
SRCPARAM	DS25R415	1.0	224.89	20.00	78.96	-96.83	4.10
SRCPARAM	DS25R416	1.0	234.89	20.00	82.49	-96.83	4.10
SRCPARAM	DS25R417	1.0	223.65	20.00	58.91	-96.83	4.11
SRCPARAM	DS25R418	1.0	230.68	20.00	200.00	-96.83	6.40
SRCPARAM	DS25R419	1.0	229.17	20.00	200.00	-96.83	5.79
SRCPARAM	DS25R420	1.0	233.32	20.00	200.00	-96.83	4.22
SRCPARAM	DS25R421	1.0	225.24	20.00	200.00	-96.83	5.89
SRCPARAM	DS25R422	1.0	231.79	20.00	156.61	-96.83	4.10
SRCPARAM	DS25R440	1.0	249.59	20.00	146.52	-96.83	4.48
SRCPARAM	DS25R441	1.0	250.32	20.00	153.19	-96.83	4.15
SRCPARAM	DS25R442	1.0	247.46	20.00	100.24	-96.83	4.10
SRCPARAM	DS25R443	1.0	250.23	20.00	144.45	-96.83	4.30
SRCPARAM	DS25R444	1.0	250.00	20.00	136.34	-96.83	4.10
SRCPARAM	DS25R445	1.0	250.00	20.00	107.25	-96.83	4.10
SRCPARAM	DS25R446	1.0	246.66	20.00	192.15	-96.83	5.18
SRCPARAM	DS25R447	1.0	252.66	20.00	200.00	-96.83	4.45
SRCPARAM	DS25R448	1.0	250.47	20.00	140.63	-96.83	4.47
SRCPARAM	DS25R449	1.0	248.92	20.00	143.06	-96.83	4.65
SRCPARAM	DS25R450	1.0	248.67	20.00	200.00	-96.83	4.73
SRCPARAM	DS25R451	1.0	255.82	20.00	79.15	-96.83	4.53
SRCPARAM	DS25R452	1.0	247.28	20.00	117.51	-96.83	4.10
SRCPARAM	DS25R453	1.0	257.28	20.00	43.95	-96.83	4.10
SRCPARAM	DS25R454	1.0	246.24	20.00	120.66	-96.83	4.39
SRCPARAM	DS25R455	1.0	249.59	20.00	200.00	-96.83	6.93
SRCPARAM	DS25R456	1.0	249.63	20.00	200.00	-96.83	5.95
SRCPARAM	DS25R457	1.0	255.48	20.00	200.00	-96.83	4.21
SRCPARAM	DS25R458	1.0	245.03	20.00	200.00	-96.83	5.56
SRCPARAM	DS25R459	1.0	252.28	20.00	147.34	-96.83	4.10
SRCPARAM	DS25R476	1.0	265.53	20.00	52.15	-96.83	4.10
SRCPARAM	DS25R477	1.0	269.82	20.00	200.00	-96.83	6.08
SRCPARAM	DS25R478	1.0	275.21	20.00	43.05	-96.83	4.10
SRCPARAM	DS25R479	1.0	265.87	20.00	165.97	-96.83	4.60
SRCPARAM	DS25R480	1.0	266.34	20.00	200.00	-96.83	5.00
SRCPARAM	DS25R481	1.0	274.86	20.00	200.00	-96.83	4.52
SRCPARAM	DS25R482	1.0	267.08	20.00	200.00	-96.83	4.24
SRCPARAM	DS25R483	1.0	270.37	20.00	200.00	-96.83	4.75
SRCPARAM	DS25R484	1.0	270.39	20.00	200.00	-96.83	4.74
SRCPARAM	DS25R485	1.0	266.05	20.00	200.00	-96.83	7.11
SRCPARAM	DS25R486	1.0	270.30	20.00	200.00	-96.83	4.43
SRCPARAM	DS25R487	1.0	269.82	20.00	200.00	-96.83	4.29
SRCPARAM	DS25R488	1.0	278.62	20.00	19.29	-96.83	4.10
SRCPARAM	DS25R489	1.0	269.66	20.00	156.05	-96.83	4.10
SRCPARAM	DS25R490	1.0	279.67	20.00	5.40	-96.83	4.10
SRCPARAM	DS25R491	1.0	267.79	20.00	182.40	-96.83	4.29
SRCPARAM	DS25R492	1.0	269.15	20.00	200.00	-96.83	6.21
SRCPARAM	DS25R493	1.0	270.19	20.00	200.00	-96.83	5.66
SRCPARAM	DS25R494	1.0	277.51	20.00	200.00	-96.83	4.44
SRCPARAM	DS25R495	1.0	264.93	20.00	200.00	-96.83	5.28
SRCPARAM	DS25R496	1.0	272.79	20.00	138.08	-96.83	4.13
SRCPARAM	DS25R513	1.0	291.67	20.00	157.79	-96.83	4.76
SRCPARAM	DS25R514	1.0	293.01	20.00	154.47	-96.83	4.32
SRCPARAM	DS25R515	1.0	282.36	20.00	31.70	-96.83	4.10
SRCPARAM	DS25R516	1.0	292.35	20.00	200.00	-96.83	4.17
SRCPARAM	DS25R517	1.0	291.39	20.00	200.00	-96.83	4.42
SRCPARAM	DS25R518	1.0	299.54	20.00	200.00	-96.83	5.63
SRCPARAM	DS25R519	1.0	288.54	20.00	200.00	-96.83	6.28
SRCPARAM	DS25R520	1.0	294.02	20.00	200.00	-96.83	4.75
SRCPARAM	DS25R521	1.0	296.46	20.00	196.49	-96.83	5.86
SRCPARAM	DS25R522	1.0	288.71	20.00	116.76	-96.83	4.55

Table L.2-1
AERMOD Input File for 2005 SAIP Diesel PM Run

```
SRCPARAM DS25R523 1.0            288.86       20.00      200.00      -96.83         7.20
SRCPARAM DS25R524 1.0            295.23       20.00      193.07      -96.83         4.62
SRCPARAM DS25R526 1.0            292.05       20.00      194.60      -96.83         4.10
SRCPARAM DS25R527 1.0            284.77       20.00      200.00      -96.83         6.92
SRCPARAM DS25R528 1.0            290.18       20.00      200.00      -96.83         4.90
SRCPARAM DS25R529 1.0            291.55       20.00      200.00      -96.83         6.79
SRCPARAM DS25R530 1.0            292.66       20.00      200.00      -96.83         6.31
SRCPARAM DS25R531 1.0            301.84       20.00      200.00      -96.83         4.97
SRCPARAM DS25R532 1.0            285.30       20.00      200.00      -96.83         5.44
SRCPARAM DS25R533 1.0            295.82       20.00      174.60      -96.83         4.23
SRCPARAM AS25R001 1.0             16.00       20.00      152.66      -96.83         4.10
SRCPARAM AS25R037 1.0             21.26       20.00       57.60      -96.83         4.10
SRCPARAM AS25R038 1.0             27.76       20.00      200.00      -96.83         4.11
SRCPARAM AS25R039 1.0             36.50       20.00      136.68      -96.83         4.10
SRCPARAM AS25R075 1.0             41.78       20.00      100.39      -96.83         4.11
SRCPARAM AS25R076 1.0             48.78       20.00      200.00      -96.83         4.13
SRCPARAM AS25R077 1.0             56.99       20.00      118.47      -96.83         4.10
SRCPARAM AS25R113 1.0             62.31       20.00      142.50      -96.83         4.12
SRCPARAM AS25R114 1.0             69.79       20.00      200.00      -96.83         4.16
SRCPARAM AS25R115 1.0             77.46       20.00       99.89      -96.83         4.10
SRCPARAM AS25R151 1.0             82.84       20.00      184.60      -96.83         4.14
SRCPARAM AS25R152 1.0             90.76       20.00      200.00      -96.83         4.18
SRCPARAM AS25R153 1.0             97.93       20.00       81.31      -96.83         4.10
SRCPARAM AS25R188 1.0            100.75       20.00       26.71      -96.83         4.10
SRCPARAM AS25R189 1.0            103.40       20.00      200.00      -96.83         4.20
SRCPARAM AS25R190 1.0            111.69       20.00      200.00      -96.83         4.16
SRCPARAM AS25R191 1.0            118.41       20.00       62.73      -96.83         4.10
SRCPARAM AS25R226 1.0            121.92       20.00       68.81      -96.83         4.10
SRCPARAM AS25R227 1.0            123.95       20.00      200.00      -96.83         4.29
SRCPARAM AS25R228 1.0            132.62       20.00      200.00      -96.83         4.15
SRCPARAM AS25R229 1.0            138.89       20.00       44.14      -96.83         4.10
SRCPARAM AS25R264 1.0            143.10       20.00      110.92      -96.83         4.10
SRCPARAM AS25R265 1.0            144.48       20.00      200.00      -96.83         4.40
SRCPARAM AS25R266 1.0            153.55       20.00      200.00      -96.83         4.13
SRCPARAM AS25R267 1.0            159.37       20.00       25.56      -96.83         4.10
SRCPARAM AS25R302 1.0            164.28       20.00      153.02      -96.83         4.10
SRCPARAM AS25R303 1.0            165.00       20.00      200.00      -96.83         4.51
SRCPARAM AS25R304 1.0            174.47       20.00      200.00      -96.83         4.10
SRCPARAM AS25R305 1.0            179.85       20.00        6.98      -96.83         4.10
SRCPARAM AS25R340 1.0            185.45       20.00      195.13      -96.83         4.10
SRCPARAM AS25R341 1.0            185.41       20.00      200.00      -96.83         4.47
SRCPARAM AS25R342 1.0            195.09       20.00      188.40      -96.83         4.10
SRCPARAM AS25R377 1.0            201.04       20.00       37.23      -96.83         4.10
SRCPARAM AS25R378 1.0            203.05       20.00      200.00      -96.83         5.42
SRCPARAM AS25R379 1.0            206.15       20.00      200.00      -96.83         4.39
SRCPARAM AS25R380 1.0            215.58       20.00      169.82      -96.83         4.10
SRCPARAM AS25R415 1.0            222.22       20.00       79.34      -96.83         4.10
SRCPARAM AS25R416 1.0            222.61       20.00      200.00      -96.83         5.49
SRCPARAM AS25R417 1.0            227.03       20.00      200.00      -96.83         4.30
SRCPARAM AS25R418 1.0            236.06       20.00      151.24      -96.83         4.10
SRCPARAM AS25R453 1.0            243.39       20.00      121.44      -96.83         4.10
SRCPARAM AS25R454 1.0            242.76       20.00      200.00      -96.83         5.56
SRCPARAM AS25R455 1.0            247.91       20.00      200.00      -96.83         4.20
SRCPARAM AS25R456 1.0            256.54       20.00      132.66      -96.83         4.10
SRCPARAM AS25R491 1.0            264.57       20.00      163.55      -96.83         4.10
SRCPARAM AS25R492 1.0            263.02       20.00      200.00      -96.83         5.58
SRCPARAM AS25R493 1.0            268.80       20.00      200.00      -96.83         4.10
SRCPARAM AS25R494 1.0            277.02       20.00      114.08      -96.83         4.10
SRCPARAM AS25R528 1.0            280.16       20.00        5.65      -96.83         4.10
SRCPARAM AS25R529 1.0            285.90       20.00      200.00      -96.83         4.10
SRCPARAM AS25R530 1.0            283.45       20.00      200.00      -96.83         5.75
SRCPARAM AS25R531 1.0            289.86       20.00      200.00      -96.83         4.27
SRCPARAM AS25R532 1.0            299.90       20.00      187.04      -96.83         4.10
SRCPARAM QU24R001 1.0             12.00       20.00      123.57      169.51         4.10
SRCPARAM QU24R002 1.0             12.00       20.00      123.57      169.51         4.10
SRCPARAM RW06L001 1.0             12.00       20.00       49.43       83.26         4.10
SRCPARAM RW06L002 1.0             12.00       20.00       49.43       83.26         4.10
SRCPARAM RW06L003 1.0             12.00       20.00       49.43       83.26         4.10
SRCPARAM RW06L004 1.0             12.00       20.00       49.43       83.26         4.10
SRCPARAM RW06L005 1.0             12.00       20.00       49.43       83.26         4.10
SRCPARAM RW06L006 1.0             12.00       20.00       49.43       83.26         4.10
```

Table L.2-1
AERMOD Input File for 2005 SAIP Diesel PM Run

```
SRCPARAM RW06L007 1.0           12.00      20.00      49.43      83.26        4.10
SRCPARAM RW06L008 1.0           12.00      20.00      49.43      83.26        4.10
SRCPARAM RW06L009 1.0           12.00      20.00      49.43      83.26        4.10
SRCPARAM RW06L010 1.0           12.00      20.00      49.43      83.26        4.10
SRCPARAM RW06L011 1.0           12.00      20.00      49.43      83.26        4.10
SRCPARAM RW06L012 1.0           12.00      20.00      49.43      83.26        4.10
SRCPARAM RW06L013 1.0           12.00      20.00      49.43      83.26        4.10
SRCPARAM RW06L014 1.0           12.00      20.00      49.43      83.26        4.10
SRCPARAM RW06L015 1.0           12.00      20.00      49.43      83.26        4.10
SRCPARAM RW06L016 1.0           12.00      20.00      49.43      83.26        4.10
SRCPARAM RW06L017 1.0           12.00      20.00      49.43      83.26        4.10
SRCPARAM RW06L018 1.0           12.00      20.00      49.43      83.26        4.10
SRCPARAM RW06L019 1.0           12.00      20.00      49.43      83.26        4.10
SRCPARAM RW06L020 1.0           12.00      20.00      49.43      83.26        4.10
SRCPARAM RW06L021 1.0           12.00      20.00      49.43      83.26        4.10
SRCPARAM RW06L022 1.0           12.00      20.00      49.43      83.26        4.10
SRCPARAM RW06L023 1.0           12.00      20.00      49.43      83.26        4.10
SRCPARAM RW06L024 1.0           12.00      20.00      49.43      83.26        4.10
SRCPARAM RW06L025 1.0           12.00      20.00      49.43      83.26        4.10
SRCPARAM RW06L026 1.0           12.00      20.00      49.43      83.26        4.10
SRCPARAM RW06L027 1.0           12.00      20.00      49.43      83.26        4.10
SRCPARAM RW06L028 1.0           12.00      20.00      49.43      83.26        4.10
SRCPARAM RW06L029 1.0           12.00      20.00      49.43      83.26        4.10
SRCPARAM RW06L030 1.0           12.00      20.00      49.43      83.26        4.10
SRCPARAM RW06L031 1.0           12.00      20.00      49.43      83.26        4.10
SRCPARAM RW06L032 1.0           12.00      20.00      49.43      83.26        4.10
SRCPARAM RW06L033 1.0           12.00      20.00      49.43      83.26        4.10
SRCPARAM RW06L034 1.0           12.00      20.00      49.43      83.26        4.10
SRCPARAM RW06L035 1.0           12.00      20.00      49.43      83.26        4.10
SRCPARAM RW06L036 1.0           12.00      20.00      49.43      83.26        4.10
SRCPARAM RW06L037 1.0           12.00      20.00      49.43      83.26        4.10
SRCPARAM RW06L038 1.0           12.00      20.00      49.43      83.26        4.10
SRCPARAM RW06L039 1.0           12.00      20.00      49.43      83.26        4.10
SRCPARAM RW06L040 1.0           12.00      20.00      49.43      83.26        4.10
SRCPARAM RW06L041 1.0           12.00      20.00      49.43      83.26        4.10
SRCPARAM RW06L042 1.0           12.00      20.00      49.43      83.26        4.10
SRCPARAM RW06L043 1.0           12.00      20.00      49.43      83.26        4.10
SRCPARAM RW06L044 1.0           12.00      20.00      49.43      83.26        4.10
SRCPARAM RW06L045 1.0           12.00      20.00      49.43      83.26        4.10
SRCPARAM RW06L046 1.0           12.00      20.00      49.43      83.26        4.10
SRCPARAM RW06L047 1.0           12.00      20.00      49.43      83.26        4.10
SRCPARAM RW06L048 1.0           12.00      20.00      49.43      83.26        4.10
SRCPARAM RW06L049 1.0           12.00      20.00      49.43      83.26        4.10
SRCPARAM RW06L050 1.0           12.00      20.00      49.43      83.26        4.10
SRCPARAM RW06L051 1.0           12.00      20.00      49.43      83.26        4.10
SRCPARAM RW06L052 1.0           12.00      20.00      49.43      83.26        4.10
SRCPARAM RW06L053 1.0           12.00      20.00      49.43      83.26        4.10
SRCPARAM RW06L054 1.0           12.00      20.00      49.43      83.26        4.10
SRCPARAM RW06L055 1.0           12.00      20.00      49.43      83.26        4.10
SRCPARAM DS24R002 1.0           14.31      20.00      30.92     -96.74        4.10
SRCPARAM DS24R003 1.0           16.20      20.00     183.35     -96.74        4.16
SRCPARAM DS24R004 1.0           16.00      20.00     118.06     -96.74        4.10
SRCPARAM DS24R005 1.0           16.00      20.00      69.42     -96.74        4.10
SRCPARAM DS24R008 1.0           15.64      20.00     174.02     -96.74        4.11
SRCPARAM DS24R009 1.0           16.89      20.00     200.00     -96.74        4.38
SRCPARAM DS24R010 1.0           15.52      20.00     200.00     -96.74        4.14
SRCPARAM DS24R011 1.0           16.19      20.00     125.95     -96.74        4.16
SRCPARAM DS24R015 1.0           15.93      20.00     168.19     -96.74        4.10
SRCPARAM DS24R016 1.0           19.87      20.00       2.30     -96.74        4.10
SRCPARAM DS24R039 1.0           26.47      20.00     184.55     -96.74        5.71
SRCPARAM DS24R040 1.0           31.37      20.00     200.00     -96.74        4.42
SRCPARAM DS24R041 1.0           30.65      20.00     200.00     -96.74        5.21
SRCPARAM DS24R042 1.0           37.28      20.00      47.13     -96.74        4.10
SRCPARAM DS24R044 1.0           26.94      20.00     130.56     -96.74        5.30
SRCPARAM DS24R045 1.0           29.67      20.00     200.00     -96.74        4.59
SRCPARAM DS24R046 1.0           31.81      20.00     200.00     -96.74        4.35
SRCPARAM DS24R047 1.0           27.39      20.00     200.00     -96.74        4.77
SRCPARAM DS24R048 1.0           35.94      20.00      50.63     -96.74        4.10
SRCPARAM DS24R051 1.0           26.22      20.00     102.34     -96.74        4.10
SRCPARAM DS24R052 1.0           31.45      20.00     184.02     -96.74        4.87
SRCPARAM DS24R075 1.0           45.52      20.00      90.18     -96.74        5.12
```

Table L.2-1
AERMOD Input File for 2005 SAIP Diesel PM Run

```
SRCPARAM DS24R076 1.0          46.72      20.00      200.00      -96.74         6.51
SRCPARAM DS24R077 1.0          52.15      20.00      188.23      -96.74         4.20
SRCPARAM DS24R078 1.0          48.81      20.00      152.87      -96.74         4.10
SRCPARAM DS24R079 1.0          58.81      20.00       20.68      -96.74         4.10
SRCPARAM DS24R080 1.0          42.02      20.00       21.91      -96.74         4.10
SRCPARAM DS24R081 1.0          48.60      20.00      200.00      -96.74         4.25
SRCPARAM DS24R082 1.0          52.53      20.00      200.00      -96.74         5.61
SRCPARAM DS24R083 1.0          48.71      20.00      200.00      -96.74         4.83
SRCPARAM DS24R084 1.0          50.53      20.00      175.31      -96.74         4.48
SRCPARAM DS24R088 1.0          47.50      20.00      137.69      -96.74         4.75
SRCPARAM DS24R089 1.0          51.82      20.00      165.74      -96.74         4.79
SRCPARAM DS24R112 1.0          68.21      20.00      195.81      -96.74         4.29
SRCPARAM DS24R113 1.0          66.84      20.00      200.00      -96.74         6.69
SRCPARAM DS24R114 1.0          72.35      20.00      144.47      -96.74         4.13
SRCPARAM DS24R115 1.0          70.00      20.00      173.55      -96.74         4.10
SRCPARAM DS24R117 1.0          66.71      20.00      113.25      -96.74         5.25
SRCPARAM DS24R118 1.0          70.13      20.00      200.00      -96.74         4.27
SRCPARAM DS24R119 1.0          69.85      20.00      200.00      -96.74         4.38
SRCPARAM DS24R120 1.0          67.80      20.00      200.00      -96.74         6.13
SRCPARAM DS24R121 1.0          71.98      20.00       99.98      -96.74         4.10
SRCPARAM DS24R125 1.0          68.46      20.00      173.05      -96.74         5.19
SRCPARAM DS24R126 1.0          71.88      20.00      147.46      -96.74         4.10
SRCPARAM DS24R148 1.0          90.00      20.00       94.37      -96.74         4.10
SRCPARAM DS24R149 1.0          89.05      20.00      174.40      -96.74         4.42
SRCPARAM DS24R150 1.0          86.41      20.00      200.00      -96.74         5.93
SRCPARAM DS24R151 1.0          94.03      20.00      200.00      -96.74         4.35
SRCPARAM DS24R152 1.0          90.33      20.00      167.79      -96.74         4.10
SRCPARAM DS24R153 1.0          80.42      20.00        4.59      -96.74         4.10
SRCPARAM DS24R154 1.0          87.73      20.00      200.00      -96.74         4.35
SRCPARAM DS24R155 1.0          92.25      20.00      200.00      -96.74         6.20
SRCPARAM DS24R156 1.0          91.77      20.00      200.00      -96.74         6.77
SRCPARAM DS24R157 1.0          89.19      20.00      200.00      -96.74         4.87
SRCPARAM DS24R158 1.0          98.02      20.00       24.66      -96.74         4.10
SRCPARAM DS24R161 1.0          80.51      20.00        8.41      -96.74         4.10
SRCPARAM DS24R162 1.0          88.42      20.00      200.00      -96.74         5.33
SRCPARAM DS24R163 1.0          92.89      20.00      129.17      -96.74         4.10
SRCPARAM DS24R184 1.0         100.75      20.00        7.08      -96.74         4.10
SRCPARAM DS24R185 1.0         105.87      20.00      200.00      -96.74         5.36
SRCPARAM DS24R186 1.0         111.79      20.00      124.17      -96.74         4.44
SRCPARAM DS24R187 1.0         109.13      20.00      180.53      -96.74         4.12
SRCPARAM DS24R188 1.0         115.69      20.00      200.00      -96.74         7.88
SRCPARAM DS24R189 1.0         111.85      20.00      141.35      -96.74         4.10
SRCPARAM DS24R190 1.0         106.14      20.00       95.94      -96.74         4.86
SRCPARAM DS24R191 1.0         110.22      20.00      183.54      -96.74         4.21
SRCPARAM DS24R192 1.0         110.00      20.00      160.91      -96.74         4.10
SRCPARAM DS24R193 1.0         110.00      20.00      161.64      -96.74         4.10
SRCPARAM DS24R194 1.0         110.00      20.00      124.68      -96.74         4.10
SRCPARAM DS24R198 1.0         102.66      20.00       43.76      -96.74         4.10
SRCPARAM DS24R199 1.0         109.17      20.00      200.00      -96.74         5.93
SRCPARAM DS24R200 1.0         113.90      20.00      110.89      -96.74         4.10
SRCPARAM DS24R221 1.0         130.00      20.00       94.37      -96.74         4.10
SRCPARAM DS24R222 1.0         128.30      20.00      161.49      -96.74         4.15
SRCPARAM DS24R223 1.0         132.45      20.00      200.00      -96.74         7.43
SRCPARAM DS24R224 1.0         130.38      20.00      146.82      -96.74         4.34
SRCPARAM DS24R225 1.0         123.38      20.00       58.65      -96.74         4.10
SRCPARAM DS24R226 1.0         133.38      20.00      114.90      -96.74         4.10
SRCPARAM DS24R227 1.0         127.03      20.00      187.28      -96.74         4.42
SRCPARAM DS24R228 1.0         132.03      20.00      200.00      -96.74         6.35
SRCPARAM DS24R229 1.0         132.59      20.00      200.00      -96.74         6.33
SRCPARAM DS24R230 1.0         127.70      20.00      200.00      -96.74         5.88
SRCPARAM DS24R231 1.0         134.06      20.00       74.01      -96.74         4.10
SRCPARAM DS24R235 1.0         124.80      20.00       79.12      -96.74         4.10
SRCPARAM DS24R236 1.0         129.46      20.00      200.00      -96.74         6.42
SRCPARAM DS24R237 1.0         134.90      20.00       92.61      -96.74         4.10
SRCPARAM DS24R257 1.0         141.94      20.00       18.35      -96.74         4.10
SRCPARAM DS24R258 1.0         150.15      20.00      200.00      -96.74         4.60
SRCPARAM DS24R259 1.0         150.16      20.00      162.68      -96.74         4.24
SRCPARAM DS24R260 1.0         145.77      20.00      149.29      -96.74         4.93
SRCPARAM DS24R261 1.0         154.00      20.00       79.85      -96.74         4.10
SRCPARAM DS24R262 1.0         144.90      20.00       85.10      -96.74         4.10
SRCPARAM DS24R263 1.0         146.62      20.00      200.00      -96.74         5.13
```

Table L.2-1
AERMOD Input File for 2005 SAIP Diesel PM Run

```
SRCPARAM DS24R264 1.0           150.07      20.00      200.00      -96.74        4.28
SRCPARAM DS24R265 1.0           150.49      20.00      192.88      -96.74        4.57
SRCPARAM DS24R266 1.0           149.26      20.00      115.30      -96.74        4.13
SRCPARAM DS24R267 1.0           150.27      20.00      198.69      -96.74        4.38
SRCPARAM DS24R272 1.0           146.95      20.00      114.47      -96.74        4.10
SRCPARAM DS24R273 1.0           149.15      20.00      200.00      -96.74        6.49
SRCPARAM DS24R274 1.0           155.91      20.00       74.33      -96.74        4.10
SRCPARAM DS24R294 1.0           170.00      20.00       94.37      -96.74        4.10
SRCPARAM DS24R295 1.0           168.06      20.00      179.43      -96.74        5.20
SRCPARAM DS24R296 1.0           171.27      20.00      200.00      -96.74        5.42
SRCPARAM DS24R297 1.0           169.48      20.00      200.00      -96.74        4.28
SRCPARAM DS24R298 1.0           179.03      20.00       12.87      -96.74        4.10
SRCPARAM DS24R299 1.0           166.43      20.00      111.55      -96.74        4.10
SRCPARAM DS24R300 1.0           166.56      20.00      200.00      -96.74        4.53
SRCPARAM DS24R301 1.0           172.17      20.00      200.00      -96.74        6.12
SRCPARAM DS24R302 1.0           172.64      20.00       95.46      -96.74        4.19
SRCPARAM DS24R303 1.0           169.75      20.00      195.66      -96.74        4.38
SRCPARAM DS24R304 1.0           170.10      20.00      123.36      -96.74        4.10
SRCPARAM DS24R309 1.0           169.10      20.00      149.83      -96.74        4.10
SRCPARAM DS24R310 1.0           168.07      20.00      200.00      -96.74        5.43
SRCPARAM DS24R311 1.0           176.92      20.00       56.05      -96.74        4.10
SRCPARAM DS24R330 1.0           183.14      20.00       29.62      -96.74        4.10
SRCPARAM DS24R331 1.0           189.93      20.00      200.00      -96.74        5.69
SRCPARAM DS24R332 1.0           188.99      20.00      200.00      -96.74        4.41
SRCPARAM DS24R333 1.0           192.62      20.00      197.58      -96.74        5.48
SRCPARAM DS24R334 1.0           190.00      20.00      133.02      -96.74        4.10
SRCPARAM DS24R336 1.0           185.77      20.00      137.99      -96.74        4.21
SRCPARAM DS24R337 1.0           189.87      20.00      200.00      -96.74        4.47
SRCPARAM DS24R338 1.0           191.01      20.00      198.04      -96.74        4.71
SRCPARAM DS24R339 1.0           186.44      20.00       82.51      -96.74        4.39
SRCPARAM DS24R340 1.0           188.09      20.00      200.00      -96.74        5.58
SRCPARAM DS24R341 1.0           196.15      20.00       48.04      -96.74        4.10
SRCPARAM DS24R346 1.0           190.00      20.00      164.64      -96.74        4.10
SRCPARAM DS24R347 1.0           187.92      20.00      143.95      -96.74        4.10
SRCPARAM DS24R348 1.0           197.92      20.00       37.76      -96.74        4.10
SRCPARAM DS24R367 1.0           210.00      20.00       94.37      -96.74        4.10
SRCPARAM DS24R368 1.0           210.00      20.00      170.83      -96.74        4.10
SRCPARAM DS24R369 1.0           209.91      20.00      168.78      -96.74        4.21
SRCPARAM DS24R370 1.0           205.84      20.00      200.00      -96.74        4.95
SRCPARAM DS24R371 1.0           214.07      20.00       78.92      -96.74        4.10
SRCPARAM DS24R373 1.0           205.93      20.00      164.44      -96.74        4.69
SRCPARAM DS24R374 1.0           213.01      20.00      200.00      -96.74        4.85
SRCPARAM DS24R375 1.0           210.31      20.00      112.17      -96.74        4.21
SRCPARAM DS24R376 1.0           209.46      20.00      169.36      -96.74        4.17
SRCPARAM DS24R377 1.0           210.20      20.00      172.71      -96.74        4.30
SRCPARAM DS24R382 1.0           201.25      20.00       20.54      -96.74        4.10
SRCPARAM DS24R383 1.0           211.25      20.00      144.10      -96.74        4.10
SRCPARAM DS24R384 1.0           208.93      20.00      162.24      -96.74        4.10
SRCPARAM DS24R385 1.0           218.93      20.00       19.48      -96.74        4.10
SRCPARAM DS24R403 1.0           224.33      20.00       40.89      -96.74        4.10
SRCPARAM DS24R404 1.0           228.18      20.00      200.00      -96.74        6.21
SRCPARAM DS24R405 1.0           229.07      20.00      200.00      -96.74        6.48
SRCPARAM DS24R406 1.0           230.99      20.00      200.00      -96.74        4.72
SRCPARAM DS24R407 1.0           229.47      20.00      200.00      -96.74        4.45
SRCPARAM DS24R408 1.0           239.10      20.00       11.94      -96.74        4.10
SRCPARAM DS24R409 1.0           225.49      20.00       57.22      -96.74        4.17
SRCPARAM DS24R410 1.0           229.82      20.00      200.00      -96.74        4.58
SRCPARAM DS24R411 1.0           229.72      20.00      200.00      -96.74        4.94
SRCPARAM DS24R412 1.0           232.61      20.00      200.00      -96.74        7.47
SRCPARAM DS24R413 1.0           227.90      20.00      200.00      -96.74        6.72
SRCPARAM DS24R414 1.0           232.19      20.00       97.39      -96.74        4.10
SRCPARAM DS24R419 1.0           223.39      20.00       55.90      -96.74        4.10
SRCPARAM DS24R420 1.0           233.39      20.00      108.75      -96.74        4.10
SRCPARAM DS24R421 1.0           229.93      20.00      180.52      -96.74        4.10
SRCPARAM DS24R422 1.0           239.93      20.00        2.00      -96.74        4.10
SRCPARAM DS24R440 1.0           249.04      20.00      146.52      -96.74        4.89
SRCPARAM DS24R441 1.0           250.28      20.00      153.19      -96.74        4.15
SRCPARAM DS24R442 1.0           247.46      20.00      100.24      -96.74        4.10
SRCPARAM DS24R443 1.0           252.70      20.00      144.45      -96.74        5.45
SRCPARAM DS24R444 1.0           250.00      20.00      133.02      -96.74        4.10
SRCPARAM DS24R446 1.0           245.36      20.00      160.48      -96.74        4.97
```

Table L.2-1
AERMOD Input File for 2005 SAIP Diesel PM Run

```
SRCPARAM DS24R447 1.0          252.50      20.00     200.00      -96.74        4.48
SRCPARAM DS24R448 1.0          250.13      20.00     140.63      -96.74        4.21
SRCPARAM DS24R449 1.0          248.89      20.00     143.06      -96.74        4.80
SRCPARAM DS24R450 1.0          248.80      20.00     200.00      -96.74        4.40
SRCPARAM DS24R451 1.0          258.23      20.00      22.07      -96.74        4.10
SRCPARAM DS24R456 1.0          245.54      20.00      91.25      -96.74        4.10
SRCPARAM DS24R457 1.0          255.54      20.00      73.39      -96.74        4.10
SRCPARAM DS24R458 1.0          250.00      20.00     181.72      -96.74        4.10
SRCPARAM DS24R476 1.0          265.53      20.00      52.15      -96.74        4.10
SRCPARAM DS24R477 1.0          268.11      20.00     200.00      -96.74        5.58
SRCPARAM DS24R478 1.0          275.21      20.00      43.05      -96.74        4.10
SRCPARAM DS24R479 1.0          269.08      20.00     165.97      -96.74        4.55
SRCPARAM DS24R480 1.0          266.00      20.00     200.00      -96.74        5.76
SRCPARAM DS24R481 1.0          274.14      20.00      77.99      -96.74        4.10
SRCPARAM DS24R482 1.0          266.01      20.00      63.73      -96.74        4.34
SRCPARAM DS24R483 1.0          269.97      20.00     200.00      -96.74        4.53
SRCPARAM DS24R484 1.0          268.62      20.00     200.00      -96.74        5.13
SRCPARAM DS24R485 1.0          273.40      20.00     200.00      -96.74        6.06
SRCPARAM DS24R486 1.0          270.87      20.00     200.00      -96.74        4.64
SRCPARAM DS24R487 1.0          270.22      20.00     146.74      -96.74        4.31
SRCPARAM DS24R493 1.0          267.69      20.00     126.61      -96.74        4.10
SRCPARAM DS24R494 1.0          272.06      20.00     200.00      -96.74        8.91
SRCPARAM DS24R495 1.0          270.94      20.00     164.64      -96.74        4.10
SRCPARAM DS24R513 1.0          290.77      20.00     157.79      -96.74        5.33
SRCPARAM DS24R514 1.0          292.94      20.00     154.47      -96.74        4.30
SRCPARAM DS24R515 1.0          282.36      20.00      31.70      -96.74        4.10
SRCPARAM DS24R516 1.0          293.83      20.00     200.00      -96.74        4.29
SRCPARAM DS24R517 1.0          289.25      20.00     200.00      -96.74        4.25
SRCPARAM DS24R518 1.0          301.57      20.00      42.93      -96.74        4.10
SRCPARAM DS24R519 1.0          286.17      20.00     166.98      -96.74        6.10
SRCPARAM DS24R520 1.0          293.86      20.00     200.00      -96.74        4.90
SRCPARAM DS24R521 1.0          293.84      20.00     196.49      -96.74        5.15
SRCPARAM DS24R522 1.0          290.32      20.00     116.76      -96.74        4.10
SRCPARAM DS24R523 1.0          288.08      20.00     200.00      -96.74        6.96
SRCPARAM DS24R524 1.0          296.67      20.00     101.34      -96.74        4.10
SRCPARAM DS24R530 1.0          289.84      20.00     161.97      -96.74        4.10
SRCPARAM DS24R531 1.0          292.38      20.00     200.00      -96.74       10.94
SRCPARAM DS24R532 1.0          294.34      20.00     189.97      -96.74        4.10
SRCPARAM AS24R001 1.0           16.00      20.00     152.66      -96.74        4.10
SRCPARAM AS24R037 1.0           21.24      20.00      47.36      -96.74        4.10
SRCPARAM AS24R038 1.0           27.72      20.00     200.00      -96.74        4.10
SRCPARAM AS24R039 1.0           36.48      20.00     136.55      -96.74        4.10
SRCPARAM AS24R075 1.0           41.72      20.00      65.77      -96.74        4.10
SRCPARAM AS24R076 1.0           48.68      20.00     200.00      -96.74        4.10
SRCPARAM AS24R077 1.0           56.96      20.00     118.01      -96.74        4.10
SRCPARAM AS24R113 1.0           62.20      20.00      84.19      -96.74        4.10
SRCPARAM AS24R114 1.0           69.65      20.00     200.00      -96.74        4.10
SRCPARAM AS24R115 1.0           77.44      20.00      99.46      -96.74        4.10
SRCPARAM AS24R151 1.0           82.69      20.00     102.61      -96.74        4.10
SRCPARAM AS24R152 1.0           90.61      20.00     200.00      -96.74        4.10
SRCPARAM AS24R153 1.0           97.93      20.00      80.92      -96.74        4.10
SRCPARAM AS24R189 1.0          103.17      20.00     121.03      -96.74        4.10
SRCPARAM AS24R190 1.0          111.57      20.00     200.00      -96.74        4.10
SRCPARAM AS24R191 1.0          118.41      20.00      62.37      -96.74        4.10
SRCPARAM AS24R227 1.0          123.65      20.00     139.45      -96.74        4.10
SRCPARAM AS24R228 1.0          132.54      20.00     200.00      -96.74        4.10
SRCPARAM AS24R229 1.0          138.89      20.00      43.83      -96.74        4.10
SRCPARAM AS24R265 1.0          144.13      20.00     157.87      -96.74        4.10
SRCPARAM AS24R266 1.0          153.50      20.00     200.00      -96.74        4.10
SRCPARAM AS24R267 1.0          159.37      20.00      25.28      -96.74        4.10
SRCPARAM AS24R303 1.0          164.61      20.00     176.29      -96.74        4.10
SRCPARAM AS24R304 1.0          174.46      20.00     200.00      -96.74        4.10
SRCPARAM AS24R305 1.0          179.85      20.00       6.74      -96.74        4.10
SRCPARAM AS24R341 1.0          185.09      20.00     194.71      -96.74        4.10
SRCPARAM AS24R342 1.0          195.09      20.00     188.19      -96.74        4.10
SRCPARAM AS24R378 1.0          200.33      20.00      13.07      -96.74        4.10
SRCPARAM AS24R379 1.0          205.91      20.00     200.00      -96.74        4.10
SRCPARAM AS24R380 1.0          215.57      20.00     169.65      -96.74        4.10
SRCPARAM AS24R416 1.0          220.82      20.00      31.40      -96.74        4.10
SRCPARAM AS24R417 1.0          226.87      20.00     200.00      -96.74        4.10
SRCPARAM AS24R418 1.0          236.06      20.00     151.10      -96.74        4.10
```

Table L.2-1
AERMOD Input File for 2005 SAIP Diesel PM Run

SRCPARAM	AS24R454	1.0	241.30	20.00	49.73	-96.74	4.10
SRCPARAM	AS24R455	1.0	247.84	20.00	200.00	-96.74	4.10
SRCPARAM	AS24R456	1.0	256.54	20.00	132.56	-96.74	4.10
SRCPARAM	AS24R492	1.0	261.78	20.00	68.06	-96.74	4.10
SRCPARAM	AS24R493	1.0	268.80	20.00	200.00	-96.74	4.10
SRCPARAM	AS24R494	1.0	277.02	20.00	114.01	-96.74	4.10
SRCPARAM	AS24R530	1.0	282.26	20.00	86.38	-96.74	4.10
SRCPARAM	AS24R531	1.0	289.76	20.00	200.00	-96.74	4.10
SRCPARAM	AS24R532	1.0	299.90	20.00	187.02	-96.74	4.10
SRCPARAM	QU24L001	1.0	12.00	20.00	170.08	-106.11	4.10
SRCPARAM	QU24L002	1.0	12.00	20.00	170.08	-106.11	4.10
SRCPARAM	QU24L003	1.0	12.00	20.00	170.08	-106.11	4.10
SRCPARAM	QU24L004	1.0	12.00	20.00	170.08	-106.11	4.10
SRCPARAM	QU24L005	1.0	12.00	20.00	170.08	-106.11	4.10
SRCPARAM	RW06R001	1.0	12.00	20.00	49.73	83.24	4.10
SRCPARAM	RW06R002	1.0	12.00	20.00	49.73	83.24	4.10
SRCPARAM	RW06R003	1.0	12.00	20.00	49.73	83.24	4.10
SRCPARAM	RW06R004	1.0	12.00	20.00	49.73	83.24	4.10
SRCPARAM	RW06R005	1.0	12.00	20.00	49.73	83.24	4.10
SRCPARAM	RW06R006	1.0	12.00	20.00	49.73	83.24	4.10
SRCPARAM	RW06R007	1.0	12.00	20.00	49.73	83.24	4.10
SRCPARAM	RW06R008	1.0	12.00	20.00	49.73	83.24	4.10
SRCPARAM	RW06R009	1.0	12.00	20.00	49.73	83.24	4.10
SRCPARAM	RW06R010	1.0	12.00	20.00	49.73	83.24	4.10
SRCPARAM	RW06R011	1.0	12.00	20.00	49.73	83.24	4.10
SRCPARAM	RW06R012	1.0	12.00	20.00	49.73	83.24	4.10
SRCPARAM	RW06R013	1.0	12.00	20.00	49.73	83.24	4.10
SRCPARAM	RW06R014	1.0	12.00	20.00	49.73	83.24	4.10
SRCPARAM	RW06R015	1.0	12.00	20.00	49.73	83.24	4.10
SRCPARAM	RW06R016	1.0	12.00	20.00	49.73	83.24	4.10
SRCPARAM	RW06R017	1.0	12.00	20.00	49.73	83.24	4.10
SRCPARAM	RW06R018	1.0	12.00	20.00	49.73	83.24	4.10
SRCPARAM	RW06R019	1.0	12.00	20.00	49.73	83.24	4.10
SRCPARAM	RW06R020	1.0	12.00	20.00	49.73	83.24	4.10
SRCPARAM	RW06R021	1.0	12.00	20.00	49.73	83.24	4.10
SRCPARAM	RW06R022	1.0	12.00	20.00	49.73	83.24	4.10
SRCPARAM	RW06R023	1.0	12.00	20.00	49.73	83.24	4.10
SRCPARAM	RW06R024	1.0	12.00	20.00	49.73	83.24	4.10
SRCPARAM	RW06R025	1.0	12.00	20.00	49.73	83.24	4.10
SRCPARAM	RW06R026	1.0	12.00	20.00	49.73	83.24	4.10
SRCPARAM	RW06R027	1.0	12.00	20.00	49.73	83.24	4.10
SRCPARAM	RW06R028	1.0	12.00	20.00	49.73	83.24	4.10
SRCPARAM	RW06R029	1.0	12.00	20.00	49.73	83.24	4.10
SRCPARAM	RW06R030	1.0	12.00	20.00	49.73	83.24	4.10
SRCPARAM	RW06R031	1.0	12.00	20.00	49.73	83.24	4.10
SRCPARAM	RW06R032	1.0	12.00	20.00	49.73	83.24	4.10
SRCPARAM	RW06R033	1.0	12.00	20.00	49.73	83.24	4.10
SRCPARAM	RW06R034	1.0	12.00	20.00	49.73	83.24	4.10
SRCPARAM	RW06R035	1.0	12.00	20.00	49.73	83.24	4.10
SRCPARAM	RW06R036	1.0	12.00	20.00	49.73	83.24	4.10
SRCPARAM	RW06R037	1.0	12.00	20.00	49.73	83.24	4.10
SRCPARAM	RW06R038	1.0	12.00	20.00	49.73	83.24	4.10
SRCPARAM	RW06R039	1.0	12.00	20.00	49.73	83.24	4.10
SRCPARAM	RW06R040	1.0	12.00	20.00	49.73	83.24	4.10
SRCPARAM	RW06R041	1.0	12.00	20.00	49.73	83.24	4.10
SRCPARAM	RW06R042	1.0	12.00	20.00	49.73	83.24	4.10
SRCPARAM	RW06R043	1.0	12.00	20.00	49.73	83.24	4.10
SRCPARAM	RW06R044	1.0	12.00	20.00	49.73	83.24	4.10
SRCPARAM	RW06R045	1.0	12.00	20.00	49.73	83.24	4.10
SRCPARAM	RW06R046	1.0	12.00	20.00	49.73	83.24	4.10
SRCPARAM	RW06R047	1.0	12.00	20.00	49.73	83.24	4.10
SRCPARAM	RW06R048	1.0	12.00	20.00	49.73	83.24	4.10
SRCPARAM	RW06R049	1.0	12.00	20.00	49.73	83.24	4.10
SRCPARAM	RW06R050	1.0	12.00	20.00	49.73	83.24	4.10
SRCPARAM	RW06R051	1.0	12.00	20.00	49.73	83.24	4.10
SRCPARAM	RW06R052	1.0	12.00	20.00	49.73	83.24	4.10
SRCPARAM	RW06R053	1.0	12.00	20.00	49.73	83.24	4.10
SRCPARAM	RW06R054	1.0	12.00	20.00	49.73	83.24	4.10
SRCPARAM	RW06R055	1.0	12.00	20.00	49.73	83.24	4.10
SRCPARAM	RW06R056	1.0	12.00	20.00	49.73	83.24	4.10
SRCPARAM	RW06R057	1.0	12.00	20.00	49.73	83.24	4.10

Table L.2-1
AERMOD Input File for 2005 SAIP Diesel PM Run

```
SRCPARAM RW06R058 1.0          12.00      20.00      49.73      83.24       4.10
SRCPARAM RW06R059 1.0          12.00      20.00      49.73      83.24       4.10
SRCPARAM RW06R060 1.0          12.00      20.00      49.73      83.24       4.10
SRCPARAM RW06R061 1.0          12.00      20.00      49.73      83.24       4.10
SRCPARAM RW06R062 1.0          12.00      20.00      49.73      83.24       4.10
SRCPARAM RW06R063 1.0          12.00      20.00      49.73      83.24       4.10
SRCPARAM DS24L002 1.0          14.36      20.00      22.29     -96.76       4.10
SRCPARAM DS24L003 1.0          16.36      20.00     183.35     -96.76       4.19
SRCPARAM DS24L004 1.0          16.00      20.00     148.64     -96.76       4.10
SRCPARAM DS24L005 1.0          16.00      20.00      69.42     -96.76       4.10
SRCPARAM DS24L007 1.0          16.00      20.00      42.31     -96.76       4.10
SRCPARAM DS24L008 1.0          15.74      20.00     174.02     -96.76       4.11
SRCPARAM DS24L009 1.0          17.40      20.00     200.00     -96.76       4.47
SRCPARAM DS24L010 1.0          16.00      20.00     197.42     -96.76       4.10
SRCPARAM DS24L011 1.0          16.00      20.00      84.04     -96.76       4.10
SRCPARAM DS24L012 1.0          13.34      20.00      22.77     -96.76       4.10
SRCPARAM DS24L013 1.0          17.34      20.00      45.07     -96.76       4.10
SRCPARAM DS24L014 1.0          16.00      20.00     122.02     -96.76       4.10
SRCPARAM DS24L015 1.0          15.57      20.00     168.19     -96.76       4.23
SRCPARAM DS24L016 1.0          16.94      20.00      58.49     -96.76       4.10
SRCPARAM DS24L017 1.0          16.00      20.00     100.22     -96.76       4.10
SRCPARAM DS24L039 1.0          27.58      20.00     184.55     -96.76       5.51
SRCPARAM DS24L040 1.0          28.20      20.00     200.00     -96.76       5.44
SRCPARAM DS24L041 1.0          31.42      20.00     200.00     -96.76       5.05
SRCPARAM DS24L042 1.0          37.28      20.00      47.13     -96.76       4.10
SRCPARAM DS24L043 1.0          30.00      20.00     105.77     -96.76       4.10
SRCPARAM DS24L044 1.0          23.45      20.00     130.56     -96.76       4.69
SRCPARAM DS24L045 1.0          30.33      20.00     200.00     -96.76       4.44
SRCPARAM DS24L046 1.0          28.43      20.00     200.00     -96.76       5.25
SRCPARAM DS24L047 1.0          29.69      20.00     200.00     -96.76       5.15
SRCPARAM DS24L048 1.0          35.89      20.00      67.95     -96.76       4.10
SRCPARAM DS24L049 1.0          29.13      20.00     154.93     -96.76       4.10
SRCPARAM DS24L050 1.0          26.44      20.00     200.00     -96.76       6.59
SRCPARAM DS24L051 1.0          29.29      20.00     200.00     -96.76       5.61
SRCPARAM DS24L052 1.0          30.97      20.00     200.00     -96.76       5.87
SRCPARAM DS24L053 1.0          35.86      20.00     200.00     -96.76       6.08
SRCPARAM DS24L054 1.0          33.00      20.00     175.39     -96.76       4.10
SRCPARAM DS24L075 1.0          49.55      20.00      90.18     -96.76       4.10
SRCPARAM DS24L076 1.0          45.70      20.00     200.00     -96.76       5.56
SRCPARAM DS24L077 1.0          50.77      20.00     200.00     -96.76       4.40
SRCPARAM DS24L078 1.0          49.24      20.00     200.00     -96.76       4.53
SRCPARAM DS24L079 1.0          48.32      20.00     200.00     -96.76       9.54
SRCPARAM DS24L080 1.0          49.69      20.00     200.00     -96.76       5.36
SRCPARAM DS24L081 1.0          49.01      20.00     200.00     -96.76       4.18
SRCPARAM DS24L082 1.0          53.98      20.00     200.00     -96.76       5.97
SRCPARAM DS24L083 1.0          48.14      20.00     200.00     -96.76       4.71
SRCPARAM DS24L084 1.0          51.57      20.00     200.00     -96.76       5.02
SRCPARAM DS24L085 1.0          58.18      20.00      29.41     -96.76       4.10
SRCPARAM DS24L086 1.0          50.00      20.00     169.61     -96.76       4.10
SRCPARAM DS24L087 1.0          47.25      20.00     123.90     -96.76       4.20
SRCPARAM DS24L088 1.0          49.95      20.00     200.00     -96.76       5.32
SRCPARAM DS24L089 1.0          50.26      20.00     200.00     -96.76       5.87
SRCPARAM DS24L090 1.0          57.11      20.00     200.00     -96.76       5.44
SRCPARAM DS24L091 1.0          49.95      20.00     200.00     -96.76       4.10
SRCPARAM DS24L092 1.0          58.96      20.00      25.95     -96.76       4.10
SRCPARAM DS24L112 1.0          69.02      20.00     195.81     -96.76       4.68
SRCPARAM DS24L113 1.0          67.92      20.00     200.00     -96.76       5.85
SRCPARAM DS24L114 1.0          71.17      20.00     145.50     -96.76       4.15
SRCPARAM DS24L115 1.0          70.00      20.00     173.55     -96.76       4.10
SRCPARAM DS24L116 1.0          70.00      20.00     105.77     -96.76       4.10
SRCPARAM DS24L117 1.0          63.73      20.00     113.25     -96.76       4.46
SRCPARAM DS24L118 1.0          70.64      20.00     200.00     -96.76       4.32
SRCPARAM DS24L119 1.0          67.03      20.00     200.00     -96.76       5.28
SRCPARAM DS24L120 1.0          70.00      20.00     200.00     -96.76       5.03
SRCPARAM DS24L121 1.0          71.75      20.00     190.86     -96.76       4.56
SRCPARAM DS24L122 1.0          60.93      20.00      15.71     -96.76       4.10
SRCPARAM DS24L123 1.0          70.93      20.00     153.89     -96.76       4.10
SRCPARAM DS24L124 1.0          69.55      20.00     164.92     -96.76       4.31
SRCPARAM DS24L125 1.0          70.18      20.00     200.00     -96.76       4.35
SRCPARAM DS24L126 1.0          68.64      20.00     200.00     -96.76       4.20
SRCPARAM DS24L127 1.0          78.39      20.00      30.70     -96.76       4.10
```

Table L.2-1
AERMOD Input File for 2005 SAIP Diesel PM Run

```
SRCPARAM DS24L128 1.0           66.95       20.00      174.05      -96.76         4.10
SRCPARAM DS24L129 1.0           76.95       20.00       76.51      -96.76         4.10
SRCPARAM DS24L148 1.0           90.00       20.00       94.37      -96.76         4.10
SRCPARAM DS24L149 1.0           87.22       20.00      143.56      -96.76         4.44
SRCPARAM DS24L150 1.0           88.87       20.00      200.00      -96.76         5.13
SRCPARAM DS24L151 1.0           95.58       20.00      200.00      -96.76         5.68
SRCPARAM DS24L152 1.0           90.10       20.00      200.00      -96.76         4.37
SRCPARAM DS24L153 1.0           89.80       20.00      200.00      -96.76         4.49
SRCPARAM DS24L154 1.0           88.37       20.00      200.00      -96.76         4.31
SRCPARAM DS24L155 1.0           94.04       20.00      200.00      -96.76         6.12
SRCPARAM DS24L156 1.0           88.58       20.00      200.00      -96.76         5.25
SRCPARAM DS24L157 1.0           90.25       20.00      200.00      -96.76         4.97
SRCPARAM DS24L158 1.0           93.02       20.00      152.31      -96.76         5.39
SRCPARAM DS24L159 1.0           82.72       20.00       46.11      -96.76         4.10
SRCPARAM DS24L160 1.0           91.23       20.00      200.00      -96.76         5.54
SRCPARAM DS24L161 1.0           89.75       20.00      200.00      -96.76         5.24
SRCPARAM DS24L162 1.0           90.52       20.00      200.00      -96.76         4.25
SRCPARAM DS24L163 1.0           89.11       20.00      200.00      -96.76         4.21
SRCPARAM DS24L164 1.0           98.88       20.00       21.44      -96.76         4.10
SRCPARAM DS24L165 1.0           84.93       20.00      123.49      -96.76         4.10
SRCPARAM DS24L166 1.0           94.93       20.00      127.07      -96.76         4.10
SRCPARAM DS24L184 1.0          100.75       20.00        7.08      -96.76         4.10
SRCPARAM DS24L185 1.0          109.58       20.00      200.00      -96.76         4.61
SRCPARAM DS24L186 1.0          110.51       20.00      124.17      -96.76         4.42
SRCPARAM DS24L187 1.0          109.87       20.00      180.53      -96.76         4.11
SRCPARAM DS24L188 1.0          104.72       20.00      200.00      -96.76         7.59
SRCPARAM DS24L189 1.0          110.10       20.00      200.00      -96.76         4.33
SRCPARAM DS24L190 1.0          104.26       20.00      200.00      -96.76         4.44
SRCPARAM DS24L191 1.0          110.73       20.00      183.54      -96.76         4.37
SRCPARAM DS24L192 1.0          110.00       20.00      114.23      -96.76         4.10
SRCPARAM DS24L193 1.0          108.27       20.00      183.60      -96.76         4.82
SRCPARAM DS24L194 1.0          111.29       20.00      200.00      -96.76         5.13
SRCPARAM DS24L195 1.0          112.95       20.00      113.77      -96.76         4.10
SRCPARAM DS24L196 1.0          104.51       20.00       76.50      -96.76         4.10
SRCPARAM DS24L197 1.0          110.25       20.00      200.00      -96.76         6.24
SRCPARAM DS24L198 1.0          108.56       20.00      200.00      -96.76         6.87
SRCPARAM DS24L199 1.0          112.41       20.00      200.00      -96.76         4.34
SRCPARAM DS24L200 1.0          109.58       20.00      200.00      -96.76         4.22
SRCPARAM DS24L201 1.0          119.36       20.00       12.18      -96.76         4.10
SRCPARAM DS24L202 1.0          102.91       20.00       72.93      -96.76         4.10
SRCPARAM DS24L203 1.0          112.91       20.00      177.63      -96.76         4.10
SRCPARAM DS24L221 1.0          130.00       20.00       94.37      -96.76         4.10
SRCPARAM DS24L222 1.0          128.77       20.00      161.49      -96.76         4.15
SRCPARAM DS24L223 1.0          126.68       20.00      200.00      -96.76         5.55
SRCPARAM DS24L224 1.0          133.73       20.00      146.82      -96.76         4.81
SRCPARAM DS24L225 1.0          123.38       20.00       58.65      -96.76         4.10
SRCPARAM DS24L226 1.0          131.07       20.00      118.36      -96.76         4.39
SRCPARAM DS24L227 1.0          127.87       20.00      187.28      -96.76         4.45
SRCPARAM DS24L228 1.0          133.85       20.00      200.00      -96.76         6.03
SRCPARAM DS24L229 1.0          126.99       20.00      200.00      -96.76         6.68
SRCPARAM DS24L230 1.0          129.73       20.00      200.00      -96.76         5.28
SRCPARAM DS24L231 1.0          132.62       20.00      200.00      -96.76         5.83
SRCPARAM DS24L232 1.0          135.34       20.00       75.22      -96.76         4.10
SRCPARAM DS24L233 1.0          126.30       20.00      106.89      -96.76         4.10
SRCPARAM DS24L234 1.0          130.83       20.00      200.00      -96.76         5.94
SRCPARAM DS24L235 1.0          127.17       20.00      200.00      -96.76         5.79
SRCPARAM DS24L236 1.0          134.08       20.00      200.00      -96.76         4.64
SRCPARAM DS24L237 1.0          130.04       20.00      200.00      -96.76         4.22
SRCPARAM DS24L238 1.0          139.85       20.00        2.92      -96.76         4.10
SRCPARAM DS24L239 1.0          120.89       20.00       22.37      -96.76         4.10
SRCPARAM DS24L240 1.0          129.77       20.00      200.00      -96.76         4.10
SRCPARAM DS24L241 1.0          138.88       20.00       28.19      -96.76         4.10
SRCPARAM DS24L257 1.0          141.94       20.00       18.35      -96.76         4.10
SRCPARAM DS24L258 1.0          150.59       20.00      200.00      -96.76         4.55
SRCPARAM DS24L259 1.0          150.38       20.00      103.89      -96.76         4.43
SRCPARAM DS24L260 1.0          149.52       20.00      149.29      -96.76         4.35
SRCPARAM DS24L261 1.0          154.62       20.00       79.85      -96.76         4.35
SRCPARAM DS24L262 1.0          146.77       20.00       85.10      -96.76         4.29
SRCPARAM DS24L263 1.0          145.08       20.00      200.00      -96.76         4.64
SRCPARAM DS24L264 1.0          150.71       20.00      200.00      -96.76         4.47
SRCPARAM DS24L265 1.0          150.45       20.00      169.50      -96.76         4.54
```

Table L.2-1
AERMOD Input File for 2005 SAIP Diesel PM Run

```
SRCPARAM DS24L266 1.0          148.84     20.00     127.26     -96.76        4.39
SRCPARAM DS24L267 1.0          150.55     20.00     198.69     -96.76        4.50
SRCPARAM DS24L268 1.0          147.73     20.00     124.78     -96.76        4.10
SRCPARAM DS24L269 1.0          157.73     20.00      36.68     -96.76        4.10
SRCPARAM DS24L270 1.0          147.66     20.00     137.28     -96.76        4.45
SRCPARAM DS24L271 1.0          150.62     20.00     200.00     -96.76        5.76
SRCPARAM DS24L272 1.0          148.15     20.00     200.00     -96.76        5.26
SRCPARAM DS24L273 1.0          155.19     20.00     200.00     -96.76        5.31
SRCPARAM DS24L274 1.0          150.18     20.00     193.65     -96.76        4.23
SRCPARAM DS24L277 1.0          146.86     20.00     171.81     -96.76        4.10
SRCPARAM DS24L278 1.0          156.86     20.00      78.75     -96.76        4.10
SRCPARAM DS24L294 1.0          170.00     20.00      94.37     -96.76        4.10
SRCPARAM DS24L295 1.0          170.00     20.00     173.18     -96.76        4.10
SRCPARAM DS24L296 1.0          162.91     20.00      33.66     -96.76        4.10
SRCPARAM DS24L297 1.0          172.00     20.00     200.00     -96.76        4.39
SRCPARAM DS24L298 1.0          179.03     20.00      12.87     -96.76        4.10
SRCPARAM DS24L299 1.0          168.89     20.00     174.39     -96.76        4.42
SRCPARAM DS24L300 1.0          167.50     20.00     200.00     -96.76        4.65
SRCPARAM DS24L301 1.0          173.73     20.00     200.00     -96.76        5.61
SRCPARAM DS24L302 1.0          172.35     20.00     200.00     -96.76        4.84
SRCPARAM DS24L303 1.0          168.43     20.00     200.00     -96.76        4.90
SRCPARAM DS24L304 1.0          171.57     20.00     123.36     -96.76        4.56
SRCPARAM DS24L305 1.0          170.00     20.00     161.45     -96.76        4.10
SRCPARAM DS24L307 1.0          168.76     20.00     167.67     -96.76        4.55
SRCPARAM DS24L308 1.0          171.04     20.00     200.00     -96.76        5.47
SRCPARAM DS24L309 1.0          169.50     20.00     200.00     -96.76        4.69
SRCPARAM DS24L310 1.0          172.55     20.00     200.00     -96.76        7.49
SRCPARAM DS24L311 1.0          170.49     20.00     184.39     -96.76        4.22
SRCPARAM DS24L314 1.0          164.84     20.00     121.25     -96.76        4.10
SRCPARAM DS24L315 1.0          174.84     20.00     129.31     -96.76        4.10
SRCPARAM DS24L330 1.0          183.14     20.00      29.62     -96.76        4.10
SRCPARAM DS24L331 1.0          190.48     20.00     200.00     -96.76        5.61
SRCPARAM DS24L332 1.0          190.76     20.00      83.61     -96.76        4.17
SRCPARAM DS24L333 1.0          189.77     20.00     118.04     -96.76        4.23
SRCPARAM DS24L334 1.0          191.08     20.00     145.89     -96.76        4.57
SRCPARAM DS24L335 1.0          186.26     20.00      67.14     -96.76        4.10
SRCPARAM DS24L336 1.0          185.54     20.00     200.00     -96.76        4.39
SRCPARAM DS24L337 1.0          190.67     20.00     200.00     -96.76        4.61
SRCPARAM DS24L338 1.0          190.94     20.00     197.95     -96.76        4.68
SRCPARAM DS24L339 1.0          185.21     20.00      81.94     -96.76        4.38
SRCPARAM DS24L340 1.0          189.63     20.00     200.00     -96.76        5.33
SRCPARAM DS24L341 1.0          195.89     20.00     200.00     -96.76        4.33
SRCPARAM DS24L342 1.0          190.11     20.00     159.58     -96.76        4.10
SRCPARAM DS24L344 1.0          189.92     20.00     198.07     -96.76        4.10
SRCPARAM DS24L345 1.0          190.21     20.00     194.81     -96.76        4.34
SRCPARAM DS24L346 1.0          189.91     20.00     185.19     -96.76        4.19
SRCPARAM DS24L347 1.0          186.91     20.00     200.00     -96.76        6.10
SRCPARAM DS24L348 1.0          190.94     20.00     175.13     -96.76        4.20
SRCPARAM DS24L351 1.0          182.82     20.00      70.69     -96.76        4.10
SRCPARAM DS24L352 1.0          192.82     20.00     179.87     -96.76        4.10
SRCPARAM DS24L367 1.0          210.00     20.00      94.37     -96.76        4.10
SRCPARAM DS24L368 1.0          210.00     20.00     170.83     -96.76        4.10
SRCPARAM DS24L369 1.0          200.21     20.00       2.42     -96.76        4.10
SRCPARAM DS24L370 1.0          209.82     20.00     200.00     -96.76        4.35
SRCPARAM DS24L371 1.0          214.07     20.00      78.92     -96.76        4.10
SRCPARAM DS24L372 1.0          210.00     20.00     107.25     -96.76        4.10
SRCPARAM DS24L373 1.0          207.17     20.00     164.44     -96.76        4.89
SRCPARAM DS24L374 1.0          213.84     20.00     200.00     -96.76        4.58
SRCPARAM DS24L375 1.0          210.39     20.00     112.17     -96.76        4.26
SRCPARAM DS24L376 1.0          209.01     20.00     159.48     -96.76        4.26
SRCPARAM DS24L377 1.0          210.46     20.00     198.86     -96.76        4.48
SRCPARAM DS24L378 1.0          202.50     20.00      40.42     -96.76        4.10
SRCPARAM DS24L379 1.0          212.50     20.00     121.04     -96.76        4.10
SRCPARAM DS24L380 1.0          201.68     20.00      28.46     -96.76        4.10
SRCPARAM DS24L381 1.0          210.84     20.00     200.00     -96.76        4.34
SRCPARAM DS24L382 1.0          207.58     20.00     200.00     -96.76        5.84
SRCPARAM DS24L383 1.0          211.16     20.00     200.00     -96.76        4.21
SRCPARAM DS24L384 1.0          206.34     20.00     200.00     -96.76        6.03
SRCPARAM DS24L385 1.0          211.38     20.00     165.87     -96.76        4.17
SRCPARAM DS24L388 1.0          200.80     20.00      20.13     -96.76        4.10
SRCPARAM DS24L389 1.0          209.59     20.00     200.00     -96.76        4.10
```

Table L.2-1
AERMOD Input File for 2005 SAIP Diesel PM Run

SRCPARAM	DS24L390	1.0	218.79	20.00	30.43	-96.76	4.10
SRCPARAM	DS24L403	1.0	224.33	20.00	40.89	-96.76	4.10
SRCPARAM	DS24L404	1.0	228.83	20.00	200.00	-96.76	6.34
SRCPARAM	DS24L405	1.0	232.95	20.00	63.33	-96.76	4.10
SRCPARAM	DS24L406	1.0	227.39	20.00	86.80	-96.76	4.18
SRCPARAM	DS24L407	1.0	233.85	20.00	200.00	-96.76	5.63
SRCPARAM	DS24L408	1.0	225.53	20.00	200.00	-96.76	5.03
SRCPARAM	DS24L409	1.0	226.10	20.00	200.00	-96.76	4.34
SRCPARAM	DS24L410	1.0	230.65	20.00	200.00	-96.76	4.71
SRCPARAM	DS24L411	1.0	229.59	20.00	200.00	-96.76	4.93
SRCPARAM	DS24L412	1.0	228.14	20.00	200.00	-96.76	7.96
SRCPARAM	DS24L413	1.0	228.46	20.00	200.00	-96.76	5.49
SRCPARAM	DS24L414	1.0	232.12	20.00	139.00	-96.76	4.49
SRCPARAM	DS24L415	1.0	224.89	20.00	78.96	-96.76	4.10
SRCPARAM	DS24L416	1.0	234.89	20.00	82.49	-96.76	4.10
SRCPARAM	DS24L417	1.0	223.81	20.00	58.91	-96.76	4.12
SRCPARAM	DS24L418	1.0	232.38	20.00	200.00	-96.76	5.52
SRCPARAM	DS24L419	1.0	227.01	20.00	200.00	-96.76	6.04
SRCPARAM	DS24L420	1.0	233.30	20.00	200.00	-96.76	4.25
SRCPARAM	DS24L421	1.0	226.13	20.00	200.00	-96.76	5.92
SRCPARAM	DS24L422	1.0	231.79	20.00	156.61	-96.76	4.11
SRCPARAM	DS24L426	1.0	226.77	20.00	169.57	-96.76	4.10
SRCPARAM	DS24L427	1.0	236.77	20.00	80.99	-96.76	4.10
SRCPARAM	DS24L440	1.0	249.36	20.00	146.52	-96.76	4.66
SRCPARAM	DS24L441	1.0	250.27	20.00	153.19	-96.76	4.15
SRCPARAM	DS24L443	1.0	249.88	20.00	171.18	-96.76	4.12
SRCPARAM	DS24L444	1.0	250.69	20.00	144.96	-96.76	4.71
SRCPARAM	DS24L445	1.0	250.00	20.00	107.25	-96.76	4.10
SRCPARAM	DS24L446	1.0	247.01	20.00	160.48	-96.76	5.18
SRCPARAM	DS24L447	1.0	253.09	20.00	200.00	-96.76	4.34
SRCPARAM	DS24L448	1.0	250.20	20.00	140.63	-96.76	4.27
SRCPARAM	DS24L449	1.0	247.37	20.00	125.76	-96.76	5.08
SRCPARAM	DS24L450	1.0	249.54	20.00	200.00	-96.76	4.93
SRCPARAM	DS24L451	1.0	255.74	20.00	79.15	-96.76	4.53
SRCPARAM	DS24L452	1.0	247.28	20.00	117.51	-96.76	4.10
SRCPARAM	DS24L453	1.0	257.28	20.00	43.95	-96.76	4.10
SRCPARAM	DS24L454	1.0	247.00	20.00	120.66	-96.76	4.45
SRCPARAM	DS24L455	1.0	252.19	20.00	200.00	-96.76	6.70
SRCPARAM	DS24L456	1.0	247.59	20.00	200.00	-96.76	5.58
SRCPARAM	DS24L457	1.0	255.46	20.00	200.00	-96.76	4.24
SRCPARAM	DS24L458	1.0	245.84	20.00	200.00	-96.76	5.66
SRCPARAM	DS24L459	1.0	252.28	20.00	147.34	-96.76	4.11
SRCPARAM	DS24L463	1.0	244.75	20.00	119.01	-96.76	4.10
SRCPARAM	DS24L464	1.0	254.75	20.00	131.55	-96.76	4.10
SRCPARAM	DS24L476	1.0	265.53	20.00	52.15	-96.76	4.10
SRCPARAM	DS24L477	1.0	268.61	20.00	200.00	-96.76	5.83
SRCPARAM	DS24L478	1.0	275.21	20.00	43.05	-96.76	4.10
SRCPARAM	DS24L479	1.0	264.80	20.00	55.55	-96.76	4.10
SRCPARAM	DS24L480	1.0	273.05	20.00	200.00	-96.76	5.35
SRCPARAM	DS24L481	1.0	266.66	20.00	200.00	-96.76	6.33
SRCPARAM	DS24L482	1.0	266.74	20.00	200.00	-96.76	4.28
SRCPARAM	DS24L483	1.0	270.68	20.00	200.00	-96.76	4.72
SRCPARAM	DS24L484	1.0	268.52	20.00	200.00	-96.76	5.16
SRCPARAM	DS24L485	1.0	274.03	20.00	200.00	-96.76	5.68
SRCPARAM	DS24L486	1.0	269.11	20.00	200.00	-96.76	4.23
SRCPARAM	DS24L487	1.0	270.17	20.00	200.00	-96.76	4.58
SRCPARAM	DS24L488	1.0	278.62	20.00	19.29	-96.76	4.10
SRCPARAM	DS24L489	1.0	269.66	20.00	156.05	-96.76	4.10
SRCPARAM	DS24L490	1.0	279.67	20.00	5.40	-96.76	4.10
SRCPARAM	DS24L491	1.0	268.41	20.00	182.40	-96.76	4.36
SRCPARAM	DS24L492	1.0	271.25	20.00	200.00	-96.76	6.57
SRCPARAM	DS24L493	1.0	268.71	20.00	200.00	-96.76	5.00
SRCPARAM	DS24L494	1.0	277.31	20.00	200.00	-96.76	4.81
SRCPARAM	DS24L495	1.0	265.68	20.00	200.00	-96.76	5.48
SRCPARAM	DS24L496	1.0	272.80	20.00	138.08	-96.76	4.13
SRCPARAM	DS24L500	1.0	262.73	20.00	68.45	-96.76	4.10
SRCPARAM	DS24L501	1.0	272.73	20.00	182.11	-96.76	4.10
SRCPARAM	DS24L513	1.0	291.29	20.00	157.79	-96.76	5.03
SRCPARAM	DS24L514	1.0	292.91	20.00	154.47	-96.76	4.29
SRCPARAM	DS24L516	1.0	291.83	20.00	139.93	-96.76	4.31
SRCPARAM	DS24L517	1.0	293.24	20.00	200.00	-96.76	6.84

Table L.2-1
AERMOD Input File for 2005 SAIP Diesel PM Run

SRCPARAM	DS24L518	1.0	292.79	20.00	200.00	-96.76	4.68
SRCPARAM	DS24L519	1.0	289.02	20.00	200.00	-96.76	6.17
SRCPARAM	DS24L520	1.0	294.51	20.00	200.00	-96.76	4.52
SRCPARAM	DS24L521	1.0	293.88	20.00	196.49	-96.76	5.15
SRCPARAM	DS24L522	1.0	286.69	20.00	92.04	-96.76	4.26
SRCPARAM	DS24L523	1.0	290.21	20.00	200.00	-96.76	6.50
SRCPARAM	DS24L524	1.0	295.31	20.00	193.07	-96.76	4.62
SRCPARAM	DS24L526	1.0	292.05	20.00	194.60	-96.76	4.10
SRCPARAM	DS24L527	1.0	284.80	20.00	200.00	-96.76	6.95
SRCPARAM	DS24L528	1.0	291.45	20.00	200.00	-96.76	5.25
SRCPARAM	DS24L529	1.0	294.02	20.00	200.00	-96.76	7.36
SRCPARAM	DS24L530	1.0	290.95	20.00	200.00	-96.76	5.32
SRCPARAM	DS24L531	1.0	301.39	20.00	200.00	-96.76	5.78
SRCPARAM	DS24L532	1.0	286.28	20.00	200.00	-96.76	5.91
SRCPARAM	DS24L533	1.0	295.87	20.00	174.60	-96.76	4.26
SRCPARAM	DS24L537	1.0	280.71	20.00	17.89	-96.76	4.10
SRCPARAM	DS24L538	1.0	289.41	20.00	200.00	-96.76	4.10
SRCPARAM	DS24L539	1.0	301.10	20.00	92.80	-96.76	4.10
SRCPARAM	AS24L001	1.0	16.00	20.00	152.66	-96.76	4.10
SRCPARAM	AS24L037	1.0	21.27	20.00	57.60	-96.76	4.10
SRCPARAM	AS24L038	1.0	27.80	20.00	200.00	-96.76	4.11
SRCPARAM	AS24L039	1.0	36.52	20.00	136.68	-96.76	4.10
SRCPARAM	AS24L075	1.0	41.84	20.00	100.39	-96.76	4.11
SRCPARAM	AS24L076	1.0	48.86	20.00	200.00	-96.76	4.15
SRCPARAM	AS24L077	1.0	57.02	20.00	118.47	-96.76	4.11
SRCPARAM	AS24L113	1.0	62.41	20.00	142.50	-96.76	4.14
SRCPARAM	AS24L114	1.0	69.93	20.00	200.00	-96.76	4.22
SRCPARAM	AS24L115	1.0	77.47	20.00	99.89	-96.76	4.11
SRCPARAM	AS24L151	1.0	82.99	20.00	184.60	-96.76	4.18
SRCPARAM	AS24L152	1.0	90.90	20.00	200.00	-96.76	4.25
SRCPARAM	AS24L153	1.0	97.93	20.00	81.31	-96.76	4.10
SRCPARAM	AS24L188	1.0	100.75	20.00	26.71	-96.76	4.10
SRCPARAM	AS24L189	1.0	103.62	20.00	200.00	-96.76	4.29
SRCPARAM	AS24L190	1.0	111.81	20.00	200.00	-96.76	4.23
SRCPARAM	AS24L191	1.0	118.41	20.00	62.73	-96.76	4.10
SRCPARAM	AS24L226	1.0	121.92	20.00	68.81	-96.76	4.10
SRCPARAM	AS24L227	1.0	124.23	20.00	200.00	-96.76	4.46
SRCPARAM	AS24L228	1.0	132.71	20.00	200.00	-96.76	4.20
SRCPARAM	AS24L229	1.0	138.89	20.00	44.14	-96.76	4.10
SRCPARAM	AS24L264	1.0	143.10	20.00	110.92	-96.76	4.10
SRCPARAM	AS24L265	1.0	144.82	20.00	200.00	-96.76	4.65
SRCPARAM	AS24L266	1.0	153.59	20.00	200.00	-96.76	4.16
SRCPARAM	AS24L267	1.0	159.37	20.00	25.56	-96.76	4.10
SRCPARAM	AS24L302	1.0	164.28	20.00	153.02	-96.76	4.10
SRCPARAM	AS24L303	1.0	165.39	20.00	200.00	-96.76	4.86
SRCPARAM	AS24L304	1.0	174.47	20.00	200.00	-96.76	4.11
SRCPARAM	AS24L305	1.0	179.85	20.00	6.98	-96.76	4.10
SRCPARAM	AS24L340	1.0	185.45	20.00	195.13	-96.76	4.10
SRCPARAM	AS24L341	1.0	185.73	20.00	200.00	-96.76	4.80
SRCPARAM	AS24L342	1.0	195.09	20.00	188.40	-96.76	4.10
SRCPARAM	AS24L377	1.0	201.04	20.00	37.23	-96.76	4.10
SRCPARAM	AS24L378	1.0	204.38	20.00	200.00	-96.76	5.49
SRCPARAM	AS24L379	1.0	206.39	20.00	200.00	-96.76	4.67
SRCPARAM	AS24L380	1.0	215.57	20.00	169.82	-96.76	4.10
SRCPARAM	AS24L415	1.0	222.22	20.00	79.34	-96.76	4.10
SRCPARAM	AS24L416	1.0	223.90	20.00	200.00	-96.76	5.97
SRCPARAM	AS24L417	1.0	227.20	20.00	200.00	-96.76	4.50
SRCPARAM	AS24L418	1.0	236.06	20.00	151.24	-96.76	4.10
SRCPARAM	AS24L453	1.0	243.39	20.00	121.44	-96.76	4.10
SRCPARAM	AS24L454	1.0	243.97	20.00	200.00	-96.76	6.26
SRCPARAM	AS24L455	1.0	247.99	20.00	200.00	-96.76	4.31
SRCPARAM	AS24L456	1.0	256.54	20.00	132.66	-96.76	4.10
SRCPARAM	AS24L491	1.0	264.57	20.00	163.55	-96.76	4.10
SRCPARAM	AS24L492	1.0	264.13	20.00	200.00	-96.76	6.43
SRCPARAM	AS24L493	1.0	268.80	20.00	200.00	-96.76	4.10
SRCPARAM	AS24L494	1.0	277.02	20.00	114.08	-96.76	4.10
SRCPARAM	AS24L528	1.0	280.16	20.00	5.65	-96.76	4.10
SRCPARAM	AS24L529	1.0	285.90	20.00	200.00	-96.76	4.10
SRCPARAM	AS24L530	1.0	284.55	20.00	200.00	-96.76	6.74
SRCPARAM	AS24L531	1.0	289.97	20.00	200.00	-96.76	4.43
SRCPARAM	AS24L532	1.0	299.90	20.00	187.04	-96.76	4.10

Table L.2-1
AERMOD Input File for 2005 SAIP Diesel PM Run

```
** --------------------------------------------------------------
**  AREAPOLY SOURCE PARAMETERS:   HEIGHT     POINTS   SIGMA-Z0
** --------------------------------------------------------------
   SRCPARAM PARK_001 1.0            1.00          4       3.00
   SRCPARAM PARK_002 1.0            1.00          4       3.00
   SRCPARAM PARK_003 1.0            1.00          4       3.00
   SRCPARAM PARK_004 1.0            1.00          4       3.00
   SRCPARAM PARK_005 1.0            1.00          4       3.00
   SRCPARAM PARK_006 1.0            1.00          4       3.00
   SRCPARAM PARK_007 1.0            1.00          4       3.00
   SRCPARAM PARK_008 1.0            1.00          4       3.00
   SRCPARAM PARK_009 1.0            1.00          4       3.00
   SRCPARAM PARK_010 1.0            1.00          4       3.00
   SRCPARAM PARK_011 1.0            1.00          4       3.00
   SRCPARAM PARK_012 1.0            1.00          4       3.00
   SRCPARAM PARK_013 1.0            1.00          4       3.00
   AREAVERT PARK_013     600.00     530.00    1225.00     530.00    1225.00     930.00     600.00     930.00
   AREAVERT PARK_012    1240.00     530.00    1520.00     530.00    1520.00    1130.00    1240.00    1130.00
   AREAVERT PARK_011    2234.50    -999.30    2970.50    -999.30    2970.50    -338.30    2234.50    -338.30
   AREAVERT PARK_010     335.00     670.00     485.00     670.00     485.00     870.00     335.00     870.00
   AREAVERT PARK_009     300.00     165.00     560.00     165.00     560.00     435.00     300.00     435.00
   AREAVERT PARK_008      95.00     -90.00     335.00     -90.00     335.00      -3.00      95.00      -3.00
   AREAVERT PARK_007    -190.00    -135.00     -68.00    -135.00     -68.00     -68.00    -190.00     -68.00
   AREAVERT PARK_006    -290.00    -150.00    -218.00    -150.00    -218.00     -54.00    -290.00     -54.00
   AREAVERT PARK_005    -495.00    -165.00    -375.00    -165.00    -375.00     -95.00    -495.00     -95.00
   AREAVERT PARK_004    -510.00     -10.00    -390.00     -10.00    -390.00      55.00    -510.00      55.00
   AREAVERT PARK_003    -200.00      35.00     -70.00      35.00     -70.00      91.00    -200.00      91.00
   AREAVERT PARK_002    -300.00      10.00    -227.00      10.00    -227.00      86.00    -300.00      86.00
   AREAVERT PARK_001      80.00      20.00     245.00      20.00     245.00      95.00      80.00      95.00
** ----------------------------------------
**  HOURLY EMISSION FILE:
** ----------------------------------------
   HOUREMIS DIESEL05.HRE RD000000-RD999999
   HOUREMIS DIESEL05.HRE PARK_000-PARK_999
   HOUREMIS DIESEL05.HRE PARKA000-PARKT999
   HOUREMIS DIESEL05.HRE FIRE_000-FIRE_999
   HOUREMIS DIESEL05.HRE STAT_000-STAT_999
   HOUREMIS DIESEL05.HRE GATE_000-GATE_999
   HOUREMIS DIESEL05.HRE TW000000-TW999999
   HOUREMIS DIESEL05.HRE QU00C000-QU36X999
   HOUREMIS DIESEL05.HRE RW00C000-RW36X999
   HOUREMIS DIESEL05.HRE DS00C000-DS36X999
   HOUREMIS DIESEL05.HRE AS00C000-AS36X999
** ----------------------------------------
**  SOURCE GROUP DEFINITIONS:
** ----------------------------------------
   SRCGROUP PARKING  PARK_000-PARK_999
   SRCGROUP PARKING  PARKA000-PARKT999
   SRCGROUP ROADWAYS RD000000-RD999999
   SRCGROUP STATSRCS STAT_000-STAT_999
   SRCGROUP FIRES    FIRE_000-FIRE_999
   SRCGROUP GATES    GATE_000-GATE_999
   SRCGROUP AIRCRATW TW000000-TW999999
   SRCGROUP AIRCRAQU QU00C000-QU36X999
   SRCGROUP AIRCRADS DS00C000-DS36X999
   SRCGROUP AIRCRAAS AS00C000-AS36X999
   SRCGROUP AIRCRARW RW00C000-RW36X999
   SRCGROUP ACUTE2 L0000617 L0000618 L0000619 L0000620 L0000621 L0000622
   SRCGROUP ACUTE2 L0000623 L0000624 L0000625 L0000626 L0000627 L0000628
   SRCGROUP ACUTE2 L0000629 L0000630 L0000631 L0000632 L0000633 L0000634
   SRCGROUP ACUTE2 L0000635 L0000636 L0000637 L0000638 L0000639 L0000640
   SRCGROUP ACUTE2 L0000641 L0000642 L0000643 L0000644 L0000645 L0000646
   SRCGROUP ACUTE2 L0000647 L0000648 L0000649 L0000650
   SRCGROUP ACUTE1 L0000001 L0000002 L0000003 L0000004 L0000005 L0000006
   SRCGROUP ACUTE1 L0000007 L0000008 L0000009 L0000010 L0000011 L0000012
   SRCGROUP ACUTE1 L0000013 L0000014 L0000015 L0000016 L0000017 L0000018
   SRCGROUP ACUTE1 L0000019 L0000020 L0000021 L0000022 L0000023 L0000024
   SRCGROUP ACUTE1 L0000025 L0000026 L0000027 L0000028 L0000029 L0000030
   SRCGROUP ACUTE1 L0000031 L0000032 L0000033 L0000034
   SRCGROUP ALL
** ----------------------------------------
SO FINISHED
```

Table L.2-1
AERMOD Input File for 2005 SAIP Diesel PM Run

```
RE STARTING
   ELEVUNIT METERS
** ------------------------------------------------------------
**  CARTESIAN RECEPTORS
** ------------------------------------------------------------
   DISCCART   -2557.000000    1306.000000 0.00 0.00       1.800000
   DISCCART   -2168.000000    1103.000000 0.00 0.00       1.800000
   DISCCART   -1868.000000    1096.000000 0.00 0.00       1.800000
   DISCCART   -1605.000000    1217.000000 0.00 0.00       1.800000
   DISCCART   -1427.000000    1322.000000 0.00 0.00       1.800000
   DISCCART   -1236.000000    1381.000000 0.00 0.00       1.800000
   DISCCART    -624.000000    1445.000000 0.00 0.00       1.800000
   DISCCART    -324.000000    1447.000000 0.00 0.00       1.800000
   DISCCART    -189.000000    1448.000000 0.00 0.00       1.800000
   DISCCART    -184.000000    1335.000000 0.00 0.00       1.800000
   DISCCART      11.000000    1402.000000 0.00 0.00       1.800000
   DISCCART       4.000000    1452.000000 0.00 0.00       1.800000
   DISCCART     304.000000    1452.000000 0.00 0.00       1.800000
   DISCCART     402.000000    1452.000000 0.00 0.00       1.800000
   DISCCART     401.000000    1152.000000 0.00 0.00       1.800000
   DISCCART     401.000000    1124.000000 0.00 0.00       1.800000
   DISCCART     458.000000    1022.000000 0.00 0.00       1.800000
   DISCCART     584.000000    1022.000000 0.00 0.00       1.800000
   DISCCART     584.000000     949.000000 0.00 0.00       1.800000
   DISCCART     657.000000     950.000000 0.00 0.00       1.800000
   DISCCART     718.000000    1067.000000 0.00 0.00       1.800000
   DISCCART     772.000000    1112.000000 0.00 0.00       1.800000
   DISCCART     964.000000    1205.000000 0.00 0.00       1.800000
   DISCCART    1207.000000    1380.000000 0.00 0.00       1.800000
   DISCCART    1314.000000    1457.000000 0.00 0.00       1.800000
   DISCCART    1425.000000    1326.000000 0.00 0.00       1.800000
   DISCCART    1498.000000    1237.000000 0.00 0.00       1.800000
   DISCCART    1536.000000     930.000000 0.00 0.00       1.800000
   DISCCART    1524.000000     630.000000 0.00 0.00       1.800000
   DISCCART    1521.000000     534.000000 0.00 0.00       1.800000
   DISCCART    1228.000000     532.000000 0.00 0.00       1.800000
   DISCCART     928.000000     521.000000 0.00 0.00       1.800000
   DISCCART     628.000000     510.000000 0.00 0.00       1.800000
   DISCCART     575.000000     509.000000 0.00 0.00       1.800000
   DISCCART     575.000000     444.000000 0.00 0.00       1.800000
   DISCCART     296.000000     444.000000 0.00 0.00       1.800000
   DISCCART     296.000000     165.000000 0.00 0.00       1.800000
   DISCCART     595.000000     162.000000 0.00 0.00       1.800000
   DISCCART     895.000000     160.000000 0.00 0.00       1.800000
   DISCCART    1195.000000     158.000000 0.00 0.00       1.800000
   DISCCART    1495.000000     156.000000 0.00 0.00       1.800000
   DISCCART    1795.000000     154.000000 0.00 0.00       1.800000
   DISCCART    2095.000000     152.000000 0.00 0.00       1.800000
   DISCCART    2212.000000     152.000000 0.00 0.00       1.800000
   DISCCART    2212.000000    -148.000000 0.00 0.00       1.800000
   DISCCART    2212.000000    -305.000000 0.00 0.00       1.800000
   DISCCART    2502.000000    -305.000000 0.00 0.00       1.800000
   DISCCART    2991.000000    -376.000000 0.00 0.00       1.800000
   DISCCART    2991.000000    -676.000000 0.00 0.00       1.800000
   DISCCART    2991.000000    -976.000000 0.00 0.00       1.800000
   DISCCART    2991.000000   -1078.000000 0.00 0.00       1.800000
   DISCCART    2763.000000   -1074.000000 0.00 0.00       1.800000
   DISCCART    2697.000000   -1074.000000 0.00 0.00       1.800000
   DISCCART    2550.000000   -1076.000000 0.00 0.00       1.800000
   DISCCART    2551.000000   -1375.000000 0.00 0.00       1.800000
   DISCCART    2552.000000   -1462.000000 0.00 0.00       1.800000
   DISCCART    2252.000000   -1470.000000 0.00 0.00       1.800000
   DISCCART    2216.000000   -1471.000000 0.00 0.00       1.800000
   DISCCART    1916.000000   -1469.000000 0.00 0.00       1.800000
   DISCCART    1616.000000   -1467.000000 0.00 0.00       1.800000
   DISCCART    1316.000000   -1466.000000 0.00 0.00       1.800000
   DISCCART    1016.000000   -1464.000000 0.00 0.00       1.800000
   DISCCART     716.000000   -1462.000000 0.00 0.00       1.800000
   DISCCART     590.000000   -1462.000000 0.00 0.00       1.800000
   DISCCART     575.000000   -1211.000000 0.00 0.00       1.800000
   DISCCART     353.000000   -1365.000000 0.00 0.00       1.800000
```

Table L.2-1
AERMOD Input File for 2005 SAIP Diesel PM Run

```
   DISCCART      54.000000   -1398.000000 0.00 0.00       1.800000
   DISCCART      18.000000   -1403.000000 0.00 0.00       1.800000
   DISCCART    -250.000000   -1430.000000 0.00 0.00       1.800000
   DISCCART    -549.000000   -1428.000000 0.00 0.00       1.800000
   DISCCART    -849.000000   -1427.000000 0.00 0.00       1.800000
   DISCCART   -1149.000000   -1426.000000 0.00 0.00       1.800000
   DISCCART   -1449.000000   -1425.000000 0.00 0.00       1.800000
   DISCCART   -1749.000000   -1424.000000 0.00 0.00       1.800000
   DISCCART   -2049.000000   -1422.000000 0.00 0.00       1.800000
   DISCCART   -2265.000000   -1422.000000 0.00 0.00       1.800000
   DISCCART   -2496.000000   -1460.000000 0.00 0.00       1.800000
   DISCCART   -2795.000000   -1464.000000 0.00 0.00       1.800000
   DISCCART   -2000.000000   -1500.000000 0.00 0.00       1.800000
   DISCCART   -1500.000000   -1500.000000 0.00 0.00       1.800000
   DISCCART   -1000.000000   -1500.000000 0.00 0.00       1.800000
   DISCCART   -1000.000000    1500.000000 0.00 0.00       1.800000
   DISCCART    -500.000000   -1500.000000 0.00 0.00       1.800000
   DISCCART    -500.000000    1500.000000 0.00 0.00       1.800000
   DISCCART       0.000000   -1500.000000 0.00 0.00       1.800000
   DISCCART     500.000000   -1500.000000 0.00 0.00       1.800000
   DISCCART     500.000000    1500.000000 0.00 0.00       1.800000
   DISCCART    1000.000000   -1500.000000 0.00 0.00       1.800000
   DISCCART    1000.000000    1500.000000 0.00 0.00       1.800000
   DISCCART    1500.000000   -1500.000000 0.00 0.00       1.800000
   DISCCART    1500.000000     500.000000 0.00 0.00       1.800000
   DISCCART    1500.000000    1500.000000 0.00 0.00       1.800000
   DISCCART    2000.000000   -1500.000000 0.00 0.00       1.800000
   DISCCART    2000.000000     500.000000 0.00 0.00       1.800000
   DISCCART    2000.000000    1000.000000 0.00 0.00       1.800000
   DISCCART    2500.000000   -1500.000000 0.00 0.00       1.800000
   DISCCART    2500.000000       0.000000 0.00 0.00       1.800000
   DISCCART    2500.000000     500.000000 0.00 0.00       1.800000
   DISCCART    2500.000000    1000.000000 0.00 0.00       1.800000
   DISCCART    3000.000000    -500.000000 0.00 0.00       1.800000
   DISCCART    3000.000000       0.000000 0.00 0.00       1.800000
   DISCCART       0.000000      20.000000 0.00 0.00       1.800000
RE FINISHED

ME STARTING
   SURFFILE C:\Met\OS_96.SFC
   PROFFILE C:\Met\OS_96.PFL
   SURFDATA     23174 96
   UAIRDATA  00003190 96
   PROFBASE      0.00 METERS
ME FINISHED

OU STARTING
   RECTABLE ALLAVE 1ST
   POSTFILE 1 ALL PLOT 1HRALL.PLT
OU FINISHED
```

Table L.2-2
AERMOD Input File for 2003 Baseline Diesel PM Run

```
CO STARTING
   TITLEONE SAIP BASELINE
   TITLETWO EDMS421
   MODELOPT CONC DFAULT
   AVERTIME 1 ANNUAL
   POLLUTID D-PM10
   FLAGPOLE 1.8
   RUNORNOT RUN
   SAVEFILE
CO FINISHED

SO STARTING
** ---------------------------------------------------------------
**  SOURCE TYPE          EDMS SOURCE NAMES    AERMOD SOURCE NAMES
** ---------------------------------------------------------------
**  Parking Facility     CTA Structure 1      PARK_001
**                       CTA Structure 2      PARK_002
**                       CTA Structure 2A     PARK_003
**                       CTA Structure 3      PARK_004
**                       CTA Structure 4      PARK_005
**                       CTA Structure 5      PARK_006
**                       CTA Structure 6      PARK_007
**                       CTA Structure 7      PARK_008
**                       East Side Private    PARK_009
**                       East Side Staging    PARK_010
**                       Eastside Employee    PARK_011
**                       Eastside RAC         PARK_012
**                       Eastside Remote      PARK_013
**  Stationary Source    East Cup             STAT_001
**                       Restaurant 1         STAT_002
**                       Restaurant 2         STAT_003
**                       Restaurant 3         STAT_004
**                       Restaurant 4         STAT_005
**                       Flight Kitchens      STAT_006
**                       East Cup CT          STAT_007
**                       ENGTEST1             STAT_008
**                       ENGTEST3             STAT_009
**                       ENGTEST4             STAT_010
**                       ENGTEST5             STAT_011
**                       Maint1               STAT_012
**                       Maint2               STAT_013
**                       Maint3               STAT_014
**                       Maint4               STAT_015
**                       Northside            STAT_016
**                       ENGTEST6             STAT_017
**  Gate                 CA3                  GATE_001
**                       GA1                  GATE_002
**                       GA2                  GATE_003
**                       T1                   GATE_004
**                       T2                   GATE_005
**                       T3                   GATE_006
**                       TBIT N               GATE_007
**                       TBIT S               GATE_008
**                       T4                   GATE_009
**                       T5                   GATE_010
**                       T6                   GATE_011
**                       T7                   GATE_012
**                       T8                   GATE_013
**                       IWP                  GATE_014
**                       UZ                   GATE_015
**                       R1                   GATE_016
**  Roadway              Center Way           RD001001
**                                            RD001002
**                                            RD001003
**                                            RD001004
**                                            RD001005
**                                            RD001006
**                       Century              RD002001
**                       East Way             RD003001
**                                            RD003002
**                       FEDXCAR1             RD004001
```

Table L.2-2
AERMOD Input File for 2003 Baseline Diesel PM Run

```
**          FEDXCAR2          RD005001
**                            RD005002
**          FEDXCAR3          RD006001
**          GARRETT1          RD007001
**                            RD007002
**          N. Sepulveda      RD008001
**                            RD008002
**          NECARGO1          RD009001
**          NECARGO10         RD010001
**                            RD010002
**          NECARGO2          RD011001
**          NECARGO3          RD012001
**          NECARGO4          RD013001
**                            RD013002
**                            RD013003
**          NECARGO5          RD014001
**          NECARGO6          RD015001
**                            RD015002
**                            RD015003
**          NECARGO7          RD016001
**                            RD016002
**          NECARGO8          RD017001
**                            RD017002
**                            RD017003
**          NECARGO9          RD018001
**                            RD018002
**          Re-Circulation    RD019001
**                            RD019002
**          S. Sepulveda      RD020001
**                            RD020002
**                            RD020003
**          SCARGO            RD021001
**                            RD021002
**          SECARGO1          RD022001
**                            RD022002
**                            RD022003
**          SECARGO2          RD023001
**                            RD023002
**                            RD023003
**          SECARGO3          RD024001
**                            RD024002
**                            RD024003
**          Spine Rd/World Way RD025001
**                            RD025002
**                            RD025003
**                            RD025004
**                            RD025005
**                            RD025006
**                            RD025007
**                            RD025008
**                            RD025009
**                            RD025010
**          SWANCIL1          RD026001
**                            RD026002
**                            RD026003
**                            RD026004
**                            RD026005
**          SWCARGO1          RD027001
**                            RD027002
**                            RD027003
**                            RD027004
**                            RD027005
**          T1                RD028001
**                            RD028002
**                            RD028003
**          T2                RD029001
**                            RD029002
**          T3                RD030001
**                            RD030002
**          T4                RD031001
**                            RD031002
```

Table L.2-2
AERMOD Input File for 2003 Baseline Diesel PM Run

```
**                    T5                    RD032001
**                    T6                    RD033001
**                                          RD033002
**                    T7                    RD034001
**                                          RD034002
**                    T8                    RD035001
**                                          RD035002
**                    TBIT                  RD036001
**                                          RD036002
**                    West Way              RD037001
**                                          RD037002
**  Taxiway           48                    TW001001
**                                          TW001002
**                                          TW001003
**                                          TW001004
**                                          TW001005
**                                          TW001006
**                    49                    TW002001
**                                          TW002002
**                                          TW002003
**                                          TW002004
**                                          TW002005
**                                          TW002006
**                    75                    TW003001
**                                          TW003002
**                                          TW003003
**                                          TW003004
**                                          TW003005
**                                          TW003006
**                    F (East)              TW004001
**                                          TW004002
**                                          TW004003
**                                          TW004004
**                                          TW004005
**                                          TW004006
**                    J (East)              TW005001
**                                          TW005002
**                                          TW005003
**                                          TW005004
**                                          TW005005
**                                          TW005006
**                                          TW005007
**                                          TW005008
**                                          TW005009
**                                          TW005010
**                                          TW005011
**                                          TW005012
**                                          TW005013
**                                          TW005014
**                    J (West)              TW006001
**                                          TW006002
**                                          TW006003
**                                          TW006004
**                                          TW006005
**                                          TW006006
**                                          TW006007
**                                          TW006008
**                    U (West)              TW007001
**                                          TW007002
**                                          TW007003
**                    U (Ctr)               TW008001
**                                          TW008002
**                                          TW008003
**                                          TW008004
**                                          TW008005
**                                          TW008006
**                                          TW008007
**                                          TW008008
**                    U (East)              TW009001
**                                          TW009002
**                                          TW009003
```

Table L.2-2
AERMOD Input File for 2003 Baseline Diesel PM Run

```
**                                        TW009004
**                                        TW009005
**                    CADEP               TW010001
**                                        TW010002
**                                        TW010003
**                                        TW010004
**                                        TW010005
**                                        TW010006
**                                        TW010007
**                                        TW010008
**                    JTERM               TW011001
**                                        TW011002
**                                        TW011003
**                                        TW011004
**                                        TW011005
**                                        TW011006
**                                        TW011007
**  Queue             25R                 QU25R001
**                                        QU25R002
**                                        QU25R003
**                                        QU25R004
**  Runway            7L-25R              RW07L001
**                                        RW07L002
**                                        RW07L003
**                                        RW07L004
**                                        RW07L005
**                                        RW07L006
**                                        RW07L007
**                                        RW07L008
**                                        RW07L009
**                                        RW07L010
**                                        RW07L011
**                                        RW07L012
**                                        RW07L013
**                                        RW07L014
**                                        RW07L015
**                                        RW07L016
**                                        RW07L017
**                                        RW07L018
**                                        RW07L019
**                                        RW07L020
**                                        RW07L021
**                                        RW07L022
**                                        RW07L023
**                                        RW07L024
**                                        RW07L025
**                                        RW07L026
**                                        RW07L027
**                                        RW07L028
**                                        RW07L029
**                                        RW07L030
**                                        RW07L031
**                                        RW07L032
**                                        RW07L033
**                                        RW07L034
**                                        RW07L035
**                                        RW07L036
**                                        RW07L037
**                                        RW07L038
**                                        RW07L039
**                                        RW07L040
**                                        RW07L041
**                                        RW07L042
**                                        RW07L043
**                                        RW07L044
**                                        RW07L045
**                                        RW07L046
**                                        RW07L047
**                                        RW07L048
**                                        RW07L049
**                                        RW07L050
```

Table L.2-2
AERMOD Input File for 2003 Baseline Diesel PM Run

```
**                                              RW07L051
**                                              RW07L052
**                                              RW07L053
**                                              RW07L054
**                                              RW07L055
**                                              RW07L056
**                                              RW07L057
**                                              RW07L058
**                                              RW07L059
**                                              RW07L060
**                                              RW07L061
**                                              RW07L062
**                                              RW07L063
**                                              RW07L064
**                                              RW07L065
**                                              RW07L066
**                                              RW07L067
**                                              RW07L068
**                                              RW07L069
**                                              RW07L070
**                                              RW07L071
**                                              RW07L072
**                                              RW07L073
**                                              RW07L074
**  Departure Space      25R                    DS25R002
**                                              DS25R003
**                                              DS25R004
**                                              DS25R007
**                                              DS25R008
**                                              DS25R009
**                                              DS25R010
**                                              DS25R011
**                                              DS25R012
**                                              DS25R013
**                                              DS25R014
**                                              DS25R015
**                                              DS25R016
**                                              DS25R039
**                                              DS25R040
**                                              DS25R041
**                                              DS25R043
**                                              DS25R044
**                                              DS25R045
**                                              DS25R046
**                                              DS25R047
**                                              DS25R048
**                                              DS25R049
**                                              DS25R050
**                                              DS25R051
**                                              DS25R052
**                                              DS25R053
**                                              DS25R075
**                                              DS25R076
**                                              DS25R077
**                                              DS25R079
**                                              DS25R080
**                                              DS25R081
**                                              DS25R082
**                                              DS25R083
**                                              DS25R084
**                                              DS25R085
**                                              DS25R086
**                                              DS25R087
**                                              DS25R088
**                                              DS25R089
**                                              DS25R090
**                                              DS25R112
**                                              DS25R113
**                                              DS25R114
**                                              DS25R116
**                                              DS25R117
```

Table L.2-2
AERMOD Input File for 2003 Baseline Diesel PM Run

```
**          DS25R118
**          DS25R119
**          DS25R120
**          DS25R121
**          DS25R122
**          DS25R123
**          DS25R124
**          DS25R125
**          DS25R126
**          DS25R127
**          DS25R148
**          DS25R149
**          DS25R150
**          DS25R151
**          DS25R152
**          DS25R153
**          DS25R154
**          DS25R155
**          DS25R156
**          DS25R157
**          DS25R158
**          DS25R159
**          DS25R160
**          DS25R161
**          DS25R162
**          DS25R163
**          DS25R164
**          DS25R184
**          DS25R185
**          DS25R186
**          DS25R187
**          DS25R188
**          DS25R189
**          DS25R190
**          DS25R191
**          DS25R192
**          DS25R193
**          DS25R194
**          DS25R196
**          DS25R197
**          DS25R198
**          DS25R199
**          DS25R200
**          DS25R201
**          DS25R221
**          DS25R222
**          DS25R223
**          DS25R224
**          DS25R226
**          DS25R227
**          DS25R228
**          DS25R229
**          DS25R230
**          DS25R231
**          DS25R233
**          DS25R234
**          DS25R235
**          DS25R236
**          DS25R237
**          DS25R238
**          DS25R257
**          DS25R258
**          DS25R259
**          DS25R260
**          DS25R261
**          DS25R262
**          DS25R263
**          DS25R264
**          DS25R265
**          DS25R266
**          DS25R267
```

Table L.2-2
AERMOD Input File for 2003 Baseline Diesel PM Run

```
**                                                  DS25R268
**                                                  DS25R270
**                                                  DS25R271
**                                                  DS25R272
**                                                  DS25R273
**                                                  DS25R274
**                                                  DS25R294
**                                                  DS25R295
**                                                  DS25R296
**                                                  DS25R297
**                                                  DS25R298
**                                                  DS25R299
**                                                  DS25R300
**                                                  DS25R301
**                                                  DS25R302
**                                                  DS25R303
**                                                  DS25R304
**                                                  DS25R305
**                                                  DS25R306
**                                                  DS25R307
**                                                  DS25R308
**                                                  DS25R309
**                                                  DS25R310
**                                                  DS25R311
**                                                  DS25R330
**                                                  DS25R331
**                                                  DS25R332
**                                                  DS25R333
**                                                  DS25R334
**                                                  DS25R335
**                                                  DS25R336
**                                                  DS25R337
**                                                  DS25R338
**                                                  DS25R339
**                                                  DS25R340
**                                                  DS25R341
**                                                  DS25R342
**                                                  DS25R343
**                                                  DS25R344
**                                                  DS25R345
**                                                  DS25R346
**                                                  DS25R347
**                                                  DS25R348
**                                                  DS25R367
**                                                  DS25R368
**                                                  DS25R369
**                                                  DS25R370
**                                                  DS25R371
**                                                  DS25R372
**                                                  DS25R373
**                                                  DS25R374
**                                                  DS25R375
**                                                  DS25R376
**                                                  DS25R377
**                                                  DS25R379
**                                                  DS25R380
**                                                  DS25R381
**                                                  DS25R382
**                                                  DS25R383
**                                                  DS25R384
**                                                  DS25R385
**                                                  DS25R403
**                                                  DS25R404
**                                                  DS25R405
**                                                  DS25R406
**                                                  DS25R407
**                                                  DS25R408
**                                                  DS25R409
**                                                  DS25R410
**                                                  DS25R411
**                                                  DS25R412
```

Table L.2-2
AERMOD Input File for 2003 Baseline Diesel PM Run

```
**                                             DS25R413
**                                             DS25R414
**                                             DS25R416
**                                             DS25R417
**                                             DS25R418
**                                             DS25R419
**                                             DS25R420
**                                             DS25R421
**                                             DS25R422
**                                             DS25R440
**                                             DS25R441
**                                             DS25R442
**                                             DS25R443
**                                             DS25R444
**                                             DS25R445
**                                             DS25R446
**                                             DS25R447
**                                             DS25R448
**                                             DS25R449
**                                             DS25R450
**                                             DS25R451
**                                             DS25R454
**                                             DS25R455
**                                             DS25R456
**                                             DS25R457
**                                             DS25R458
**                                             DS25R459
**                                             DS25R476
**                                             DS25R477
**                                             DS25R478
**                                             DS25R479
**                                             DS25R480
**                                             DS25R481
**                                             DS25R482
**                                             DS25R483
**                                             DS25R484
**                                             DS25R485
**                                             DS25R486
**                                             DS25R487
**                                             DS25R488
**                                             DS25R491
**                                             DS25R492
**                                             DS25R493
**                                             DS25R494
**                                             DS25R495
**                                             DS25R496
**                                             DS25R513
**                                             DS25R514
**                                             DS25R515
**                                             DS25R516
**                                             DS25R517
**                                             DS25R518
**                                             DS25R519
**                                             DS25R520
**                                             DS25R521
**                                             DS25R522
**                                             DS25R523
**                                             DS25R524
**                                             DS25R527
**                                             DS25R528
**                                             DS25R529
**                                             DS25R530
**                                             DS25R531
**                                             DS25R532
**                                             DS25R533
**  Approach Space       25R                   AS25R001
**                                             AS25R037
**                                             AS25R038
**                                             AS25R039
**                                             AS25R075
**                                             AS25R076
```

Table L.2-2
AERMOD Input File for 2003 Baseline Diesel PM Run

```
**                                                AS25R077
**                                                AS25R113
**                                                AS25R114
**                                                AS25R115
**                                                AS25R151
**                                                AS25R152
**                                                AS25R153
**                                                AS25R188
**                                                AS25R189
**                                                AS25R190
**                                                AS25R191
**                                                AS25R226
**                                                AS25R227
**                                                AS25R228
**                                                AS25R229
**                                                AS25R264
**                                                AS25R265
**                                                AS25R266
**                                                AS25R267
**                                                AS25R302
**                                                AS25R303
**                                                AS25R304
**                                                AS25R305
**                                                AS25R340
**                                                AS25R341
**                                                AS25R342
**                                                AS25R377
**                                                AS25R378
**                                                AS25R379
**                                                AS25R380
**                                                AS25R415
**                                                AS25R416
**                                                AS25R417
**                                                AS25R418
**                                                AS25R453
**                                                AS25R454
**                                                AS25R455
**                                                AS25R456
**                                                AS25R491
**                                                AS25R492
**                                                AS25R493
**                                                AS25R494
**                                                AS25R528
**                                                AS25R529
**                                                AS25R530
**                                                AS25R531
**                                                AS25R532
**  Queue                 25L                     QU25L001
**                                                QU25L002
**  Runway                7R-25L                  RW07R001
**                                                RW07R002
**                                                RW07R003
**                                                RW07R004
**                                                RW07R005
**                                                RW07R006
**                                                RW07R007
**                                                RW07R008
**                                                RW07R009
**                                                RW07R010
**                                                RW07R011
**                                                RW07R012
**                                                RW07R013
**                                                RW07R014
**                                                RW07R015
**                                                RW07R016
**                                                RW07R017
**                                                RW07R018
**                                                RW07R019
**                                                RW07R020
**                                                RW07R021
**                                                RW07R022
```

Table L.2-2
AERMOD Input File for 2003 Baseline Diesel PM Run

```
**                                              RW07R023
**                                              RW07R024
**                                              RW07R025
**                                              RW07R026
**                                              RW07R027
**                                              RW07R028
**                                              RW07R029
**                                              RW07R030
**                                              RW07R031
**                                              RW07R032
**                                              RW07R033
**                                              RW07R034
**                                              RW07R035
**                                              RW07R036
**                                              RW07R037
**                                              RW07R038
**                                              RW07R039
**                                              RW07R040
**                                              RW07R041
**                                              RW07R042
**                                              RW07R043
**                                              RW07R044
**                                              RW07R045
**                                              RW07R046
**                                              RW07R047
**                                              RW07R048
**                                              RW07R049
**                                              RW07R050
**                                              RW07R051
**                                              RW07R052
**                                              RW07R053
**                                              RW07R054
**                                              RW07R055
**                                              RW07R056
**                                              RW07R057
**                                              RW07R058
**                                              RW07R059
**                                              RW07R060
**                                              RW07R061
**                                              RW07R062
**                                              RW07R063
**                                              RW07R064
**                                              RW07R065
**                                              RW07R066
**                                              RW07R067
**                                              RW07R068
**                                              RW07R069
**                                              RW07R070
**                                              RW07R071
**                                              RW07R072
**                                              RW07R073
**                                              RW07R074
**  Departure Space      25L                    DS25L002
**                                              DS25L003
**                                              DS25L004
**                                              DS25L007
**                                              DS25L008
**                                              DS25L009
**                                              DS25L010
**                                              DS25L011
**                                              DS25L012
**                                              DS25L013
**                                              DS25L014
**                                              DS25L015
**                                              DS25L016
**                                              DS25L039
**                                              DS25L040
**                                              DS25L041
**                                              DS25L043
**                                              DS25L044
**                                              DS25L045
```

Table L.2-2
AERMOD Input File for 2003 Baseline Diesel PM Run

```
**                                          DS25L046
**                                          DS25L047
**                                          DS25L048
**                                          DS25L049
**                                          DS25L050
**                                          DS25L051
**                                          DS25L052
**                                          DS25L053
**                                          DS25L075
**                                          DS25L076
**                                          DS25L077
**                                          DS25L079
**                                          DS25L080
**                                          DS25L081
**                                          DS25L082
**                                          DS25L083
**                                          DS25L084
**                                          DS25L085
**                                          DS25L086
**                                          DS25L087
**                                          DS25L088
**                                          DS25L089
**                                          DS25L090
**                                          DS25L112
**                                          DS25L113
**                                          DS25L114
**                                          DS25L116
**                                          DS25L117
**                                          DS25L118
**                                          DS25L119
**                                          DS25L120
**                                          DS25L121
**                                          DS25L122
**                                          DS25L123
**                                          DS25L124
**                                          DS25L125
**                                          DS25L126
**                                          DS25L127
**                                          DS25L148
**                                          DS25L149
**                                          DS25L150
**                                          DS25L151
**                                          DS25L152
**                                          DS25L153
**                                          DS25L154
**                                          DS25L155
**                                          DS25L156
**                                          DS25L157
**                                          DS25L158
**                                          DS25L159
**                                          DS25L160
**                                          DS25L161
**                                          DS25L162
**                                          DS25L163
**                                          DS25L164
**                                          DS25L184
**                                          DS25L185
**                                          DS25L186
**                                          DS25L187
**                                          DS25L188
**                                          DS25L189
**                                          DS25L190
**                                          DS25L191
**                                          DS25L192
**                                          DS25L193
**                                          DS25L194
**                                          DS25L196
**                                          DS25L197
**                                          DS25L198
**                                          DS25L199
**                                          DS25L200
```

Table L.2-2
AERMOD Input File for 2003 Baseline Diesel PM Run

```
**                                          DS25L201
**                                          DS25L221
**                                          DS25L222
**                                          DS25L223
**                                          DS25L224
**                                          DS25L225
**                                          DS25L226
**                                          DS25L227
**                                          DS25L228
**                                          DS25L229
**                                          DS25L230
**                                          DS25L231
**                                          DS25L233
**                                          DS25L234
**                                          DS25L235
**                                          DS25L236
**                                          DS25L237
**                                          DS25L238
**                                          DS25L257
**                                          DS25L258
**                                          DS25L259
**                                          DS25L260
**                                          DS25L261
**                                          DS25L262
**                                          DS25L263
**                                          DS25L264
**                                          DS25L265
**                                          DS25L266
**                                          DS25L267
**                                          DS25L268
**                                          DS25L270
**                                          DS25L271
**                                          DS25L272
**                                          DS25L273
**                                          DS25L274
**                                          DS25L294
**                                          DS25L295
**                                          DS25L296
**                                          DS25L297
**                                          DS25L298
**                                          DS25L299
**                                          DS25L300
**                                          DS25L301
**                                          DS25L302
**                                          DS25L303
**                                          DS25L304
**                                          DS25L305
**                                          DS25L306
**                                          DS25L307
**                                          DS25L308
**                                          DS25L309
**                                          DS25L310
**                                          DS25L311
**                                          DS25L330
**                                          DS25L331
**                                          DS25L332
**                                          DS25L333
**                                          DS25L334
**                                          DS25L335
**                                          DS25L336
**                                          DS25L337
**                                          DS25L338
**                                          DS25L339
**                                          DS25L340
**                                          DS25L341
**                                          DS25L342
**                                          DS25L343
**                                          DS25L344
**                                          DS25L345
**                                          DS25L346
**                                          DS25L347
```

Table L.2-2
AERMOD Input File for 2003 Baseline Diesel PM Run

```
**                                                    DS25L348
**                                                    DS25L367
**                                                    DS25L368
**                                                    DS25L369
**                                                    DS25L370
**                                                    DS25L371
**                                                    DS25L372
**                                                    DS25L373
**                                                    DS25L374
**                                                    DS25L375
**                                                    DS25L376
**                                                    DS25L377
**                                                    DS25L379
**                                                    DS25L380
**                                                    DS25L381
**                                                    DS25L382
**                                                    DS25L383
**                                                    DS25L384
**                                                    DS25L385
**                                                    DS25L403
**                                                    DS25L404
**                                                    DS25L405
**                                                    DS25L406
**                                                    DS25L407
**                                                    DS25L408
**                                                    DS25L409
**                                                    DS25L410
**                                                    DS25L411
**                                                    DS25L412
**                                                    DS25L413
**                                                    DS25L414
**                                                    DS25L416
**                                                    DS25L417
**                                                    DS25L418
**                                                    DS25L419
**                                                    DS25L420
**                                                    DS25L421
**                                                    DS25L422
**                                                    DS25L440
**                                                    DS25L441
**                                                    DS25L442
**                                                    DS25L443
**                                                    DS25L444
**                                                    DS25L445
**                                                    DS25L446
**                                                    DS25L447
**                                                    DS25L448
**                                                    DS25L449
**                                                    DS25L450
**                                                    DS25L451
**                                                    DS25L454
**                                                    DS25L455
**                                                    DS25L456
**                                                    DS25L457
**                                                    DS25L458
**                                                    DS25L459
**                                                    DS25L476
**                                                    DS25L477
**                                                    DS25L478
**                                                    DS25L479
**                                                    DS25L480
**                                                    DS25L481
**                                                    DS25L482
**                                                    DS25L483
**                                                    DS25L484
**                                                    DS25L485
**                                                    DS25L486
**                                                    DS25L487
**                                                    DS25L488
**                                                    DS25L491
**                                                    DS25L492
```

Table L.2-2
AERMOD Input File for 2003 Baseline Diesel PM Run

```
**                                              DS25L493
**                                              DS25L494
**                                              DS25L495
**                                              DS25L496
**                                              DS25L513
**                                              DS25L514
**                                              DS25L515
**                                              DS25L516
**                                              DS25L517
**                                              DS25L518
**                                              DS25L519
**                                              DS25L520
**                                              DS25L521
**                                              DS25L522
**                                              DS25L523
**                                              DS25L524
**                                              DS25L527
**                                              DS25L528
**                                              DS25L529
**                                              DS25L530
**                                              DS25L531
**                                              DS25L532
**                                              DS25L533
**  Approach Space       25L                    AS25L001
**                                              AS25L037
**                                              AS25L038
**                                              AS25L039
**                                              AS25L075
**                                              AS25L076
**                                              AS25L077
**                                              AS25L113
**                                              AS25L114
**                                              AS25L115
**                                              AS25L151
**                                              AS25L152
**                                              AS25L153
**                                              AS25L188
**                                              AS25L189
**                                              AS25L190
**                                              AS25L191
**                                              AS25L226
**                                              AS25L227
**                                              AS25L228
**                                              AS25L229
**                                              AS25L264
**                                              AS25L265
**                                              AS25L266
**                                              AS25L267
**                                              AS25L302
**                                              AS25L303
**                                              AS25L304
**                                              AS25L305
**                                              AS25L340
**                                              AS25L341
**                                              AS25L342
**                                              AS25L377
**                                              AS25L378
**                                              AS25L379
**                                              AS25L380
**                                              AS25L415
**                                              AS25L416
**                                              AS25L417
**                                              AS25L418
**                                              AS25L453
**                                              AS25L454
**                                              AS25L455
**                                              AS25L456
**                                              AS25L491
**                                              AS25L492
**                                              AS25L493
**                                              AS25L494
```

Table L.2-2
AERMOD Input File for 2003 Baseline Diesel PM Run

```
**                                        AS25L528
**                                        AS25L529
**                                        AS25L530
**                                        AS25L531
**                                        AS25L532
**  Queue               24R               QU24R001
**                                        QU24R002
**  Runway              6L-24R            RW06L001
**                                        RW06L002
**                                        RW06L003
**                                        RW06L004
**                                        RW06L005
**                                        RW06L006
**                                        RW06L007
**                                        RW06L008
**                                        RW06L009
**                                        RW06L010
**                                        RW06L011
**                                        RW06L012
**                                        RW06L013
**                                        RW06L014
**                                        RW06L015
**                                        RW06L016
**                                        RW06L017
**                                        RW06L018
**                                        RW06L019
**                                        RW06L020
**                                        RW06L021
**                                        RW06L022
**                                        RW06L023
**                                        RW06L024
**                                        RW06L025
**                                        RW06L026
**                                        RW06L027
**                                        RW06L028
**                                        RW06L029
**                                        RW06L030
**                                        RW06L031
**                                        RW06L032
**                                        RW06L033
**                                        RW06L034
**                                        RW06L035
**                                        RW06L036
**                                        RW06L037
**                                        RW06L038
**                                        RW06L039
**                                        RW06L040
**                                        RW06L041
**                                        RW06L042
**                                        RW06L043
**                                        RW06L044
**                                        RW06L045
**                                        RW06L046
**                                        RW06L047
**                                        RW06L048
**                                        RW06L049
**                                        RW06L050
**                                        RW06L051
**                                        RW06L052
**                                        RW06L053
**                                        RW06L054
**                                        RW06L055
**  Departure Space     24R               DS24R002
**                                        DS24R003
**                                        DS24R004
**                                        DS24R007
**                                        DS24R008
**                                        DS24R009
**                                        DS24R010
**                                        DS24R012
**                                        DS24R014
```

Table L.2-2
AERMOD Input File for 2003 Baseline Diesel PM Run

```
**                                                  DS24R039
**                                                  DS24R040
**                                                  DS24R041
**                                                  DS24R043
**                                                  DS24R044
**                                                  DS24R045
**                                                  DS24R046
**                                                  DS24R047
**                                                  DS24R048
**                                                  DS24R049
**                                                  DS24R050
**                                                  DS24R051
**                                                  DS24R075
**                                                  DS24R076
**                                                  DS24R077
**                                                  DS24R079
**                                                  DS24R080
**                                                  DS24R081
**                                                  DS24R082
**                                                  DS24R083
**                                                  DS24R085
**                                                  DS24R086
**                                                  DS24R087
**                                                  DS24R088
**                                                  DS24R112
**                                                  DS24R113
**                                                  DS24R114
**                                                  DS24R116
**                                                  DS24R117
**                                                  DS24R118
**                                                  DS24R119
**                                                  DS24R120
**                                                  DS24R122
**                                                  DS24R123
**                                                  DS24R124
**                                                  DS24R125
**                                                  DS24R148
**                                                  DS24R149
**                                                  DS24R150
**                                                  DS24R151
**                                                  DS24R152
**                                                  DS24R153
**                                                  DS24R154
**                                                  DS24R155
**                                                  DS24R156
**                                                  DS24R157
**                                                  DS24R159
**                                                  DS24R160
**                                                  DS24R161
**                                                  DS24R184
**                                                  DS24R185
**                                                  DS24R186
**                                                  DS24R187
**                                                  DS24R188
**                                                  DS24R189
**                                                  DS24R190
**                                                  DS24R191
**                                                  DS24R192
**                                                  DS24R193
**                                                  DS24R194
**                                                  DS24R196
**                                                  DS24R197
**                                                  DS24R198
**                                                  DS24R221
**                                                  DS24R222
**                                                  DS24R223
**                                                  DS24R224
**                                                  DS24R226
**                                                  DS24R227
**                                                  DS24R228
**                                                  DS24R229
```

Table L.2-2
AERMOD Input File for 2003 Baseline Diesel PM Run

```
**                                   DS24R230
**                                   DS24R231
**                                   DS24R233
**                                   DS24R234
**                                   DS24R235
**                                   DS24R257
**                                   DS24R258
**                                   DS24R259
**                                   DS24R260
**                                   DS24R261
**                                   DS24R262
**                                   DS24R263
**                                   DS24R264
**                                   DS24R265
**                                   DS24R266
**                                   DS24R267
**                                   DS24R268
**                                   DS24R270
**                                   DS24R271
**                                   DS24R272
**                                   DS24R294
**                                   DS24R295
**                                   DS24R296
**                                   DS24R297
**                                   DS24R298
**                                   DS24R299
**                                   DS24R300
**                                   DS24R301
**                                   DS24R302
**                                   DS24R303
**                                   DS24R304
**                                   DS24R305
**                                   DS24R306
**                                   DS24R307
**                                   DS24R308
**                                   DS24R309
**                                   DS24R330
**                                   DS24R331
**                                   DS24R332
**                                   DS24R333
**                                   DS24R334
**                                   DS24R335
**                                   DS24R336
**                                   DS24R337
**                                   DS24R338
**                                   DS24R339
**                                   DS24R340
**                                   DS24R342
**                                   DS24R343
**                                   DS24R344
**                                   DS24R345
**                                   DS24R367
**                                   DS24R368
**                                   DS24R369
**                                   DS24R370
**                                   DS24R371
**                                   DS24R372
**                                   DS24R373
**                                   DS24R374
**                                   DS24R375
**                                   DS24R376
**                                   DS24R377
**                                   DS24R379
**                                   DS24R380
**                                   DS24R381
**                                   DS24R382
**                                   DS24R403
**                                   DS24R404
**                                   DS24R405
**                                   DS24R406
**                                   DS24R407
```

Table L.2-2
AERMOD Input File for 2003 Baseline Diesel PM Run

```
**                                    DS24R408
**                                    DS24R409
**                                    DS24R410
**                                    DS24R411
**                                    DS24R412
**                                    DS24R413
**                                    DS24R416
**                                    DS24R417
**                                    DS24R418
**                                    DS24R419
**                                    DS24R440
**                                    DS24R441
**                                    DS24R443
**                                    DS24R444
**                                    DS24R445
**                                    DS24R446
**                                    DS24R447
**                                    DS24R448
**                                    DS24R449
**                                    DS24R450
**                                    DS24R454
**                                    DS24R455
**                                    DS24R456
**                                    DS24R476
**                                    DS24R477
**                                    DS24R478
**                                    DS24R479
**                                    DS24R480
**                                    DS24R481
**                                    DS24R482
**                                    DS24R483
**                                    DS24R484
**                                    DS24R485
**                                    DS24R486
**                                    DS24R487
**                                    DS24R491
**                                    DS24R492
**                                    DS24R493
**                                    DS24R513
**                                    DS24R514
**                                    DS24R516
**                                    DS24R517
**                                    DS24R518
**                                    DS24R519
**                                    DS24R520
**                                    DS24R521
**                                    DS24R523
**                                    DS24R527
**                                    DS24R528
**                                    DS24R529
**                                    DS24R530
**  Approach Space       24R          AS24R001
**                                    AS24R037
**                                    AS24R038
**                                    AS24R039
**                                    AS24R075
**                                    AS24R076
**                                    AS24R077
**                                    AS24R113
**                                    AS24R114
**                                    AS24R115
**                                    AS24R151
**                                    AS24R152
**                                    AS24R153
**                                    AS24R188
**                                    AS24R189
**                                    AS24R190
**                                    AS24R191
**                                    AS24R226
**                                    AS24R227
**                                    AS24R228
```

Table L.2-2
AERMOD Input File for 2003 Baseline Diesel PM Run

```
**                                    AS24R229
**                                    AS24R264
**                                    AS24R265
**                                    AS24R266
**                                    AS24R267
**                                    AS24R302
**                                    AS24R303
**                                    AS24R304
**                                    AS24R305
**                                    AS24R340
**                                    AS24R341
**                                    AS24R342
**                                    AS24R377
**                                    AS24R378
**                                    AS24R379
**                                    AS24R380
**                                    AS24R415
**                                    AS24R416
**                                    AS24R417
**                                    AS24R418
**                                    AS24R453
**                                    AS24R454
**                                    AS24R455
**                                    AS24R456
**                                    AS24R491
**                                    AS24R492
**                                    AS24R493
**                                    AS24R494
**                                    AS24R528
**                                    AS24R529
**                                    AS24R530
**                                    AS24R531
**                                    AS24R532
**  Queue               24L           QU24L001
**                                    QU24L002
**                                    QU24L003
**                                    QU24L004
**                                    QU24L005
**  Runway              6R-24L        RW06R001
**                                    RW06R002
**                                    RW06R003
**                                    RW06R004
**                                    RW06R005
**                                    RW06R006
**                                    RW06R007
**                                    RW06R008
**                                    RW06R009
**                                    RW06R010
**                                    RW06R011
**                                    RW06R012
**                                    RW06R013
**                                    RW06R014
**                                    RW06R015
**                                    RW06R016
**                                    RW06R017
**                                    RW06R018
**                                    RW06R019
**                                    RW06R020
**                                    RW06R021
**                                    RW06R022
**                                    RW06R023
**                                    RW06R024
**                                    RW06R025
**                                    RW06R026
**                                    RW06R027
**                                    RW06R028
**                                    RW06R029
**                                    RW06R030
**                                    RW06R031
**                                    RW06R032
**                                    RW06R033
```

Table L.2-2
AERMOD Input File for 2003 Baseline Diesel PM Run

```
**                                              RW06R034
**                                              RW06R035
**                                              RW06R036
**                                              RW06R037
**                                              RW06R038
**                                              RW06R039
**                                              RW06R040
**                                              RW06R041
**                                              RW06R042
**                                              RW06R043
**                                              RW06R044
**                                              RW06R045
**                                              RW06R046
**                                              RW06R047
**                                              RW06R048
**                                              RW06R049
**                                              RW06R050
**                                              RW06R051
**                                              RW06R052
**                                              RW06R053
**                                              RW06R054
**                                              RW06R055
**                                              RW06R056
**                                              RW06R057
**                                              RW06R058
**                                              RW06R059
**                                              RW06R060
**                                              RW06R061
**                                              RW06R062
**                                              RW06R063
**  Departure Space      24L                    DS24L002
**                                              DS24L003
**                                              DS24L004
**                                              DS24L007
**                                              DS24L008
**                                              DS24L009
**                                              DS24L010
**                                              DS24L011
**                                              DS24L012
**                                              DS24L013
**                                              DS24L014
**                                              DS24L015
**                                              DS24L016
**                                              DS24L039
**                                              DS24L040
**                                              DS24L041
**                                              DS24L043
**                                              DS24L044
**                                              DS24L045
**                                              DS24L046
**                                              DS24L047
**                                              DS24L048
**                                              DS24L049
**                                              DS24L050
**                                              DS24L051
**                                              DS24L052
**                                              DS24L053
**                                              DS24L075
**                                              DS24L076
**                                              DS24L077
**                                              DS24L079
**                                              DS24L080
**                                              DS24L081
**                                              DS24L082
**                                              DS24L083
**                                              DS24L084
**                                              DS24L085
**                                              DS24L086
**                                              DS24L087
**                                              DS24L088
**                                              DS24L089
```

Table L.2-2
AERMOD Input File for 2003 Baseline Diesel PM Run

```
**                                              DS24L090
**                                              DS24L112
**                                              DS24L113
**                                              DS24L114
**                                              DS24L116
**                                              DS24L117
**                                              DS24L118
**                                              DS24L119
**                                              DS24L120
**                                              DS24L121
**                                              DS24L122
**                                              DS24L123
**                                              DS24L124
**                                              DS24L125
**                                              DS24L126
**                                              DS24L127
**                                              DS24L148
**                                              DS24L149
**                                              DS24L150
**                                              DS24L151
**                                              DS24L152
**                                              DS24L153
**                                              DS24L154
**                                              DS24L155
**                                              DS24L156
**                                              DS24L157
**                                              DS24L158
**                                              DS24L159
**                                              DS24L160
**                                              DS24L161
**                                              DS24L162
**                                              DS24L163
**                                              DS24L164
**                                              DS24L184
**                                              DS24L185
**                                              DS24L186
**                                              DS24L187
**                                              DS24L188
**                                              DS24L189
**                                              DS24L190
**                                              DS24L191
**                                              DS24L192
**                                              DS24L193
**                                              DS24L194
**                                              DS24L195
**                                              DS24L196
**                                              DS24L197
**                                              DS24L198
**                                              DS24L199
**                                              DS24L200
**                                              DS24L201
**                                              DS24L221
**                                              DS24L222
**                                              DS24L223
**                                              DS24L224
**                                              DS24L226
**                                              DS24L227
**                                              DS24L228
**                                              DS24L229
**                                              DS24L230
**                                              DS24L231
**                                              DS24L232
**                                              DS24L233
**                                              DS24L234
**                                              DS24L235
**                                              DS24L236
**                                              DS24L237
**                                              DS24L238
**                                              DS24L257
**                                              DS24L258
**                                              DS24L259
```

Table L.2-2
AERMOD Input File for 2003 Baseline Diesel PM Run

```
**                                                   DS24L260
**                                                   DS24L261
**                                                   DS24L262
**                                                   DS24L263
**                                                   DS24L264
**                                                   DS24L265
**                                                   DS24L266
**                                                   DS24L267
**                                                   DS24L268
**                                                   DS24L269
**                                                   DS24L270
**                                                   DS24L271
**                                                   DS24L272
**                                                   DS24L273
**                                                   DS24L274
**                                                   DS24L294
**                                                   DS24L295
**                                                   DS24L296
**                                                   DS24L297
**                                                   DS24L298
**                                                   DS24L299
**                                                   DS24L300
**                                                   DS24L301
**                                                   DS24L302
**                                                   DS24L303
**                                                   DS24L304
**                                                   DS24L305
**                                                   DS24L306
**                                                   DS24L307
**                                                   DS24L308
**                                                   DS24L309
**                                                   DS24L310
**                                                   DS24L311
**                                                   DS24L330
**                                                   DS24L331
**                                                   DS24L332
**                                                   DS24L333
**                                                   DS24L334
**                                                   DS24L335
**                                                   DS24L336
**                                                   DS24L337
**                                                   DS24L338
**                                                   DS24L339
**                                                   DS24L340
**                                                   DS24L341
**                                                   DS24L342
**                                                   DS24L343
**                                                   DS24L344
**                                                   DS24L345
**                                                   DS24L346
**                                                   DS24L347
**                                                   DS24L348
**                                                   DS24L367
**                                                   DS24L368
**                                                   DS24L369
**                                                   DS24L370
**                                                   DS24L371
**                                                   DS24L372
**                                                   DS24L373
**                                                   DS24L374
**                                                   DS24L375
**                                                   DS24L376
**                                                   DS24L377
**                                                   DS24L378
**                                                   DS24L379
**                                                   DS24L380
**                                                   DS24L381
**                                                   DS24L382
**                                                   DS24L383
**                                                   DS24L384
**                                                   DS24L385
```

Table L.2-2
AERMOD Input File for 2003 Baseline Diesel PM Run

```
**                                                  DS24L403
**                                                  DS24L404
**                                                  DS24L405
**                                                  DS24L406
**                                                  DS24L407
**                                                  DS24L408
**                                                  DS24L409
**                                                  DS24L410
**                                                  DS24L411
**                                                  DS24L412
**                                                  DS24L413
**                                                  DS24L414
**                                                  DS24L415
**                                                  DS24L416
**                                                  DS24L417
**                                                  DS24L418
**                                                  DS24L419
**                                                  DS24L420
**                                                  DS24L421
**                                                  DS24L422
**                                                  DS24L440
**                                                  DS24L441
**                                                  DS24L442
**                                                  DS24L443
**                                                  DS24L444
**                                                  DS24L445
**                                                  DS24L446
**                                                  DS24L447
**                                                  DS24L448
**                                                  DS24L449
**                                                  DS24L450
**                                                  DS24L451
**                                                  DS24L452
**                                                  DS24L453
**                                                  DS24L454
**                                                  DS24L455
**                                                  DS24L456
**                                                  DS24L457
**                                                  DS24L458
**                                                  DS24L459
**                                                  DS24L476
**                                                  DS24L477
**                                                  DS24L478
**                                                  DS24L479
**                                                  DS24L480
**                                                  DS24L481
**                                                  DS24L482
**                                                  DS24L483
**                                                  DS24L484
**                                                  DS24L485
**                                                  DS24L486
**                                                  DS24L487
**                                                  DS24L488
**                                                  DS24L489
**                                                  DS24L490
**                                                  DS24L491
**                                                  DS24L492
**                                                  DS24L493
**                                                  DS24L494
**                                                  DS24L495
**                                                  DS24L496
**                                                  DS24L513
**                                                  DS24L514
**                                                  DS24L515
**                                                  DS24L516
**                                                  DS24L517
**                                                  DS24L518
**                                                  DS24L519
**                                                  DS24L520
**                                                  DS24L521
**                                                  DS24L522
```

Table L.2-2
AERMOD Input File for 2003 Baseline Diesel PM Run

```
**                                           DS24L523
**                                           DS24L524
**                                           DS24L526
**                                           DS24L527
**                                           DS24L528
**                                           DS24L529
**                                           DS24L530
**                                           DS24L531
**                                           DS24L532
**                                           DS24L533
**  Approach Space       24L                 AS24L001
**                                           AS24L037
**                                           AS24L038
**                                           AS24L039
**                                           AS24L075
**                                           AS24L076
**                                           AS24L077
**                                           AS24L113
**                                           AS24L114
**                                           AS24L115
**                                           AS24L151
**                                           AS24L152
**                                           AS24L153
**                                           AS24L188
**                                           AS24L189
**                                           AS24L190
**                                           AS24L191
**                                           AS24L226
**                                           AS24L227
**                                           AS24L228
**                                           AS24L229
**                                           AS24L264
**                                           AS24L265
**                                           AS24L266
**                                           AS24L267
**                                           AS24L302
**                                           AS24L303
**                                           AS24L304
**                                           AS24L305
**                                           AS24L340
**                                           AS24L341
**                                           AS24L342
**                                           AS24L377
**                                           AS24L378
**                                           AS24L379
**                                           AS24L380
**                                           AS24L415
**                                           AS24L416
**                                           AS24L417
**                                           AS24L418
**                                           AS24L453
**                                           AS24L454
**                                           AS24L455
**                                           AS24L456
**                                           AS24L491
**                                           AS24L492
**                                           AS24L493
**                                           AS24L494
**                                           AS24L528
**                                           AS24L529
**                                           AS24L530
**                                           AS24L531
**                                           AS24L532
SO ELEVUNIT METERS
** ------------------------------------------------------------
**          SOURCE  TYPE           X(m)       Y(m)       Z(m)
** ------------------------------------------------------------
   LOCATION PARK_001 AREAPOLY      80.00      20.00       0.00
   LOCATION PARK_002 AREAPOLY    -300.00      10.00       0.00
   LOCATION PARK_003 AREAPOLY    -200.00      35.00       0.00
   LOCATION PARK_004 AREAPOLY    -510.00     -10.00       0.00
```

Table L.2-2
AERMOD Input File for 2003 Baseline Diesel PM Run

```
LOCATION PARK_005 AREAPOLY    -495.00    -165.00       0.00
LOCATION PARK_006 AREAPOLY    -290.00    -150.00       0.00
LOCATION PARK_007 AREAPOLY    -190.00    -135.00       0.00
LOCATION PARK_008 AREAPOLY      95.00     -90.00       0.00
LOCATION PARK_009 AREAPOLY     300.00     165.00       0.00
LOCATION PARK_010 AREAPOLY     335.00     670.00       0.00
LOCATION PARK_011 AREAPOLY    2234.50    -999.30       0.00
LOCATION PARK_012 AREAPOLY    1240.00     530.00       0.00
LOCATION PARK_013 AREAPOLY     600.00     530.00       0.00
LOCATION STAT_001 POINT       -230.00     -10.00       0.00
LOCATION STAT_002 POINT        140.00     230.00       0.00
LOCATION STAT_003 POINT       -620.00     -30.00       0.00
LOCATION STAT_004 POINT       -190.00    -257.00       0.00
LOCATION STAT_005 POINT        245.00    -220.00       0.00
LOCATION STAT_006 POINT       -900.00   -1340.00       0.00
LOCATION STAT_007 POINT       -200.00     -85.00       0.00
LOCATION STAT_008 POINT      -1871.90     157.40       0.00
LOCATION STAT_009 POINT      -1746.90    -648.10       0.00
LOCATION STAT_010 POINT      -1000.40     233.30       0.00
LOCATION STAT_011 POINT      -1009.60    -559.80       0.00
LOCATION STAT_012 POINT       1360.00    -191.00       0.00
LOCATION STAT_013 POINT      -1976.00     -59.00       0.00
LOCATION STAT_014 POINT      -1774.00    -508.00       0.00
LOCATION STAT_015 POINT      -1253.00    -403.00       0.00
LOCATION STAT_016 POINT        189.60    1316.40       0.00
LOCATION STAT_017 POINT        782.00     -69.30       0.00
LOCATION GATE_001 VOLUME      1269.00   -1140.00       0.00
LOCATION GATE_002 VOLUME       710.00   -1133.00       0.00
LOCATION GATE_003 VOLUME     -1395.00    -597.00       0.00
LOCATION GATE_004 VOLUME       116.00     333.00       0.00
LOCATION GATE_005 VOLUME      -145.00     266.00       0.00
LOCATION GATE_006 VOLUME      -453.00     253.00       0.00
LOCATION GATE_007 VOLUME      -714.00     162.00       0.00
LOCATION GATE_008 VOLUME      -651.00    -383.00       0.00
LOCATION GATE_009 VOLUME      -396.00    -393.00       0.00
LOCATION GATE_010 VOLUME      -176.00    -379.00       0.00
LOCATION GATE_011 VOLUME        42.00    -336.00       0.00
LOCATION GATE_012 VOLUME       266.00    -309.00       0.00
LOCATION GATE_013 VOLUME       467.00    -249.00       0.00
LOCATION GATE_014 VOLUME     -2642.00     -45.00       0.00
LOCATION GATE_015 VOLUME       974.00     -25.00       0.00
LOCATION GATE_016 VOLUME      -950.00    -470.00       0.00
LOCATION RD001001 AREA        -513.87     -40.04       0.00
LOCATION RD001002 AREA        -331.21     -24.04       0.00
LOCATION RD001003 AREA        -148.54      -8.04       0.00
LOCATION RD001004 AREA          34.13       7.96       0.00
LOCATION RD001005 AREA         216.79      23.96       0.00
LOCATION RD001006 AREA         399.46      39.96       0.00
LOCATION RD002001 AREA         580.62      55.71       0.00
LOCATION RD003001 AREA          75.93     134.20       0.00
LOCATION RD003002 AREA          90.93      10.20       0.00
LOCATION RD004001 AREA        1453.49   -1417.09       0.00
LOCATION RD005001 AREA        1428.46   -1285.39       0.00
LOCATION RD005002 AREA        1323.86   -1280.79       0.00
LOCATION RD006001 AREA        1229.61   -1267.56       0.00
LOCATION RD007001 AREA         682.79   -1417.48       0.00
LOCATION RD007002 AREA         639.39   -1267.63       0.00
LOCATION RD008001 AREA         573.00      45.96       0.00
LOCATION RD008002 AREA         572.50     162.46       0.00
LOCATION RD009001 AREA        1152.46     134.96       0.00
LOCATION RD010001 AREA        2179.68     108.16       0.00
LOCATION RD010002 AREA        2189.33     -64.99       0.00
LOCATION RD011001 AREA        1156.90     -23.10       0.00
LOCATION RD012001 AREA        1292.70     -33.10       0.00
LOCATION RD013001 AREA        1302.65      97.20       0.00
LOCATION RD013002 AREA        1455.98      98.00       0.00
LOCATION RD013003 AREA        1609.31      98.80       0.00
LOCATION RD014001 AREA        1521.00      87.20       0.00
LOCATION RD015001 AREA        1510.97     -26.70       0.00
LOCATION RD015002 AREA        1647.47     -26.30       0.00
LOCATION RD015003 AREA        1783.97     -25.90       0.00
```

Table L.2-2
AERMOD Input File for 2003 Baseline Diesel PM Run

```
LOCATION RD016001 AREA        1599.30     -36.60        0.00
LOCATION RD016002 AREA        1600.50    -158.05        0.00
LOCATION RD017001 AREA        1887.64    -302.80        0.00
LOCATION RD017002 AREA        1900.47    -161.26        0.00
LOCATION RD017003 AREA        1913.31     -19.73        0.00
LOCATION RD018001 AREA        1933.83      92.34        0.00
LOCATION RD018002 AREA        2051.23     104.94        0.00
LOCATION RD019001 AREA         377.98     126.72        0.00
LOCATION RD019002 AREA         403.33      29.52        0.00
LOCATION RD020001 AREA         593.00      45.92        0.00
LOCATION RD020002 AREA         591.67    -115.42        0.00
LOCATION RD020003 AREA         590.33    -276.75        0.00
LOCATION RD021001 AREA        1040.98   -1393.08        0.00
LOCATION RD021002 AREA         886.98   -1369.43        0.00
LOCATION RD022001 AREA        2163.00    -890.02        0.00
LOCATION RD022002 AREA        2167.80   -1059.55        0.00
LOCATION RD022003 AREA        2172.60   -1229.08        0.00
LOCATION RD023001 AREA        2167.37   -1408.90        0.00
LOCATION RD023002 AREA        2027.07   -1408.47        0.00
LOCATION RD023003 AREA        1886.77   -1408.03        0.00
LOCATION RD024001 AREA        1736.50   -1397.57        0.00
LOCATION RD024002 AREA        1736.93   -1258.27        0.00
LOCATION RD024003 AREA        1737.37   -1118.97        0.00
LOCATION RD025001 AREA       -2944.18    -373.67        0.00
LOCATION RD025002 AREA       -2749.43    -350.44        0.00
LOCATION RD025003 AREA       -2554.68    -327.21        0.00
LOCATION RD025004 AREA       -2359.93    -303.98        0.00
LOCATION RD025005 AREA       -2165.18    -280.75        0.00
LOCATION RD025006 AREA       -1970.43    -257.52        0.00
LOCATION RD025007 AREA       -1775.68    -234.29        0.00
LOCATION RD025008 AREA       -1580.93    -211.06        0.00
LOCATION RD025009 AREA       -1386.18    -187.83        0.00
LOCATION RD025010 AREA       -1191.43    -164.60        0.00
LOCATION RD026001 AREA        -387.10   -1380.00        0.00
LOCATION RD026002 AREA        -561.60   -1383.42        0.00
LOCATION RD026003 AREA        -736.10   -1386.84        0.00
LOCATION RD026004 AREA        -910.60   -1390.26        0.00
LOCATION RD026005 AREA       -1085.10   -1393.68        0.00
LOCATION RD027001 AREA         446.17   -1303.76        0.00
LOCATION RD027002 AREA         281.13   -1318.22        0.00
LOCATION RD027003 AREA         116.09   -1332.68        0.00
LOCATION RD027004 AREA         -48.95   -1347.14        0.00
LOCATION RD027005 AREA        -213.99   -1361.60        0.00
LOCATION RD028001 AREA         581.34      36.14        0.00
LOCATION RD028002 AREA         409.01      65.14        0.00
LOCATION RD028003 AREA         236.67      94.14        0.00
LOCATION RD029001 AREA          67.28     123.08        0.00
LOCATION RD029002 AREA        -123.22      98.58        0.00
LOCATION RD030001 AREA        -313.52      74.11        0.00
LOCATION RD030002 AREA        -420.52      58.11        0.00
LOCATION RD031001 AREA        -500.98    -170.05        0.00
LOCATION RD031002 AREA        -394.48    -159.55        0.00
LOCATION RD032001 AREA        -288.18    -149.07        0.00
LOCATION RD033001 AREA        -111.11    -128.06        0.00
LOCATION RD033002 AREA          -8.11    -116.56        0.00
LOCATION RD034001 AREA          94.80    -105.07        0.00
LOCATION RD034002 AREA         247.30     -86.57        0.00
LOCATION RD035001 AREA         395.37     -69.74        0.00
LOCATION RD035002 AREA         486.37      -7.74        0.00
LOCATION RD036001 AREA        -519.08      53.24        0.00
LOCATION RD036002 AREA        -504.58     -62.76        0.00
LOCATION RD037001 AREA        -305.07      85.14        0.00
LOCATION RD037002 AREA        -291.07     -36.36        0.00
LOCATION TW001001 AREA        -800.07     442.16        0.00
LOCATION TW001002 AREA        -779.57     266.66        0.00
LOCATION TW001003 AREA        -759.07      91.16        0.00
LOCATION TW001004 AREA        -738.57     -84.34        0.00
LOCATION TW001005 AREA        -718.07    -259.84        0.00
LOCATION TW001006 AREA        -697.57    -435.34        0.00
LOCATION TW002001 AREA        -889.08     430.22        0.00
LOCATION TW002002 AREA        -865.74     241.06        0.00
```

Table L.2-2
AERMOD Input File for 2003 Baseline Diesel PM Run

```
LOCATION TW002003 AREA        -842.41      51.89        0.00
LOCATION TW002004 AREA        -819.08    -137.28        0.00
LOCATION TW002005 AREA        -795.74    -326.44        0.00
LOCATION TW002006 AREA        -772.41    -515.61        0.00
LOCATION TW003001 AREA       -2324.07     247.21        0.00
LOCATION TW003002 AREA       -2301.24      59.88        0.00
LOCATION TW003003 AREA       -2278.41    -127.46        0.00
LOCATION TW003004 AREA       -2255.57    -314.79        0.00
LOCATION TW003005 AREA       -2232.74    -502.12        0.00
LOCATION TW003006 AREA       -2209.91    -689.46        0.00
LOCATION TW004001 AREA         808.68   -1008.09        0.00
LOCATION TW004002 AREA         978.18    -985.59        0.00
LOCATION TW004003 AREA        1147.68    -963.09        0.00
LOCATION TW004004 AREA        1317.18    -940.59        0.00
LOCATION TW004005 AREA        1486.68    -918.09        0.00
LOCATION TW004006 AREA        1656.18    -895.59        0.00
LOCATION TW005001 AREA        -760.16    -696.07        0.00
LOCATION TW005002 AREA        -562.66    -673.07        0.00
LOCATION TW005003 AREA        -365.16    -650.07        0.00
LOCATION TW005004 AREA        -167.66    -627.07        0.00
LOCATION TW005005 AREA          29.84    -604.07        0.00
LOCATION TW005006 AREA         227.34    -581.07        0.00
LOCATION TW005007 AREA         424.84    -558.07        0.00
LOCATION TW005008 AREA         622.34    -535.07        0.00
LOCATION TW005009 AREA         819.84    -512.07        0.00
LOCATION TW005010 AREA        1017.34    -489.07        0.00
LOCATION TW005011 AREA        1214.84    -466.07        0.00
LOCATION TW005012 AREA        1412.34    -443.07        0.00
LOCATION TW005013 AREA        1609.84    -420.07        0.00
LOCATION TW005014 AREA        1807.34    -397.07        0.00
LOCATION TW006001 AREA       -2198.19    -868.07        0.00
LOCATION TW006002 AREA       -2018.44    -846.57        0.00
LOCATION TW006003 AREA       -1838.69    -825.07        0.00
LOCATION TW006004 AREA       -1658.94    -803.57        0.00
LOCATION TW006005 AREA       -1479.19    -782.07        0.00
LOCATION TW006006 AREA       -1299.44    -760.57        0.00
LOCATION TW006007 AREA       -1119.69    -739.07        0.00
LOCATION TW006008 AREA        -939.94    -717.57        0.00
LOCATION TW007001 AREA       -2916.89     203.96        0.00
LOCATION TW007002 AREA       -2722.89     221.29        0.00
LOCATION TW007003 AREA       -2528.89     238.63        0.00
LOCATION TW008001 AREA       -2335.27     255.92        0.00
LOCATION TW008002 AREA       -2144.77     280.29        0.00
LOCATION TW008003 AREA       -1954.27     304.67        0.00
LOCATION TW008004 AREA       -1763.77     329.04        0.00
LOCATION TW008005 AREA       -1573.27     353.42        0.00
LOCATION TW008006 AREA       -1382.77     377.79        0.00
LOCATION TW008007 AREA       -1192.27     402.17        0.00
LOCATION TW008008 AREA       -1001.77     426.54        0.00
LOCATION TW009001 AREA        -811.19     450.93        0.00
LOCATION TW009002 AREA        -632.39     472.33        0.00
LOCATION TW009003 AREA        -453.59     493.73        0.00
LOCATION TW009004 AREA        -274.79     515.13        0.00
LOCATION TW009005 AREA         -95.99     536.53        0.00
LOCATION TW010001 AREA         578.81    -545.07        0.00
LOCATION TW010002 AREA         757.06    -523.70        0.00
LOCATION TW010003 AREA         935.31    -502.32        0.00
LOCATION TW010004 AREA        1113.56    -480.95        0.00
LOCATION TW010005 AREA        1291.81    -459.57        0.00
LOCATION TW010006 AREA        1470.06    -438.20        0.00
LOCATION TW010007 AREA        1648.31    -416.82        0.00
LOCATION TW010008 AREA        1826.56    -395.45        0.00
LOCATION TW011001 AREA        -760.12    -696.06        0.00
LOCATION TW011002 AREA        -568.83    -674.49        0.00
LOCATION TW011003 AREA        -377.55    -652.92        0.00
LOCATION TW011004 AREA        -186.26    -631.35        0.00
LOCATION TW011005 AREA           5.02    -609.78        0.00
LOCATION TW011006 AREA         196.31    -588.21        0.00
LOCATION TW011007 AREA         387.59    -566.63        0.00
LOCATION QU25R001 AREA        2095.67    -487.99        0.00
LOCATION QU25R002 AREA        1920.67    -482.24        0.00
```

Table L.2-2
AERMOD Input File for 2003 Baseline Diesel PM Run

```
LOCATION QU25R003 AREA       1745.67    -476.49       0.00
LOCATION QU25R004 AREA       1570.67    -470.74       0.00
LOCATION RW07L001 AREA      -1563.19    -906.07       0.00
LOCATION RW07L002 AREA      -1513.76    -900.15       0.00
LOCATION RW07L003 AREA      -1464.32    -894.23       0.00
LOCATION RW07L004 AREA      -1414.89    -888.31       0.00
LOCATION RW07L005 AREA      -1365.46    -882.40       0.00
LOCATION RW07L006 AREA      -1316.03    -876.48       0.00
LOCATION RW07L007 AREA      -1266.59    -870.56       0.00
LOCATION RW07L008 AREA      -1217.16    -864.64       0.00
LOCATION RW07L009 AREA      -1167.73    -858.72       0.00
LOCATION RW07L010 AREA      -1118.30    -852.80       0.00
LOCATION RW07L011 AREA      -1068.86    -846.88       0.00
LOCATION RW07L012 AREA      -1019.43    -840.96       0.00
LOCATION RW07L013 AREA       -970.00    -835.04       0.00
LOCATION RW07L014 AREA       -920.57    -829.12       0.00
LOCATION RW07L015 AREA       -871.13    -823.21       0.00
LOCATION RW07L016 AREA       -821.70    -817.29       0.00
LOCATION RW07L017 AREA       -772.27    -811.37       0.00
LOCATION RW07L018 AREA       -722.84    -805.45       0.00
LOCATION RW07L019 AREA       -673.41    -799.53       0.00
LOCATION RW07L020 AREA       -623.97    -793.61       0.00
LOCATION RW07L021 AREA       -574.54    -787.69       0.00
LOCATION RW07L022 AREA       -525.11    -781.77       0.00
LOCATION RW07L023 AREA       -475.68    -775.85       0.00
LOCATION RW07L024 AREA       -426.24    -769.94       0.00
LOCATION RW07L025 AREA       -376.81    -764.02       0.00
LOCATION RW07L026 AREA       -327.38    -758.10       0.00
LOCATION RW07L027 AREA       -277.95    -752.18       0.00
LOCATION RW07L028 AREA       -228.51    -746.26       0.00
LOCATION RW07L029 AREA       -179.08    -740.34       0.00
LOCATION RW07L030 AREA       -129.65    -734.42       0.00
LOCATION RW07L031 AREA        -80.22    -728.50       0.00
LOCATION RW07L032 AREA        -30.78    -722.58       0.00
LOCATION RW07L033 AREA         18.65    -716.67       0.00
LOCATION RW07L034 AREA         68.08    -710.75       0.00
LOCATION RW07L035 AREA        117.51    -704.83       0.00
LOCATION RW07L036 AREA        166.95    -698.91       0.00
LOCATION RW07L037 AREA        216.38    -692.99       0.00
LOCATION RW07L038 AREA        265.81    -687.07       0.00
LOCATION RW07L039 AREA        315.24    -681.15       0.00
LOCATION RW07L040 AREA        364.68    -675.23       0.00
LOCATION RW07L041 AREA        414.11    -669.31       0.00
LOCATION RW07L042 AREA        463.54    -663.40       0.00
LOCATION RW07L043 AREA        512.97    -657.48       0.00
LOCATION RW07L044 AREA        562.41    -651.56       0.00
LOCATION RW07L045 AREA        611.84    -645.64       0.00
LOCATION RW07L046 AREA        661.27    -639.72       0.00
LOCATION RW07L047 AREA        710.70    -633.80       0.00
LOCATION RW07L048 AREA        760.14    -627.88       0.00
LOCATION RW07L049 AREA        809.57    -621.96       0.00
LOCATION RW07L050 AREA        859.00    -616.04       0.00
LOCATION RW07L051 AREA        908.43    -610.12       0.00
LOCATION RW07L052 AREA        957.87    -604.21       0.00
LOCATION RW07L053 AREA       1007.30    -598.29       0.00
LOCATION RW07L054 AREA       1056.73    -592.37       0.00
LOCATION RW07L055 AREA       1106.16    -586.45       0.00
LOCATION RW07L056 AREA       1155.59    -580.53       0.00
LOCATION RW07L057 AREA       1205.03    -574.61       0.00
LOCATION RW07L058 AREA       1254.46    -568.69       0.00
LOCATION RW07L059 AREA       1303.89    -562.77       0.00
LOCATION RW07L060 AREA       1353.32    -556.85       0.00
LOCATION RW07L061 AREA       1402.76    -550.94       0.00
LOCATION RW07L062 AREA       1452.19    -545.02       0.00
LOCATION RW07L063 AREA       1501.62    -539.10       0.00
LOCATION RW07L064 AREA       1551.05    -533.18       0.00
LOCATION RW07L065 AREA       1600.49    -527.26       0.00
LOCATION RW07L066 AREA       1649.92    -521.34       0.00
LOCATION RW07L067 AREA       1699.35    -515.42       0.00
LOCATION RW07L068 AREA       1748.78    -509.50       0.00
LOCATION RW07L069 AREA       1798.22    -503.58       0.00
```

Table L.2-2
AERMOD Input File for 2003 Baseline Diesel PM Run

```
LOCATION RW07L070 AREA        1847.65    -497.67        0.00
LOCATION RW07L071 AREA        1897.08    -491.75        0.00
LOCATION RW07L072 AREA        1946.51    -485.83        0.00
LOCATION RW07L073 AREA        1995.95    -479.91        0.00
LOCATION RW07L074 AREA        2045.38    -473.99        0.00
LOCATION DS25R002 AREA        1730.72    -531.81        0.00
LOCATION DS25R003 AREA        1700.03    -535.48        0.00
LOCATION DS25R004 AREA        1462.80    -563.89        0.00
LOCATION DS25R007 AREA         867.27    -635.20        0.00
LOCATION DS25R008 AREA         707.12    -654.37        0.00
LOCATION DS25R009 AREA         508.54    -678.15        0.00
LOCATION DS25R010 AREA         309.96    -701.93        0.00
LOCATION DS25R011 AREA         111.37    -725.71        0.00
LOCATION DS25R012 AREA         -87.21    -749.48        0.00
LOCATION DS25R013 AREA        -285.79    -773.26        0.00
LOCATION DS25R014 AREA        -520.66    -801.38        0.00
LOCATION DS25R015 AREA        -714.53    -824.60        0.00
LOCATION DS25R016 AREA        -881.53    -844.59        0.00
LOCATION DS25R039 AREA        1684.68    -537.32        0.00
LOCATION DS25R040 AREA        1501.44    -559.26        0.00
LOCATION DS25R041 AREA        1302.86    -583.04        0.00
LOCATION DS25R043 AREA         825.26    -640.23        0.00
LOCATION DS25R044 AREA         680.09    -657.61        0.00
LOCATION DS25R045 AREA         508.54    -678.15        0.00
LOCATION DS25R046 AREA         309.96    -701.93        0.00
LOCATION DS25R047 AREA         111.37    -725.71        0.00
LOCATION DS25R048 AREA         -87.21    -749.48        0.00
LOCATION DS25R049 AREA        -285.79    -773.26        0.00
LOCATION DS25R050 AREA        -484.37    -797.04        0.00
LOCATION DS25R051 AREA        -682.95    -820.82        0.00
LOCATION DS25R052 AREA        -881.53    -844.59        0.00
LOCATION DS25R053 AREA       -1080.12    -868.37        0.00
LOCATION DS25R075 AREA        1590.98    -548.54        0.00
LOCATION DS25R076 AREA        1501.44    -559.26        0.00
LOCATION DS25R077 AREA        1302.86    -583.04        0.00
LOCATION DS25R079 AREA         720.23    -652.80        0.00
LOCATION DS25R080 AREA         707.12    -654.37        0.00
LOCATION DS25R081 AREA         508.54    -678.15        0.00
LOCATION DS25R082 AREA         309.96    -701.93        0.00
LOCATION DS25R083 AREA         111.37    -725.71        0.00
LOCATION DS25R084 AREA         -87.21    -749.48        0.00
LOCATION DS25R085 AREA        -377.61    -784.25        0.00
LOCATION DS25R086 AREA        -484.37    -797.04        0.00
LOCATION DS25R087 AREA        -758.51    -829.86        0.00
LOCATION DS25R088 AREA        -881.53    -844.59        0.00
LOCATION DS25R089 AREA       -1080.12    -868.37        0.00
LOCATION DS25R090 AREA       -1278.70    -892.15        0.00
LOCATION DS25R112 AREA        1497.29    -559.76        0.00
LOCATION DS25R113 AREA        1302.86    -583.04        0.00
LOCATION DS25R114 AREA        1104.28    -606.82        0.00
LOCATION DS25R116 AREA         615.21    -665.38        0.00
LOCATION DS25R117 AREA         413.30    -689.55        0.00
LOCATION DS25R118 AREA         309.96    -701.93        0.00
LOCATION DS25R119 AREA         111.37    -725.71        0.00
LOCATION DS25R120 AREA         -87.21    -749.48        0.00
LOCATION DS25R121 AREA        -285.79    -773.26        0.00
LOCATION DS25R122 AREA        -609.55    -812.03        0.00
LOCATION DS25R123 AREA        -682.95    -820.82        0.00
LOCATION DS25R124 AREA        -916.36    -848.76        0.00
LOCATION DS25R125 AREA       -1080.12    -868.37        0.00
LOCATION DS25R126 AREA       -1278.70    -892.15        0.00
LOCATION DS25R127 AREA       -1477.28    -915.93        0.00
LOCATION DS25R148 AREA        1403.59    -570.98        0.00
LOCATION DS25R149 AREA        1277.44    -586.08        0.00
LOCATION DS25R150 AREA        1104.28    -606.82        0.00
LOCATION DS25R151 AREA         905.70    -630.60        0.00
LOCATION DS25R152 AREA         510.19    -677.95        0.00
LOCATION DS25R153 AREA         508.54    -678.15        0.00
LOCATION DS25R154 AREA         293.27    -703.93        0.00
LOCATION DS25R155 AREA         111.37    -725.71        0.00
LOCATION DS25R156 AREA         -87.21    -749.48        0.00
```

Table L.2-2
AERMOD Input File for 2003 Baseline Diesel PM Run

```
LOCATION DS25R157 AREA       -285.79    -773.26       0.00
LOCATION DS25R158 AREA       -484.37    -797.04       0.00
LOCATION DS25R159 AREA       -777.21    -832.10       0.00
LOCATION DS25R160 AREA       -881.53    -844.59       0.00
LOCATION DS25R161 AREA      -1080.12    -868.37       0.00
LOCATION DS25R162 AREA      -1278.70    -892.15       0.00
LOCATION DS25R163 AREA      -1477.28    -915.93       0.00
LOCATION DS25R164 AREA      -1675.86    -939.70       0.00
LOCATION DS25R184 AREA       1309.89    -582.20       0.00
LOCATION DS25R185 AREA       1302.86    -583.04       0.00
LOCATION DS25R186 AREA       1104.28    -606.82       0.00
LOCATION DS25R187 AREA        886.37    -632.91       0.00
LOCATION DS25R188 AREA        707.12    -654.37       0.00
LOCATION DS25R189 AREA        405.17    -690.53       0.00
LOCATION DS25R190 AREA        309.96    -701.93       0.00
LOCATION DS25R191 AREA        111.37    -725.71       0.00
LOCATION DS25R192 AREA       -113.84    -752.67       0.00
LOCATION DS25R193 AREA       -302.07    -775.21       0.00
LOCATION DS25R194 AREA       -484.37    -797.04       0.00
LOCATION DS25R196 AREA       -944.87    -852.18       0.00
LOCATION DS25R197 AREA      -1080.12    -868.37       0.00
LOCATION DS25R198 AREA      -1278.70    -892.15       0.00
LOCATION DS25R199 AREA      -1477.28    -915.93       0.00
LOCATION DS25R200 AREA      -1675.86    -939.70       0.00
LOCATION DS25R201 AREA      -1874.44    -963.48       0.00
LOCATION DS25R221 AREA       1216.20    -593.42       0.00
LOCATION DS25R222 AREA       1010.81    -618.01       0.00
LOCATION DS25R223 AREA        905.70    -630.60       0.00
LOCATION DS25R224 AREA        707.12    -654.37       0.00
LOCATION DS25R226 AREA        298.93    -703.25       0.00
LOCATION DS25R227 AREA         53.22    -732.67       0.00
LOCATION DS25R228 AREA        -87.21    -749.48       0.00
LOCATION DS25R229 AREA       -285.79    -773.26       0.00
LOCATION DS25R230 AREA       -484.37    -797.04       0.00
LOCATION DS25R231 AREA       -682.95    -820.82       0.00
LOCATION DS25R233 AREA      -1112.54    -872.25       0.00
LOCATION DS25R234 AREA      -1278.70    -892.15       0.00
LOCATION DS25R235 AREA      -1477.28    -915.93       0.00
LOCATION DS25R236 AREA      -1675.86    -939.70       0.00
LOCATION DS25R237 AREA      -1874.44    -963.48       0.00
LOCATION DS25R238 AREA      -2073.02    -987.26       0.00
LOCATION DS25R257 AREA       1122.50    -604.64       0.00
LOCATION DS25R258 AREA       1104.28    -606.82       0.00
LOCATION DS25R259 AREA        891.77    -632.26       0.00
LOCATION DS25R260 AREA        656.76    -660.40       0.00
LOCATION DS25R261 AREA        508.54    -678.15       0.00
LOCATION DS25R262 AREA        192.44    -716.00       0.00
LOCATION DS25R263 AREA        111.37    -725.71       0.00
LOCATION DS25R264 AREA        -87.21    -749.48       0.00
LOCATION DS25R265 AREA       -285.79    -773.26       0.00
LOCATION DS25R266 AREA       -556.60    -805.69       0.00
LOCATION DS25R267 AREA       -682.95    -820.82       0.00
LOCATION DS25R268 AREA       -881.53    -844.59       0.00
LOCATION DS25R270 AREA      -1280.20    -892.33       0.00
LOCATION DS25R271 AREA      -1477.28    -915.93       0.00
LOCATION DS25R272 AREA      -1675.86    -939.70       0.00
LOCATION DS25R273 AREA      -1874.44    -963.48       0.00
LOCATION DS25R274 AREA      -2073.02    -987.26       0.00
LOCATION DS25R294 AREA       1028.80    -615.85       0.00
LOCATION DS25R295 AREA        802.55    -642.95       0.00
LOCATION DS25R296 AREA        707.12    -654.37       0.00
LOCATION DS25R297 AREA        508.54    -678.15       0.00
LOCATION DS25R298 AREA        309.96    -701.93       0.00
LOCATION DS25R299 AREA         85.95    -728.75       0.00
LOCATION DS25R300 AREA       -139.37    -755.73       0.00
LOCATION DS25R301 AREA       -285.79    -773.26       0.00
LOCATION DS25R302 AREA       -484.37    -797.04       0.00
LOCATION DS25R303 AREA       -682.95    -820.82       0.00
LOCATION DS25R304 AREA       -881.53    -844.59       0.00
LOCATION DS25R305 AREA      -1080.12    -868.37       0.00
LOCATION DS25R306 AREA      -1278.70    -892.15       0.00
```

Table L.2-2
AERMOD Input File for 2003 Baseline Diesel PM Run

```
LOCATION DS25R307 AREA       -1477.28    -915.93        0.00
LOCATION DS25R308 AREA       -1675.86    -939.70        0.00
LOCATION DS25R309 AREA       -1874.44    -963.48        0.00
LOCATION DS25R310 AREA       -2073.02    -987.26        0.00
LOCATION DS25R311 AREA       -2271.60   -1011.04        0.00
LOCATION DS25R330 AREA         935.11    -627.07        0.00
LOCATION DS25R331 AREA         905.70    -630.60        0.00
LOCATION DS25R332 AREA         707.12    -654.37        0.00
LOCATION DS25R333 AREA         508.54    -678.15        0.00
LOCATION DS25R334 AREA         297.18    -703.46        0.00
LOCATION DS25R335 AREA         -20.55    -741.50        0.00
LOCATION DS25R336 AREA         -87.21    -749.48        0.00
LOCATION DS25R337 AREA        -285.79    -773.26        0.00
LOCATION DS25R338 AREA        -484.37    -797.04        0.00
LOCATION DS25R339 AREA        -799.61    -834.78        0.00
LOCATION DS25R340 AREA        -881.53    -844.59        0.00
LOCATION DS25R341 AREA       -1080.12    -868.37        0.00
LOCATION DS25R342 AREA       -1330.57    -898.36        0.00
LOCATION DS25R343 AREA       -1477.28    -915.93        0.00
LOCATION DS25R344 AREA       -1675.86    -939.70        0.00
LOCATION DS25R345 AREA       -1874.44    -963.48        0.00
LOCATION DS25R346 AREA       -2087.73    -989.02        0.00
LOCATION DS25R347 AREA       -2271.60   -1011.04        0.00
LOCATION DS25R348 AREA       -2470.19   -1034.82        0.00
LOCATION DS25R367 AREA         841.41    -638.29        0.00
LOCATION DS25R368 AREA         624.11    -664.31        0.00
LOCATION DS25R369 AREA         477.54    -681.86        0.00
LOCATION DS25R370 AREA         309.96    -701.93        0.00
LOCATION DS25R371 AREA         111.37    -725.71        0.00
LOCATION DS25R372 AREA        -127.04    -754.25        0.00
LOCATION DS25R373 AREA        -331.49    -778.73        0.00
LOCATION DS25R374 AREA        -484.37    -797.04        0.00
LOCATION DS25R375 AREA        -682.95    -820.82        0.00
LOCATION DS25R376 AREA        -911.95    -848.24        0.00
LOCATION DS25R377 AREA       -1080.12    -868.37        0.00
LOCATION DS25R379 AREA       -1581.91    -928.45        0.00
LOCATION DS25R380 AREA       -1675.86    -939.70        0.00
LOCATION DS25R381 AREA       -1874.44    -963.48        0.00
LOCATION DS25R382 AREA       -2073.02    -987.26        0.00
LOCATION DS25R383 AREA       -2271.60   -1011.04        0.00
LOCATION DS25R384 AREA       -2470.19   -1034.82        0.00
LOCATION DS25R385 AREA       -2668.77   -1058.59        0.00
LOCATION DS25R403 AREA         747.71    -649.51        0.00
LOCATION DS25R404 AREA         707.12    -654.37        0.00
LOCATION DS25R405 AREA         508.54    -678.15        0.00
LOCATION DS25R406 AREA         309.96    -701.93        0.00
LOCATION DS25R407 AREA         111.37    -725.71        0.00
LOCATION DS25R408 AREA         -87.21    -749.48        0.00
LOCATION DS25R409 AREA        -285.79    -773.26        0.00
LOCATION DS25R410 AREA        -484.37    -797.04        0.00
LOCATION DS25R411 AREA        -682.95    -820.82        0.00
LOCATION DS25R412 AREA        -881.53    -844.59        0.00
LOCATION DS25R413 AREA       -1080.12    -868.37        0.00
LOCATION DS25R414 AREA       -1278.70    -892.15        0.00
LOCATION DS25R416 AREA       -1833.24    -958.55        0.00
LOCATION DS25R417 AREA       -1874.44    -963.48        0.00
LOCATION DS25R418 AREA       -2073.02    -987.26        0.00
LOCATION DS25R419 AREA       -2271.60   -1011.04        0.00
LOCATION DS25R420 AREA       -2470.19   -1034.82        0.00
LOCATION DS25R421 AREA       -2668.77   -1058.59        0.00
LOCATION DS25R422 AREA       -2867.35   -1082.37        0.00
LOCATION DS25R440 AREA         654.02    -660.73        0.00
LOCATION DS25R441 AREA         445.66    -685.68        0.00
LOCATION DS25R442 AREA         210.90    -713.79        0.00
LOCATION DS25R443 AREA         111.37    -725.71        0.00
LOCATION DS25R444 AREA         -99.06    -750.90        0.00
LOCATION DS25R445 AREA        -340.02    -779.75        0.00
LOCATION DS25R446 AREA        -523.61    -801.74        0.00
LOCATION DS25R447 AREA        -682.95    -820.82        0.00
LOCATION DS25R448 AREA        -881.53    -844.59        0.00
LOCATION DS25R449 AREA       -1136.65    -875.14        0.00
```

Table L.2-2
AERMOD Input File for 2003 Baseline Diesel PM Run

```
LOCATION DS25R450 AREA       -1278.70    -892.15        0.00
LOCATION DS25R451 AREA       -1477.28    -915.93        0.00
LOCATION DS25R454 AREA       -2084.57    -988.64        0.00
LOCATION DS25R455 AREA       -2271.60   -1011.04        0.00
LOCATION DS25R456 AREA       -2470.19   -1034.82        0.00
LOCATION DS25R457 AREA       -2668.77   -1058.59        0.00
LOCATION DS25R458 AREA       -2867.35   -1082.37        0.00
LOCATION DS25R459 AREA       -3065.93   -1106.15        0.00
LOCATION DS25R476 AREA         560.32    -671.95        0.00
LOCATION DS25R477 AREA         508.54    -678.15        0.00
LOCATION DS25R478 AREA         309.96    -701.93        0.00
LOCATION DS25R479 AREA          77.58    -729.75        0.00
LOCATION DS25R480 AREA         -87.21    -749.48        0.00
LOCATION DS25R481 AREA        -285.79    -773.26        0.00
LOCATION DS25R482 AREA        -484.37    -797.04        0.00
LOCATION DS25R483 AREA        -682.95    -820.82        0.00
LOCATION DS25R484 AREA        -881.53    -844.59        0.00
LOCATION DS25R485 AREA       -1080.12    -868.37        0.00
LOCATION DS25R486 AREA       -1278.70    -892.15        0.00
LOCATION DS25R487 AREA       -1477.28    -915.93        0.00
LOCATION DS25R488 AREA       -1675.86    -939.70        0.00
LOCATION DS25R491 AREA       -2286.17   -1012.78        0.00
LOCATION DS25R492 AREA       -2470.19   -1034.82        0.00
LOCATION DS25R493 AREA       -2668.77   -1058.59        0.00
LOCATION DS25R494 AREA       -2867.35   -1082.37        0.00
LOCATION DS25R495 AREA       -3065.93   -1106.15        0.00
LOCATION DS25R496 AREA       -3264.51   -1129.93        0.00
LOCATION DS25R513 AREA         466.62    -683.17        0.00
LOCATION DS25R514 AREA         267.21    -707.05        0.00
LOCATION DS25R515 AREA         -55.73    -745.71        0.00
LOCATION DS25R516 AREA         -87.21    -749.48        0.00
LOCATION DS25R517 AREA        -285.79    -773.26        0.00
LOCATION DS25R518 AREA        -484.37    -797.04        0.00
LOCATION DS25R519 AREA        -682.95    -820.82        0.00
LOCATION DS25R520 AREA        -881.53    -844.59        0.00
LOCATION DS25R521 AREA       -1080.12    -868.37        0.00
LOCATION DS25R522 AREA       -1361.34    -902.05        0.00
LOCATION DS25R523 AREA       -1477.28    -915.93        0.00
LOCATION DS25R524 AREA       -1675.86    -939.70        0.00
LOCATION DS25R527 AREA       -2426.35   -1029.57        0.00
LOCATION DS25R528 AREA       -2470.19   -1034.82        0.00
LOCATION DS25R529 AREA       -2668.77   -1058.59        0.00
LOCATION DS25R530 AREA       -2867.35   -1082.37        0.00
LOCATION DS25R531 AREA       -3065.93   -1106.15        0.00
LOCATION DS25R532 AREA       -3264.51   -1129.93        0.00
LOCATION DS25R533 AREA       -3463.09   -1153.70        0.00
LOCATION AS25R001 AREA        2248.76    -469.78        0.00
LOCATION AS25R037 AREA        2295.77    -464.15        0.00
LOCATION AS25R038 AREA        2494.35    -440.37        0.00
LOCATION AS25R039 AREA        2630.06    -424.12        0.00
LOCATION AS25R075 AREA        2692.93    -416.60        0.00
LOCATION AS25R076 AREA        2891.51    -392.82        0.00
LOCATION AS25R077 AREA        3009.14    -378.73        0.00
LOCATION AS25R113 AREA        3090.10    -369.04        0.00
LOCATION AS25R114 AREA        3288.68    -345.26        0.00
LOCATION AS25R115 AREA        3387.86    -333.39        0.00
LOCATION AS25R151 AREA        3487.26    -321.49        0.00
LOCATION AS25R152 AREA        3685.84    -297.71        0.00
LOCATION AS25R153 AREA        3766.57    -288.04        0.00
LOCATION AS25R188 AREA        3685.84    -297.71        0.00
LOCATION AS25R189 AREA        3884.42    -273.93        0.00
LOCATION AS25R190 AREA        4083.00    -250.15        0.00
LOCATION AS25R191 AREA        4145.28    -242.70        0.00
LOCATION AS25R226 AREA        4083.00    -250.15        0.00
LOCATION AS25R227 AREA        4281.59    -226.37        0.00
LOCATION AS25R228 AREA        4480.17    -202.60        0.00
LOCATION AS25R229 AREA        4524.00    -197.35        0.00
LOCATION AS25R264 AREA        4480.17    -202.60        0.00
LOCATION AS25R265 AREA        4678.75    -178.82        0.00
LOCATION AS25R266 AREA        4877.33    -155.04        0.00
LOCATION AS25R267 AREA        4902.71    -152.00        0.00
```

Table L.2-2
AERMOD Input File for 2003 Baseline Diesel PM Run

```
LOCATION AS25R302 AREA        4877.33    -155.04        0.00
LOCATION AS25R303 AREA        5075.91    -131.26        0.00
LOCATION AS25R304 AREA        5274.49    -107.49        0.00
LOCATION AS25R305 AREA        5281.43    -106.66        0.00
LOCATION AS25R340 AREA        5274.49    -107.49        0.00
LOCATION AS25R341 AREA        5473.07     -83.71        0.00
LOCATION AS25R342 AREA        5660.14     -61.31        0.00
LOCATION AS25R377 AREA        5473.07     -83.71        0.00
LOCATION AS25R378 AREA        5671.66     -59.93        0.00
LOCATION AS25R379 AREA        5870.24     -36.15        0.00
LOCATION AS25R380 AREA        6038.85     -15.96        0.00
LOCATION AS25R415 AREA        5870.24     -36.15        0.00
LOCATION AS25R416 AREA        6068.82     -12.38        0.00
LOCATION AS25R417 AREA        6267.40      11.40        0.00
LOCATION AS25R418 AREA        6417.57      29.38        0.00
LOCATION AS25R453 AREA        6267.40      11.40        0.00
LOCATION AS25R454 AREA        6465.98      35.18        0.00
LOCATION AS25R455 AREA        6664.56      58.96        0.00
LOCATION AS25R456 AREA        6796.28      74.73        0.00
LOCATION AS25R491 AREA        6664.56      58.96        0.00
LOCATION AS25R492 AREA        6863.15      82.73        0.00
LOCATION AS25R493 AREA        7061.73     106.51        0.00
LOCATION AS25R494 AREA        7175.00     120.08        0.00
LOCATION AS25R528 AREA        6863.15      82.73        0.00
LOCATION AS25R529 AREA        7061.73     106.51        0.00
LOCATION AS25R530 AREA        7260.31     130.29        0.00
LOCATION AS25R531 AREA        7458.89     154.07        0.00
LOCATION AS25R532 AREA        7644.60     176.30        0.00
LOCATION QU25L001 AREA        2101.05    -719.96        0.00
LOCATION QU25L002 AREA        1986.55    -806.96        0.00
LOCATION RW07R001 AREA       -1534.17   -1130.07        0.00
LOCATION RW07R002 AREA       -1485.14   -1124.29        0.00
LOCATION RW07R003 AREA       -1436.12   -1118.50        0.00
LOCATION RW07R004 AREA       -1387.09   -1112.72        0.00
LOCATION RW07R005 AREA       -1338.06   -1106.93        0.00
LOCATION RW07R006 AREA       -1289.04   -1101.15        0.00
LOCATION RW07R007 AREA       -1240.01   -1095.37        0.00
LOCATION RW07R008 AREA       -1190.98   -1089.58        0.00
LOCATION RW07R009 AREA       -1141.96   -1083.80        0.00
LOCATION RW07R010 AREA       -1092.93   -1078.01        0.00
LOCATION RW07R011 AREA       -1043.90   -1072.23        0.00
LOCATION RW07R012 AREA        -994.87   -1066.45        0.00
LOCATION RW07R013 AREA        -945.85   -1060.66        0.00
LOCATION RW07R014 AREA        -896.82   -1054.88        0.00
LOCATION RW07R015 AREA        -847.79   -1049.10        0.00
LOCATION RW07R016 AREA        -798.77   -1043.31        0.00
LOCATION RW07R017 AREA        -749.74   -1037.53        0.00
LOCATION RW07R018 AREA        -700.71   -1031.74        0.00
LOCATION RW07R019 AREA        -651.69   -1025.96        0.00
LOCATION RW07R020 AREA        -602.66   -1020.18        0.00
LOCATION RW07R021 AREA        -553.63   -1014.39        0.00
LOCATION RW07R022 AREA        -504.60   -1008.61        0.00
LOCATION RW07R023 AREA        -455.58   -1002.83        0.00
LOCATION RW07R024 AREA        -406.55    -997.04        0.00
LOCATION RW07R025 AREA        -357.52    -991.26        0.00
LOCATION RW07R026 AREA        -308.50    -985.47        0.00
LOCATION RW07R027 AREA        -259.47    -979.69        0.00
LOCATION RW07R028 AREA        -210.44    -973.91        0.00
LOCATION RW07R029 AREA        -161.41    -968.12        0.00
LOCATION RW07R030 AREA        -112.39    -962.34        0.00
LOCATION RW07R031 AREA         -63.36    -956.56        0.00
LOCATION RW07R032 AREA         -14.33    -950.77        0.00
LOCATION RW07R033 AREA          34.69    -944.99        0.00
LOCATION RW07R034 AREA          83.72    -939.20        0.00
LOCATION RW07R035 AREA         132.75    -933.42        0.00
LOCATION RW07R036 AREA         181.77    -927.64        0.00
LOCATION RW07R037 AREA         230.80    -921.85        0.00
LOCATION RW07R038 AREA         279.83    -916.07        0.00
LOCATION RW07R039 AREA         328.86    -910.29        0.00
LOCATION RW07R040 AREA         377.88    -904.50        0.00
LOCATION RW07R041 AREA         426.91    -898.72        0.00
```

Table L.2-2
AERMOD Input File for 2003 Baseline Diesel PM Run

```
LOCATION RW07R042 AREA          475.94    -892.93         0.00
LOCATION RW07R043 AREA          524.96    -887.15         0.00
LOCATION RW07R044 AREA          573.99    -881.37         0.00
LOCATION RW07R045 AREA          623.02    -875.58         0.00
LOCATION RW07R046 AREA          672.04    -869.80         0.00
LOCATION RW07R047 AREA          721.07    -864.01         0.00
LOCATION RW07R048 AREA          770.10    -858.23         0.00
LOCATION RW07R049 AREA          819.13    -852.45         0.00
LOCATION RW07R050 AREA          868.15    -846.66         0.00
LOCATION RW07R051 AREA          917.18    -840.88         0.00
LOCATION RW07R052 AREA          966.21    -835.10         0.00
LOCATION RW07R053 AREA         1015.23    -829.31         0.00
LOCATION RW07R054 AREA         1064.26    -823.53         0.00
LOCATION RW07R055 AREA         1113.29    -817.74         0.00
LOCATION RW07R056 AREA         1162.31    -811.96         0.00
LOCATION RW07R057 AREA         1211.34    -806.18         0.00
LOCATION RW07R058 AREA         1260.37    -800.39         0.00
LOCATION RW07R059 AREA         1309.40    -794.61         0.00
LOCATION RW07R060 AREA         1358.42    -788.83         0.00
LOCATION RW07R061 AREA         1407.45    -783.04         0.00
LOCATION RW07R062 AREA         1456.48    -777.26         0.00
LOCATION RW07R063 AREA         1505.50    -771.47         0.00
LOCATION RW07R064 AREA         1554.53    -765.69         0.00
LOCATION RW07R065 AREA         1603.56    -759.91         0.00
LOCATION RW07R066 AREA         1652.59    -754.12         0.00
LOCATION RW07R067 AREA         1701.61    -748.34         0.00
LOCATION RW07R068 AREA         1750.64    -742.56         0.00
LOCATION RW07R069 AREA         1799.67    -736.77         0.00
LOCATION RW07R070 AREA         1848.69    -730.99         0.00
LOCATION RW07R071 AREA         1897.72    -725.20         0.00
LOCATION RW07R072 AREA         1946.75    -719.42         0.00
LOCATION RW07R073 AREA         1995.77    -713.64         0.00
LOCATION RW07R074 AREA         2044.80    -707.85         0.00
LOCATION DS25L002 AREA         1729.63    -765.17         0.00
LOCATION DS25L003 AREA         1698.93    -768.79         0.00
LOCATION DS25L004 AREA         1461.65    -796.79         0.00
LOCATION DS25L007 AREA          866.00    -867.06         0.00
LOCATION DS25L008 AREA          705.81    -885.95         0.00
LOCATION DS25L009 AREA          507.19    -909.39         0.00
LOCATION DS25L010 AREA          308.57    -932.82         0.00
LOCATION DS25L011 AREA          109.95    -956.25         0.00
LOCATION DS25L012 AREA         -208.65    -993.83         0.00
LOCATION DS25L013 AREA         -287.30   -1003.11         0.00
LOCATION DS25L014 AREA         -530.94   -1031.85         0.00
LOCATION DS25L015 AREA         -716.13   -1053.70         0.00
LOCATION DS25L016 AREA         -883.17   -1073.41         0.00
LOCATION DS25L039 AREA         1683.58    -770.61         0.00
LOCATION DS25L040 AREA         1500.30    -792.23         0.00
LOCATION DS25L041 AREA         1301.68    -815.66         0.00
LOCATION DS25L043 AREA          823.98    -872.01         0.00
LOCATION DS25L044 AREA          705.81    -885.95         0.00
LOCATION DS25L045 AREA          507.19    -909.39         0.00
LOCATION DS25L046 AREA          308.57    -932.82         0.00
LOCATION DS25L047 AREA          109.95    -956.25         0.00
LOCATION DS25L048 AREA          -88.68    -979.68         0.00
LOCATION DS25L049 AREA         -287.30   -1003.11         0.00
LOCATION DS25L050 AREA         -485.92   -1026.54         0.00
LOCATION DS25L051 AREA         -684.55   -1049.98         0.00
LOCATION DS25L052 AREA         -883.17   -1073.41         0.00
LOCATION DS25L053 AREA        -1081.79   -1096.84         0.00
LOCATION DS25L075 AREA         1589.86    -781.66         0.00
LOCATION DS25L076 AREA         1500.30    -792.23         0.00
LOCATION DS25L077 AREA         1301.68    -815.66         0.00
LOCATION DS25L079 AREA          718.93    -884.41         0.00
LOCATION DS25L080 AREA          705.81    -885.95         0.00
LOCATION DS25L081 AREA          507.19    -909.39         0.00
LOCATION DS25L082 AREA          308.57    -932.82         0.00
LOCATION DS25L083 AREA          109.95    -956.25         0.00
LOCATION DS25L084 AREA          -88.68    -979.68         0.00
LOCATION DS25L085 AREA         -443.43   -1021.53         0.00
LOCATION DS25L086 AREA         -485.92   -1026.54         0.00
```

Table L.2-2
AERMOD Input File for 2003 Baseline Diesel PM Run

```
LOCATION DS25L087 AREA        -760.12   -1058.89        0.00
LOCATION DS25L088 AREA        -883.17   -1073.41        0.00
LOCATION DS25L089 AREA       -1081.79   -1096.84        0.00
LOCATION DS25L090 AREA       -1280.41   -1120.27        0.00
LOCATION DS25L112 AREA        1496.15    -792.72        0.00
LOCATION DS25L113 AREA        1301.68    -815.66        0.00
LOCATION DS25L114 AREA        1103.06    -839.09        0.00
LOCATION DS25L116 AREA         615.44    -896.61        0.00
LOCATION DS25L117 AREA         469.40    -913.84        0.00
LOCATION DS25L118 AREA         308.57    -932.82        0.00
LOCATION DS25L119 AREA         109.95    -956.25        0.00
LOCATION DS25L120 AREA         -88.68    -979.68        0.00
LOCATION DS25L121 AREA        -287.30   -1003.11        0.00
LOCATION DS25L122 AREA        -611.13   -1041.31        0.00
LOCATION DS25L123 AREA        -684.55   -1049.98        0.00
LOCATION DS25L124 AREA        -918.00   -1077.52        0.00
LOCATION DS25L125 AREA       -1081.79   -1096.84        0.00
LOCATION DS25L126 AREA       -1280.41   -1120.27        0.00
LOCATION DS25L127 AREA       -1479.04   -1143.70        0.00
LOCATION DS25L148 AREA        1402.43    -803.77        0.00
LOCATION DS25L149 AREA        1276.26    -818.66        0.00
LOCATION DS25L150 AREA        1103.06    -839.09        0.00
LOCATION DS25L151 AREA         904.44    -862.52        0.00
LOCATION DS25L152 AREA         530.30    -906.66        0.00
LOCATION DS25L153 AREA         507.19    -909.39        0.00
LOCATION DS25L154 AREA         308.57    -932.82        0.00
LOCATION DS25L155 AREA         109.95    -956.25        0.00
LOCATION DS25L156 AREA         -88.68    -979.68        0.00
LOCATION DS25L157 AREA        -287.30   -1003.11        0.00
LOCATION DS25L158 AREA        -485.92   -1026.54        0.00
LOCATION DS25L159 AREA        -778.82   -1061.10        0.00
LOCATION DS25L160 AREA        -883.17   -1073.41        0.00
LOCATION DS25L161 AREA       -1081.79   -1096.84        0.00
LOCATION DS25L162 AREA       -1280.41   -1120.27        0.00
LOCATION DS25L163 AREA       -1479.04   -1143.70        0.00
LOCATION DS25L164 AREA       -1677.66   -1167.13        0.00
LOCATION DS25L184 AREA        1308.71    -814.83        0.00
LOCATION DS25L185 AREA        1301.68    -815.66        0.00
LOCATION DS25L186 AREA        1103.06    -839.09        0.00
LOCATION DS25L187 AREA         885.10    -864.80        0.00
LOCATION DS25L188 AREA         705.81    -885.95        0.00
LOCATION DS25L189 AREA         445.17    -916.70        0.00
LOCATION DS25L190 AREA         308.57    -932.82        0.00
LOCATION DS25L191 AREA         109.95    -956.25        0.00
LOCATION DS25L192 AREA        -115.31    -982.82        0.00
LOCATION DS25L193 AREA        -303.58   -1005.03        0.00
LOCATION DS25L194 AREA        -485.92   -1026.54        0.00
LOCATION DS25L196 AREA        -946.52   -1080.88        0.00
LOCATION DS25L197 AREA       -1081.79   -1096.84        0.00
LOCATION DS25L198 AREA       -1280.41   -1120.27        0.00
LOCATION DS25L199 AREA       -1479.04   -1143.70        0.00
LOCATION DS25L200 AREA       -1677.66   -1167.13        0.00
LOCATION DS25L201 AREA       -1876.28   -1190.57        0.00
LOCATION DS25L221 AREA        1215.00    -825.88        0.00
LOCATION DS25L222 AREA        1064.82    -843.60        0.00
LOCATION DS25L223 AREA         904.44    -862.52        0.00
LOCATION DS25L224 AREA         705.81    -885.95        0.00
LOCATION DS25L225 AREA         360.03    -926.75        0.00
LOCATION DS25L226 AREA         308.57    -932.82        0.00
LOCATION DS25L227 AREA         109.95    -956.25        0.00
LOCATION DS25L228 AREA         -88.68    -979.68        0.00
LOCATION DS25L229 AREA        -287.30   -1003.11        0.00
LOCATION DS25L230 AREA        -485.92   -1026.54        0.00
LOCATION DS25L231 AREA        -684.55   -1049.98        0.00
LOCATION DS25L233 AREA       -1114.22   -1100.67        0.00
LOCATION DS25L234 AREA       -1280.41   -1120.27        0.00
LOCATION DS25L235 AREA       -1479.04   -1143.70        0.00
LOCATION DS25L236 AREA       -1677.66   -1167.13        0.00
LOCATION DS25L237 AREA       -1876.28   -1190.57        0.00
LOCATION DS25L238 AREA       -2074.90   -1214.00        0.00
LOCATION DS25L257 AREA        1121.28    -836.94        0.00
```

Table L.2-2
AERMOD Input File for 2003 Baseline Diesel PM Run

```
LOCATION DS25L258 AREA        1103.06    -839.09         0.00
LOCATION DS25L259 AREA         904.44    -862.52         0.00
LOCATION DS25L260 AREA         655.45    -891.90         0.00
LOCATION DS25L261 AREA         507.19    -909.39         0.00
LOCATION DS25L262 AREA         274.89    -936.79         0.00
LOCATION DS25L263 AREA         109.95    -956.25         0.00
LOCATION DS25L264 AREA         -88.68    -979.68         0.00
LOCATION DS25L265 AREA        -287.30   -1003.11         0.00
LOCATION DS25L266 AREA        -570.04   -1036.47         0.00
LOCATION DS25L267 AREA        -684.55   -1049.98         0.00
LOCATION DS25L268 AREA        -883.17   -1073.41         0.00
LOCATION DS25L270 AREA       -1281.91   -1120.45         0.00
LOCATION DS25L271 AREA       -1479.04   -1143.70         0.00
LOCATION DS25L272 AREA       -1677.66   -1167.13         0.00
LOCATION DS25L273 AREA       -1876.28   -1190.57         0.00
LOCATION DS25L274 AREA       -2074.90   -1214.00         0.00
LOCATION DS25L294 AREA        1027.57    -848.00         0.00
LOCATION DS25L295 AREA         884.01    -864.93         0.00
LOCATION DS25L296 AREA         705.81    -885.95         0.00
LOCATION DS25L297 AREA         507.19    -909.39         0.00
LOCATION DS25L298 AREA         308.57    -932.82         0.00
LOCATION DS25L299 AREA         109.95    -956.25         0.00
LOCATION DS25L300 AREA         -88.68    -979.68         0.00
LOCATION DS25L301 AREA        -287.30   -1003.11         0.00
LOCATION DS25L302 AREA        -485.92   -1026.54         0.00
LOCATION DS25L303 AREA        -688.85   -1050.48         0.00
LOCATION DS25L304 AREA        -883.17   -1073.41         0.00
LOCATION DS25L305 AREA       -1081.79   -1096.84         0.00
LOCATION DS25L306 AREA       -1280.41   -1120.27         0.00
LOCATION DS25L307 AREA       -1479.04   -1143.70         0.00
LOCATION DS25L308 AREA       -1677.66   -1167.13         0.00
LOCATION DS25L309 AREA       -1876.28   -1190.57         0.00
LOCATION DS25L310 AREA       -2074.90   -1214.00         0.00
LOCATION DS25L311 AREA       -2273.53   -1237.43         0.00
LOCATION DS25L330 AREA         933.85    -859.05         0.00
LOCATION DS25L331 AREA         904.44    -862.52         0.00
LOCATION DS25L332 AREA         705.81    -885.95         0.00
LOCATION DS25L333 AREA         507.19    -909.39         0.00
LOCATION DS25L334 AREA         295.79    -934.33         0.00
LOCATION DS25L335 AREA         104.62    -956.88         0.00
LOCATION DS25L336 AREA         -88.68    -979.68         0.00
LOCATION DS25L337 AREA        -287.30   -1003.11         0.00
LOCATION DS25L338 AREA        -485.92   -1026.54         0.00
LOCATION DS25L339 AREA        -801.22   -1063.74         0.00
LOCATION DS25L340 AREA        -883.17   -1073.41         0.00
LOCATION DS25L341 AREA       -1081.79   -1096.84         0.00
LOCATION DS25L342 AREA       -1332.30   -1126.39         0.00
LOCATION DS25L343 AREA       -1479.04   -1143.70         0.00
LOCATION DS25L344 AREA       -1677.66   -1167.13         0.00
LOCATION DS25L345 AREA       -1876.28   -1190.57         0.00
LOCATION DS25L346 AREA       -2074.90   -1214.00         0.00
LOCATION DS25L347 AREA       -2329.19   -1244.00         0.00
LOCATION DS25L348 AREA       -2472.15   -1260.86         0.00
LOCATION DS25L367 AREA         840.13    -870.11         0.00
LOCATION DS25L368 AREA         703.20    -886.26         0.00
LOCATION DS25L369 AREA         476.19    -913.04         0.00
LOCATION DS25L370 AREA         308.57    -932.82         0.00
LOCATION DS25L371 AREA         109.95    -956.25         0.00
LOCATION DS25L372 AREA        -128.51    -984.38         0.00
LOCATION DS25L373 AREA        -287.30   -1003.11         0.00
LOCATION DS25L374 AREA        -485.92   -1026.54         0.00
LOCATION DS25L375 AREA        -684.55   -1049.98         0.00
LOCATION DS25L376 AREA        -913.59   -1077.00         0.00
LOCATION DS25L377 AREA       -1081.79   -1096.84         0.00
LOCATION DS25L379 AREA       -1583.68   -1156.05         0.00
LOCATION DS25L380 AREA       -1677.66   -1167.13         0.00
LOCATION DS25L381 AREA       -1876.28   -1190.57         0.00
LOCATION DS25L382 AREA       -2074.90   -1214.00         0.00
LOCATION DS25L383 AREA       -2273.53   -1237.43         0.00
LOCATION DS25L384 AREA       -2509.65   -1265.29         0.00
LOCATION DS25L385 AREA       -2670.77   -1284.29         0.00
```

Table L.2-2
AERMOD Input File for 2003 Baseline Diesel PM Run

```
LOCATION DS25L403 AREA         746.42    -881.16        0.00
LOCATION DS25L404 AREA         705.81    -885.95        0.00
LOCATION DS25L405 AREA         507.19    -909.39        0.00
LOCATION DS25L406 AREA         308.57    -932.82        0.00
LOCATION DS25L407 AREA         109.95    -956.25        0.00
LOCATION DS25L408 AREA         -88.68    -979.68        0.00
LOCATION DS25L409 AREA        -287.30   -1003.11        0.00
LOCATION DS25L410 AREA        -485.92   -1026.54        0.00
LOCATION DS25L411 AREA        -684.55   -1049.98        0.00
LOCATION DS25L412 AREA        -883.17   -1073.41        0.00
LOCATION DS25L413 AREA       -1081.79   -1096.84        0.00
LOCATION DS25L414 AREA       -1280.41   -1120.27        0.00
LOCATION DS25L416 AREA       -1835.07   -1185.70        0.00
LOCATION DS25L417 AREA       -1876.28   -1190.57        0.00
LOCATION DS25L418 AREA       -2074.90   -1214.00        0.00
LOCATION DS25L419 AREA       -2273.53   -1237.43        0.00
LOCATION DS25L420 AREA       -2472.15   -1260.86        0.00
LOCATION DS25L421 AREA       -2690.12   -1286.58        0.00
LOCATION DS25L422 AREA       -2869.39   -1307.73        0.00
LOCATION DS25L440 AREA         652.70    -892.22        0.00
LOCATION DS25L441 AREA         507.19    -909.39        0.00
LOCATION DS25L442 AREA         209.49    -944.50        0.00
LOCATION DS25L443 AREA         109.95    -956.25        0.00
LOCATION DS25L444 AREA        -100.53    -981.08        0.00
LOCATION DS25L445 AREA        -341.54   -1009.51        0.00
LOCATION DS25L446 AREA        -493.72   -1027.46        0.00
LOCATION DS25L447 AREA        -684.55   -1049.98        0.00
LOCATION DS25L448 AREA        -883.17   -1073.41        0.00
LOCATION DS25L449 AREA       -1138.34   -1103.51        0.00
LOCATION DS25L450 AREA       -1280.41   -1120.27        0.00
LOCATION DS25L451 AREA       -1479.04   -1143.70        0.00
LOCATION DS25L454 AREA       -2086.45   -1215.36        0.00
LOCATION DS25L455 AREA       -2273.53   -1237.43        0.00
LOCATION DS25L456 AREA       -2472.15   -1260.86        0.00
LOCATION DS25L457 AREA       -2670.77   -1284.29        0.00
LOCATION DS25L458 AREA       -2870.59   -1307.87        0.00
LOCATION DS25L459 AREA       -3068.02   -1331.16        0.00
LOCATION DS25L476 AREA         558.98    -903.28        0.00
LOCATION DS25L477 AREA         507.19    -909.39        0.00
LOCATION DS25L478 AREA         308.57    -932.82        0.00
LOCATION DS25L479 AREA          76.15    -960.24        0.00
LOCATION DS25L480 AREA         -88.68    -979.68        0.00
LOCATION DS25L481 AREA        -287.30   -1003.11        0.00
LOCATION DS25L482 AREA        -485.92   -1026.54        0.00
LOCATION DS25L483 AREA        -684.55   -1049.98        0.00
LOCATION DS25L484 AREA        -883.17   -1073.41        0.00
LOCATION DS25L485 AREA       -1081.79   -1096.84        0.00
LOCATION DS25L486 AREA       -1280.41   -1120.27        0.00
LOCATION DS25L487 AREA       -1479.04   -1143.70        0.00
LOCATION DS25L488 AREA       -1677.66   -1167.13        0.00
LOCATION DS25L491 AREA       -2288.10   -1239.15        0.00
LOCATION DS25L492 AREA       -2472.15   -1260.86        0.00
LOCATION DS25L493 AREA       -2670.77   -1284.29        0.00
LOCATION DS25L494 AREA       -2869.39   -1307.73        0.00
LOCATION DS25L495 AREA       -3068.02   -1331.16        0.00
LOCATION DS25L496 AREA       -3266.64   -1354.59        0.00
LOCATION DS25L513 AREA         465.27    -914.33        0.00
LOCATION DS25L514 AREA         308.57    -932.82        0.00
LOCATION DS25L515 AREA         -57.20    -975.97        0.00
LOCATION DS25L516 AREA         -88.68    -979.68        0.00
LOCATION DS25L517 AREA        -287.30   -1003.11        0.00
LOCATION DS25L518 AREA        -485.92   -1026.54        0.00
LOCATION DS25L519 AREA        -684.55   -1049.98        0.00
LOCATION DS25L520 AREA        -883.17   -1073.41        0.00
LOCATION DS25L521 AREA       -1081.79   -1096.84        0.00
LOCATION DS25L522 AREA       -1363.08   -1130.02        0.00
LOCATION DS25L523 AREA       -1479.04   -1143.70        0.00
LOCATION DS25L524 AREA       -1677.66   -1167.13        0.00
LOCATION DS25L527 AREA       -2428.30   -1255.69        0.00
LOCATION DS25L528 AREA       -2472.15   -1260.86        0.00
LOCATION DS25L529 AREA       -2670.77   -1284.29        0.00
```

Table L.2-2
AERMOD Input File for 2003 Baseline Diesel PM Run

LOCATION	DS25L530	AREA	-2869.39	-1307.73	0.00
LOCATION	DS25L531	AREA	-3068.02	-1331.16	0.00
LOCATION	DS25L532	AREA	-3266.64	-1354.59	0.00
LOCATION	DS25L533	AREA	-3465.26	-1378.02	0.00
LOCATION	AS25L001	AREA	2247.78	-704.05	0.00
LOCATION	AS25L037	AREA	2294.79	-698.50	0.00
LOCATION	AS25L038	AREA	2493.42	-675.07	0.00
LOCATION	AS25L039	AREA	2629.15	-659.05	0.00
LOCATION	AS25L075	AREA	2692.04	-651.64	0.00
LOCATION	AS25L076	AREA	2890.66	-628.20	0.00
LOCATION	AS25L077	AREA	3008.31	-614.32	0.00
LOCATION	AS25L113	AREA	3089.28	-604.77	0.00
LOCATION	AS25L114	AREA	3287.91	-581.34	0.00
LOCATION	AS25L115	AREA	3387.11	-569.64	0.00
LOCATION	AS25L151	AREA	3486.53	-557.91	0.00
LOCATION	AS25L152	AREA	3685.15	-534.48	0.00
LOCATION	AS25L153	AREA	3765.90	-524.95	0.00
LOCATION	AS25L188	AREA	3685.15	-534.48	0.00
LOCATION	AS25L189	AREA	3883.78	-511.05	0.00
LOCATION	AS25L190	AREA	4082.40	-487.61	0.00
LOCATION	AS25L191	AREA	4144.69	-480.26	0.00
LOCATION	AS25L226	AREA	4082.40	-487.61	0.00
LOCATION	AS25L227	AREA	4281.02	-464.18	0.00
LOCATION	AS25L228	AREA	4479.64	-440.75	0.00
LOCATION	AS25L229	AREA	4523.48	-435.58	0.00
LOCATION	AS25L264	AREA	4479.64	-440.75	0.00
LOCATION	AS25L265	AREA	4678.27	-417.32	0.00
LOCATION	AS25L266	AREA	4876.89	-393.89	0.00
LOCATION	AS25L267	AREA	4902.28	-390.89	0.00
LOCATION	AS25L302	AREA	4876.89	-393.89	0.00
LOCATION	AS25L303	AREA	5075.51	-370.45	0.00
LOCATION	AS25L304	AREA	5274.13	-347.02	0.00
LOCATION	AS25L305	AREA	5281.07	-346.20	0.00
LOCATION	AS25L340	AREA	5274.13	-347.02	0.00
LOCATION	AS25L341	AREA	5472.76	-323.59	0.00
LOCATION	AS25L342	AREA	5659.86	-301.52	0.00
LOCATION	AS25L377	AREA	5472.76	-323.59	0.00
LOCATION	AS25L378	AREA	5671.38	-300.16	0.00
LOCATION	AS25L379	AREA	5870.00	-276.73	0.00
LOCATION	AS25L380	AREA	6038.65	-256.83	0.00
LOCATION	AS25L415	AREA	5870.00	-276.73	0.00
LOCATION	AS25L416	AREA	6068.62	-253.30	0.00
LOCATION	AS25L417	AREA	6267.25	-229.86	0.00
LOCATION	AS25L418	AREA	6417.44	-212.14	0.00
LOCATION	AS25L453	AREA	6267.25	-229.86	0.00
LOCATION	AS25L454	AREA	6465.87	-206.43	0.00
LOCATION	AS25L455	AREA	6664.49	-183.00	0.00
LOCATION	AS25L456	AREA	6796.24	-167.46	0.00
LOCATION	AS25L491	AREA	6664.49	-183.00	0.00
LOCATION	AS25L492	AREA	6863.11	-159.57	0.00
LOCATION	AS25L493	AREA	7061.74	-136.14	0.00
LOCATION	AS25L494	AREA	7175.03	-122.77	0.00
LOCATION	AS25L528	AREA	6863.11	-159.57	0.00
LOCATION	AS25L529	AREA	7061.74	-136.14	0.00
LOCATION	AS25L530	AREA	7260.36	-112.70	0.00
LOCATION	AS25L531	AREA	7458.98	-89.27	0.00
LOCATION	AS25L532	AREA	7644.73	-67.36	0.00
LOCATION	QU24R001	AREA	60.83	882.82	0.00
LOCATION	QU24R002	AREA	83.33	761.32	0.00
LOCATION	RW06L001	AREA	-2650.17	571.93	0.00
LOCATION	RW06L002	AREA	-2601.08	577.73	0.00
LOCATION	RW06L003	AREA	-2551.99	583.53	0.00
LOCATION	RW06L004	AREA	-2502.90	589.33	0.00
LOCATION	RW06L005	AREA	-2453.81	595.13	0.00
LOCATION	RW06L006	AREA	-2404.72	600.93	0.00
LOCATION	RW06L007	AREA	-2355.63	606.73	0.00
LOCATION	RW06L008	AREA	-2306.54	612.53	0.00
LOCATION	RW06L009	AREA	-2257.45	618.33	0.00
LOCATION	RW06L010	AREA	-2208.36	624.13	0.00
LOCATION	RW06L011	AREA	-2159.26	629.93	0.00
LOCATION	RW06L012	AREA	-2110.17	635.73	0.00

Table L.2-2
AERMOD Input File for 2003 Baseline Diesel PM Run

```
LOCATION RW06L013 AREA       -2061.08      641.53        0.00
LOCATION RW06L014 AREA       -2011.99      647.33        0.00
LOCATION RW06L015 AREA       -1962.90      653.13        0.00
LOCATION RW06L016 AREA       -1913.81      658.93        0.00
LOCATION RW06L017 AREA       -1864.72      664.73        0.00
LOCATION RW06L018 AREA       -1815.63      670.53        0.00
LOCATION RW06L019 AREA       -1766.54      676.33        0.00
LOCATION RW06L020 AREA       -1717.45      682.13        0.00
LOCATION RW06L021 AREA       -1668.36      687.93        0.00
LOCATION RW06L022 AREA       -1619.26      693.73        0.00
LOCATION RW06L023 AREA       -1570.17      699.53        0.00
LOCATION RW06L024 AREA       -1521.08      705.33        0.00
LOCATION RW06L025 AREA       -1471.99      711.13        0.00
LOCATION RW06L026 AREA       -1422.90      716.93        0.00
LOCATION RW06L027 AREA       -1373.81      722.73        0.00
LOCATION RW06L028 AREA       -1324.72      728.53        0.00
LOCATION RW06L029 AREA       -1275.63      734.33        0.00
LOCATION RW06L030 AREA       -1226.54      740.13        0.00
LOCATION RW06L031 AREA       -1177.45      745.93        0.00
LOCATION RW06L032 AREA       -1128.36      751.73        0.00
LOCATION RW06L033 AREA       -1079.26      757.53        0.00
LOCATION RW06L034 AREA       -1030.17      763.33        0.00
LOCATION RW06L035 AREA        -981.08      769.13        0.00
LOCATION RW06L036 AREA        -931.99      774.93        0.00
LOCATION RW06L037 AREA        -882.90      780.73        0.00
LOCATION RW06L038 AREA        -833.81      786.53        0.00
LOCATION RW06L039 AREA        -784.72      792.33        0.00
LOCATION RW06L040 AREA        -735.63      798.13        0.00
LOCATION RW06L041 AREA        -686.54      803.93        0.00
LOCATION RW06L042 AREA        -637.45      809.73        0.00
LOCATION RW06L043 AREA        -588.36      815.53        0.00
LOCATION RW06L044 AREA        -539.26      821.33        0.00
LOCATION RW06L045 AREA        -490.17      827.13        0.00
LOCATION RW06L046 AREA        -441.08      832.93        0.00
LOCATION RW06L047 AREA        -391.99      838.73        0.00
LOCATION RW06L048 AREA        -342.90      844.53        0.00
LOCATION RW06L049 AREA        -293.81      850.33        0.00
LOCATION RW06L050 AREA        -244.72      856.13        0.00
LOCATION RW06L051 AREA        -195.63      861.93        0.00
LOCATION RW06L052 AREA        -146.54      867.73        0.00
LOCATION RW06L053 AREA         -97.45      873.53        0.00
LOCATION RW06L054 AREA         -48.36      879.33        0.00
LOCATION RW06L055 AREA           0.74      885.13        0.00
LOCATION DS24R002 AREA        -322.93      826.75        0.00
LOCATION DS24R003 AREA        -345.06      824.14        0.00
LOCATION DS24R004 AREA        -582.34      796.10        0.00
LOCATION DS24R007 AREA       -1177.98      725.73        0.00
LOCATION DS24R008 AREA       -1338.16      706.80        0.00
LOCATION DS24R009 AREA       -1536.78      683.34        0.00
LOCATION DS24R010 AREA       -1761.33      656.81        0.00
LOCATION DS24R012 AREA       -2252.60      598.76        0.00
LOCATION DS24R014 AREA       -2574.88      560.69        0.00
LOCATION DS24R039 AREA        -360.41      822.32        0.00
LOCATION DS24R040 AREA        -543.68      800.67        0.00
LOCATION DS24R041 AREA        -742.30      777.20        0.00
LOCATION DS24R043 AREA       -1219.99      720.76        0.00
LOCATION DS24R044 AREA       -1365.19      703.61        0.00
LOCATION DS24R045 AREA       -1536.78      683.34        0.00
LOCATION DS24R046 AREA       -1735.39      659.87        0.00
LOCATION DS24R047 AREA       -1934.01      636.40        0.00
LOCATION DS24R048 AREA       -2319.68      590.84        0.00
LOCATION DS24R049 AREA       -2331.25      589.47        0.00
LOCATION DS24R050 AREA       -2640.36      552.95        0.00
LOCATION DS24R051 AREA       -2728.49      542.54        0.00
LOCATION DS24R075 AREA        -454.13      811.25        0.00
LOCATION DS24R076 AREA        -543.68      800.67        0.00
LOCATION DS24R077 AREA        -742.30      777.20        0.00
LOCATION DS24R079 AREA       -1325.04      708.35        0.00
LOCATION DS24R080 AREA       -1338.16      706.80        0.00
LOCATION DS24R081 AREA       -1590.85      676.95        0.00
LOCATION DS24R082 AREA       -1735.39      659.87        0.00
```

Table L.2-2
AERMOD Input File for 2003 Baseline Diesel PM Run

```
LOCATION DS24R083 AREA       -1947.85     634.77        0.00
LOCATION DS24R085 AREA       -2487.38     571.03        0.00
LOCATION DS24R086 AREA       -2529.87     566.01        0.00
LOCATION DS24R087 AREA       -2804.06     533.61        0.00
LOCATION DS24R088 AREA       -2927.10     519.07        0.00
LOCATION DS24R112 AREA        -547.84     800.18        0.00
LOCATION DS24R113 AREA        -742.30     777.20        0.00
LOCATION DS24R114 AREA        -940.92     753.74        0.00
LOCATION DS24R116 AREA       -1430.08     695.94        0.00
LOCATION DS24R117 AREA       -1704.42     663.53        0.00
LOCATION DS24R118 AREA       -1735.39     659.87        0.00
LOCATION DS24R119 AREA       -1934.01     636.40        0.00
LOCATION DS24R120 AREA       -2132.63     612.94        0.00
LOCATION DS24R122 AREA       -2655.07     551.21        0.00
LOCATION DS24R123 AREA       -2728.49     542.54        0.00
LOCATION DS24R124 AREA       -2961.94     514.96        0.00
LOCATION DS24R125 AREA       -3125.72     495.61        0.00
LOCATION DS24R148 AREA        -641.55     789.11        0.00
LOCATION DS24R149 AREA        -798.35     770.58        0.00
LOCATION DS24R150 AREA        -940.92     753.74        0.00
LOCATION DS24R151 AREA       -1139.54     730.27        0.00
LOCATION DS24R152 AREA       -1535.12     683.53        0.00
LOCATION DS24R153 AREA       -1536.78     683.34        0.00
LOCATION DS24R154 AREA       -1800.50     652.18        0.00
LOCATION DS24R155 AREA       -1934.01     636.40        0.00
LOCATION DS24R156 AREA       -2132.63     612.94        0.00
LOCATION DS24R157 AREA       -2331.25     589.47        0.00
LOCATION DS24R159 AREA       -2822.76     531.40        0.00
LOCATION DS24R160 AREA       -2927.10     519.07        0.00
LOCATION DS24R161 AREA       -3125.72     495.61        0.00
LOCATION DS24R184 AREA        -735.27     778.03        0.00
LOCATION DS24R185 AREA        -742.30     777.20        0.00
LOCATION DS24R186 AREA        -940.92     753.74        0.00
LOCATION DS24R187 AREA       -1158.87     727.99        0.00
LOCATION DS24R188 AREA       -1338.16     706.80        0.00
LOCATION DS24R189 AREA       -1640.17     671.12        0.00
LOCATION DS24R190 AREA       -1735.39     659.87        0.00
LOCATION DS24R191 AREA       -1934.01     636.40        0.00
LOCATION DS24R192 AREA       -2159.26     609.79        0.00
LOCATION DS24R193 AREA       -2347.53     587.55        0.00
LOCATION DS24R194 AREA       -2529.87     566.01        0.00
LOCATION DS24R196 AREA       -2990.46     511.59        0.00
LOCATION DS24R197 AREA       -3125.72     495.61        0.00
LOCATION DS24R198 AREA       -3324.34     472.14        0.00
LOCATION DS24R221 AREA        -828.98     766.96        0.00
LOCATION DS24R222 AREA        -979.16     749.22        0.00
LOCATION DS24R223 AREA       -1139.54     730.27        0.00
LOCATION DS24R224 AREA       -1338.16     706.80        0.00
LOCATION DS24R226 AREA       -1746.42     658.57        0.00
LOCATION DS24R227 AREA       -1992.65     629.48        0.00
LOCATION DS24R228 AREA       -2132.63     612.94        0.00
LOCATION DS24R229 AREA       -2331.25     589.47        0.00
LOCATION DS24R230 AREA       -2529.87     566.01        0.00
LOCATION DS24R231 AREA       -2728.49     542.54        0.00
LOCATION DS24R233 AREA       -3158.15     491.78        0.00
LOCATION DS24R234 AREA       -3324.34     472.14        0.00
LOCATION DS24R235 AREA       -3522.96     448.67        0.00
LOCATION DS24R257 AREA        -922.70     755.89        0.00
LOCATION DS24R258 AREA        -940.92     753.74        0.00
LOCATION DS24R259 AREA       -1139.54     730.27        0.00
LOCATION DS24R260 AREA       -1388.52     700.85        0.00
LOCATION DS24R261 AREA       -1536.78     683.34        0.00
LOCATION DS24R262 AREA       -1852.93     645.98        0.00
LOCATION DS24R263 AREA       -1934.01     636.40        0.00
LOCATION DS24R264 AREA       -2132.63     612.94        0.00
LOCATION DS24R265 AREA       -2331.25     589.47        0.00
LOCATION DS24R266 AREA       -2613.99     556.07        0.00
LOCATION DS24R267 AREA       -2728.49     542.54        0.00
LOCATION DS24R268 AREA       -2927.10     519.07        0.00
LOCATION DS24R270 AREA       -3325.84     471.96        0.00
LOCATION DS24R271 AREA       -3522.96     448.67        0.00
```

Table L.2-2
AERMOD Input File for 2003 Baseline Diesel PM Run

```
LOCATION DS24R272 AREA       -3721.58     425.21       0.00
LOCATION DS24R294 AREA       -1016.41     744.82       0.00
LOCATION DS24R295 AREA       -1159.97     727.86       0.00
LOCATION DS24R296 AREA       -1503.34     687.29       0.00
LOCATION DS24R297 AREA       -1536.78     683.34       0.00
LOCATION DS24R298 AREA       -1735.39     659.87       0.00
LOCATION DS24R299 AREA       -1959.45     633.40       0.00
LOCATION DS24R300 AREA       -2184.81     606.77       0.00
LOCATION DS24R301 AREA       -2344.12     587.95       0.00
LOCATION DS24R302 AREA       -2529.87     566.01       0.00
LOCATION DS24R303 AREA       -2747.21     540.33       0.00
LOCATION DS24R304 AREA       -3124.85     495.71       0.00
LOCATION DS24R305 AREA       -3125.72     495.61       0.00
LOCATION DS24R306 AREA       -3324.34     472.14       0.00
LOCATION DS24R307 AREA       -3522.96     448.67       0.00
LOCATION DS24R308 AREA       -3721.58     425.21       0.00
LOCATION DS24R309 AREA       -3920.20     401.74       0.00
LOCATION DS24R330 AREA       -1110.13     733.75       0.00
LOCATION DS24R331 AREA       -1139.54     730.27       0.00
LOCATION DS24R332 AREA       -1338.16     706.80       0.00
LOCATION DS24R333 AREA       -1618.17     673.72       0.00
LOCATION DS24R334 AREA       -1748.18     658.36       0.00
LOCATION DS24R335 AREA       -2065.96     620.82       0.00
LOCATION DS24R336 AREA       -2132.63     612.94       0.00
LOCATION DS24R337 AREA       -2331.25     589.47       0.00
LOCATION DS24R338 AREA       -2529.87     566.01       0.00
LOCATION DS24R339 AREA       -2880.44     524.59       0.00
LOCATION DS24R340 AREA       -2927.10     519.07       0.00
LOCATION DS24R342 AREA       -3376.23     466.01       0.00
LOCATION DS24R343 AREA       -3522.96     448.67       0.00
LOCATION DS24R344 AREA       -3721.58     425.21       0.00
LOCATION DS24R345 AREA       -3920.20     401.74       0.00
LOCATION DS24R367 AREA       -1203.84     722.67       0.00
LOCATION DS24R368 AREA       -1340.77     706.50       0.00
LOCATION DS24R369 AREA       -1732.99     660.16       0.00
LOCATION DS24R370 AREA       -1735.39     659.87       0.00
LOCATION DS24R371 AREA       -1934.01     636.40       0.00
LOCATION DS24R372 AREA       -2172.47     608.23       0.00
LOCATION DS24R373 AREA       -2376.96     584.07       0.00
LOCATION DS24R374 AREA       -2571.97     561.03       0.00
LOCATION DS24R375 AREA       -2728.49     542.54       0.00
LOCATION DS24R376 AREA       -3013.67     508.85       0.00
LOCATION DS24R377 AREA       -3125.72     495.61       0.00
LOCATION DS24R379 AREA       -3627.61     436.31       0.00
LOCATION DS24R380 AREA       -3721.58     425.21       0.00
LOCATION DS24R381 AREA       -3920.20     401.74       0.00
LOCATION DS24R382 AREA       -4118.82     378.27       0.00
LOCATION DS24R403 AREA       -1297.55     711.60       0.00
LOCATION DS24R404 AREA       -1338.16     706.80       0.00
LOCATION DS24R405 AREA       -1536.78     683.34       0.00
LOCATION DS24R406 AREA       -1847.81     646.59       0.00
LOCATION DS24R407 AREA       -1934.01     636.40       0.00
LOCATION DS24R408 AREA       -2132.63     612.94       0.00
LOCATION DS24R409 AREA       -2331.25     589.47       0.00
LOCATION DS24R410 AREA       -2529.87     566.01       0.00
LOCATION DS24R411 AREA       -2728.49     542.54       0.00
LOCATION DS24R412 AREA       -2927.10     519.07       0.00
LOCATION DS24R413 AREA       -3146.90     493.11       0.00
LOCATION DS24R416 AREA       -3878.99     406.61       0.00
LOCATION DS24R417 AREA       -3920.20     401.74       0.00
LOCATION DS24R418 AREA       -4118.82     378.27       0.00
LOCATION DS24R419 AREA       -4317.43     354.81       0.00
LOCATION DS24R440 AREA       -1391.27     700.53       0.00
LOCATION DS24R441 AREA       -1536.78     683.34       0.00
LOCATION DS24R443 AREA       -1962.64     633.02       0.00
LOCATION DS24R444 AREA       -2144.49     611.54       0.00
LOCATION DS24R445 AREA       -2385.49     583.06       0.00
LOCATION DS24R446 AREA       -2569.12     561.37       0.00
LOCATION DS24R447 AREA       -2799.81     534.11       0.00
LOCATION DS24R448 AREA       -2927.10     519.07       0.00
LOCATION DS24R449 AREA       -3280.12     477.36       0.00
```

Table L.2-2
AERMOD Input File for 2003 Baseline Diesel PM Run

```
LOCATION DS24R450 AREA       -3324.34     472.14       0.00
LOCATION DS24R454 AREA       -4130.37     376.91       0.00
LOCATION DS24R455 AREA       -4317.43     354.81       0.00
LOCATION DS24R456 AREA       -4516.05     331.34       0.00
LOCATION DS24R476 AREA       -1484.98     689.46       0.00
LOCATION DS24R477 AREA       -1536.78     683.34       0.00
LOCATION DS24R478 AREA       -1735.39     659.87       0.00
LOCATION DS24R479 AREA       -2077.46     619.46       0.00
LOCATION DS24R480 AREA       -2132.63     612.94       0.00
LOCATION DS24R481 AREA       -2331.25     589.47       0.00
LOCATION DS24R482 AREA       -2529.87     566.01       0.00
LOCATION DS24R483 AREA       -2728.49     542.54       0.00
LOCATION DS24R484 AREA       -2927.10     519.07       0.00
LOCATION DS24R485 AREA       -3125.72     495.61       0.00
LOCATION DS24R486 AREA       -3413.35     461.62       0.00
LOCATION DS24R487 AREA       -3522.96     448.67       0.00
LOCATION DS24R491 AREA       -4332.01     353.09       0.00
LOCATION DS24R492 AREA       -4516.05     331.34       0.00
LOCATION DS24R493 AREA       -4714.67     307.88       0.00
LOCATION DS24R513 AREA       -1578.70     678.38       0.00
LOCATION DS24R514 AREA       -1735.39     659.87       0.00
LOCATION DS24R516 AREA       -2192.28     605.89       0.00
LOCATION DS24R517 AREA       -2331.25     589.47       0.00
LOCATION DS24R518 AREA       -2529.87     566.01       0.00
LOCATION DS24R519 AREA       -2728.49     542.54       0.00
LOCATION DS24R520 AREA       -3027.65     507.19       0.00
LOCATION DS24R521 AREA       -3125.72     495.61       0.00
LOCATION DS24R523 AREA       -3546.58     445.88       0.00
LOCATION DS24R527 AREA       -4472.21     336.52       0.00
LOCATION DS24R528 AREA       -4516.05     331.34       0.00
LOCATION DS24R529 AREA       -4714.67     307.88       0.00
LOCATION DS24R530 AREA       -4913.29     284.41       0.00
LOCATION AS24R001 AREA         203.77     888.98       0.00
LOCATION AS24R037 AREA         250.79     894.54       0.00
LOCATION AS24R038 AREA         449.41     918.00       0.00
LOCATION AS24R039 AREA         585.14     934.04       0.00
LOCATION AS24R075 AREA         648.03     941.47       0.00
LOCATION AS24R076 AREA         846.65     964.93       0.00
LOCATION AS24R077 AREA         964.30     978.83       0.00
LOCATION AS24R113 AREA        1045.27     988.40       0.00
LOCATION AS24R114 AREA        1243.88    1011.87       0.00
LOCATION AS24R115 AREA        1343.08    1023.59       0.00
LOCATION AS24R151 AREA        1442.50    1035.33       0.00
LOCATION AS24R152 AREA        1641.12    1058.80       0.00
LOCATION AS24R153 AREA        1721.87    1068.34       0.00
LOCATION AS24R188 AREA        1641.12    1058.80       0.00
LOCATION AS24R189 AREA        1839.74    1082.27       0.00
LOCATION AS24R190 AREA        2038.36    1105.73       0.00
LOCATION AS24R191 AREA        2100.65    1113.09       0.00
LOCATION AS24R226 AREA        2038.36    1105.73       0.00
LOCATION AS24R227 AREA        2236.98    1129.20       0.00
LOCATION AS24R228 AREA        2435.60    1152.67       0.00
LOCATION AS24R229 AREA        2479.44    1157.85       0.00
LOCATION AS24R264 AREA        2435.60    1152.67       0.00
LOCATION AS24R265 AREA        2634.21    1176.13       0.00
LOCATION AS24R266 AREA        2832.83    1199.60       0.00
LOCATION AS24R267 AREA        2858.22    1202.60       0.00
LOCATION AS24R302 AREA        2832.83    1199.60       0.00
LOCATION AS24R303 AREA        3031.45    1223.07       0.00
LOCATION AS24R304 AREA        3230.07    1246.53       0.00
LOCATION AS24R305 AREA        3237.00    1247.35       0.00
LOCATION AS24R340 AREA        3230.07    1246.53       0.00
LOCATION AS24R341 AREA        3428.69    1270.00       0.00
LOCATION AS24R342 AREA        3615.79    1292.10       0.00
LOCATION AS24R377 AREA        3428.69    1270.00       0.00
LOCATION AS24R378 AREA        3627.31    1293.46       0.00
LOCATION AS24R379 AREA        3825.93    1316.93       0.00
LOCATION AS24R380 AREA        3994.57    1336.86       0.00
LOCATION AS24R415 AREA        3825.93    1316.93       0.00
LOCATION AS24R416 AREA        4024.54    1340.40       0.00
LOCATION AS24R417 AREA        4223.16    1363.86       0.00
```

Table L.2-2
AERMOD Input File for 2003 Baseline Diesel PM Run

LOCATION	AS24R418	AREA	4373.36	1381.61	0.00
LOCATION	AS24R453	AREA	4223.16	1363.86	0.00
LOCATION	AS24R454	AREA	4421.78	1387.33	0.00
LOCATION	AS24R455	AREA	4620.40	1410.80	0.00
LOCATION	AS24R456	AREA	4752.14	1426.36	0.00
LOCATION	AS24R491	AREA	4620.40	1410.80	0.00
LOCATION	AS24R492	AREA	4819.02	1434.26	0.00
LOCATION	AS24R493	AREA	5017.64	1457.73	0.00
LOCATION	AS24R494	AREA	5130.93	1471.11	0.00
LOCATION	AS24R528	AREA	4819.02	1434.26	0.00
LOCATION	AS24R529	AREA	5017.64	1457.73	0.00
LOCATION	AS24R530	AREA	5216.26	1481.20	0.00
LOCATION	AS24R531	AREA	5414.87	1504.66	0.00
LOCATION	AS24R532	AREA	5600.62	1526.61	0.00
LOCATION	QU24L001	AREA	78.78	661.39	0.00
LOCATION	QU24L002	AREA	-84.62	614.19	0.00
LOCATION	QU24L003	AREA	-248.02	566.99	0.00
LOCATION	QU24L004	AREA	-411.42	519.79	0.00
LOCATION	QU24L005	AREA	-574.82	472.59	0.00
LOCATION	RW06R001	AREA	-3036.18	311.93	0.00
LOCATION	RW06R002	AREA	-2986.80	317.79	0.00
LOCATION	RW06R003	AREA	-2937.42	323.64	0.00
LOCATION	RW06R004	AREA	-2888.04	329.50	0.00
LOCATION	RW06R005	AREA	-2838.65	335.36	0.00
LOCATION	RW06R006	AREA	-2789.27	341.22	0.00
LOCATION	RW06R007	AREA	-2739.89	347.07	0.00
LOCATION	RW06R008	AREA	-2690.51	352.93	0.00
LOCATION	RW06R009	AREA	-2641.13	358.79	0.00
LOCATION	RW06R010	AREA	-2591.75	364.64	0.00
LOCATION	RW06R011	AREA	-2542.37	370.50	0.00
LOCATION	RW06R012	AREA	-2492.99	376.36	0.00
LOCATION	RW06R013	AREA	-2443.61	382.22	0.00
LOCATION	RW06R014	AREA	-2394.23	388.07	0.00
LOCATION	RW06R015	AREA	-2344.84	393.93	0.00
LOCATION	RW06R016	AREA	-2295.46	399.79	0.00
LOCATION	RW06R017	AREA	-2246.08	405.64	0.00
LOCATION	RW06R018	AREA	-2196.70	411.50	0.00
LOCATION	RW06R019	AREA	-2147.32	417.36	0.00
LOCATION	RW06R020	AREA	-2097.94	423.22	0.00
LOCATION	RW06R021	AREA	-2048.56	429.07	0.00
LOCATION	RW06R022	AREA	-1999.18	434.93	0.00
LOCATION	RW06R023	AREA	-1949.80	440.79	0.00
LOCATION	RW06R024	AREA	-1900.42	446.64	0.00
LOCATION	RW06R025	AREA	-1851.04	452.50	0.00
LOCATION	RW06R026	AREA	-1801.65	458.36	0.00
LOCATION	RW06R027	AREA	-1752.27	464.22	0.00
LOCATION	RW06R028	AREA	-1702.89	470.07	0.00
LOCATION	RW06R029	AREA	-1653.51	475.93	0.00
LOCATION	RW06R030	AREA	-1604.13	481.79	0.00
LOCATION	RW06R031	AREA	-1554.75	487.64	0.00
LOCATION	RW06R032	AREA	-1505.37	493.50	0.00
LOCATION	RW06R033	AREA	-1455.99	499.36	0.00
LOCATION	RW06R034	AREA	-1406.61	505.22	0.00
LOCATION	RW06R035	AREA	-1357.23	511.07	0.00
LOCATION	RW06R036	AREA	-1307.84	516.93	0.00
LOCATION	RW06R037	AREA	-1258.46	522.79	0.00
LOCATION	RW06R038	AREA	-1209.08	528.64	0.00
LOCATION	RW06R039	AREA	-1159.70	534.50	0.00
LOCATION	RW06R040	AREA	-1110.32	540.36	0.00
LOCATION	RW06R041	AREA	-1060.94	546.22	0.00
LOCATION	RW06R042	AREA	-1011.56	552.07	0.00
LOCATION	RW06R043	AREA	-962.18	557.93	0.00
LOCATION	RW06R044	AREA	-912.80	563.79	0.00
LOCATION	RW06R045	AREA	-863.42	569.64	0.00
LOCATION	RW06R046	AREA	-814.04	575.50	0.00
LOCATION	RW06R047	AREA	-764.65	581.36	0.00
LOCATION	RW06R048	AREA	-715.27	587.22	0.00
LOCATION	RW06R049	AREA	-665.89	593.07	0.00
LOCATION	RW06R050	AREA	-616.51	598.93	0.00
LOCATION	RW06R051	AREA	-567.13	604.79	0.00
LOCATION	RW06R052	AREA	-517.75	610.64	0.00

Table L.2-2
AERMOD Input File for 2003 Baseline Diesel PM Run

```
LOCATION RW06R053 AREA          -468.37      616.50        0.00
LOCATION RW06R054 AREA          -418.99      622.36        0.00
LOCATION RW06R055 AREA          -369.61      628.22        0.00
LOCATION RW06R056 AREA          -320.23      634.07        0.00
LOCATION RW06R057 AREA          -270.84      639.93        0.00
LOCATION RW06R058 AREA          -221.46      645.79        0.00
LOCATION RW06R059 AREA          -172.08      651.64        0.00
LOCATION RW06R060 AREA          -122.70      657.50        0.00
LOCATION RW06R061 AREA           -73.32      663.36        0.00
LOCATION RW06R062 AREA           -23.94      669.22        0.00
LOCATION RW06R063 AREA            25.44      675.07        0.00
LOCATION DS24L002 AREA          -289.34      617.60        0.00
LOCATION DS24L003 AREA          -320.04      613.96        0.00
LOCATION DS24L004 AREA          -557.30      585.81        0.00
LOCATION DS24L007 AREA         -1152.91      515.17        0.00
LOCATION DS24L008 AREA         -1313.08      496.17        0.00
LOCATION DS24L009 AREA         -1511.68      472.61        0.00
LOCATION DS24L010 AREA         -1710.29      449.06        0.00
LOCATION DS24L011 AREA         -1908.90      425.50        0.00
LOCATION DS24L012 AREA         -2107.51      401.94        0.00
LOCATION DS24L013 AREA         -2306.12      378.38        0.00
LOCATION DS24L014 AREA         -2541.02      350.52        0.00
LOCATION DS24L015 AREA         -2734.92      327.52        0.00
LOCATION DS24L016 AREA         -2901.94      307.71        0.00
LOCATION DS24L039 AREA          -335.38      612.13        0.00
LOCATION DS24L040 AREA          -518.65      590.40        0.00
LOCATION DS24L041 AREA          -717.25      566.84        0.00
LOCATION DS24L043 AREA         -1194.92      510.18        0.00
LOCATION DS24L044 AREA         -1340.11      492.96        0.00
LOCATION DS24L045 AREA         -1511.68      472.61        0.00
LOCATION DS24L046 AREA         -1710.29      449.06        0.00
LOCATION DS24L047 AREA         -1908.90      425.50        0.00
LOCATION DS24L048 AREA         -2107.51      401.94        0.00
LOCATION DS24L049 AREA         -2306.12      378.38        0.00
LOCATION DS24L050 AREA         -2504.72      354.83        0.00
LOCATION DS24L051 AREA         -2703.33      331.27        0.00
LOCATION DS24L052 AREA         -2901.94      307.71        0.00
LOCATION DS24L053 AREA         -3100.55      284.16        0.00
LOCATION DS24L075 AREA          -429.09      601.02        0.00
LOCATION DS24L076 AREA          -518.65      590.40        0.00
LOCATION DS24L077 AREA          -717.25      566.84        0.00
LOCATION DS24L079 AREA         -1299.96      497.73        0.00
LOCATION DS24L080 AREA         -1313.08      496.17        0.00
LOCATION DS24L081 AREA         -1545.65      468.58        0.00
LOCATION DS24L082 AREA         -1710.29      449.06        0.00
LOCATION DS24L083 AREA         -1908.90      425.50        0.00
LOCATION DS24L084 AREA         -2107.51      401.94        0.00
LOCATION DS24L085 AREA         -2306.12      378.38        0.00
LOCATION DS24L086 AREA         -2504.72      354.83        0.00
LOCATION DS24L087 AREA         -2778.90      322.31        0.00
LOCATION DS24L088 AREA         -2901.94      307.71        0.00
LOCATION DS24L089 AREA         -3100.55      284.16        0.00
LOCATION DS24L090 AREA         -3299.15      260.60        0.00
LOCATION DS24L112 AREA          -522.80      589.91        0.00
LOCATION DS24L113 AREA          -717.25      566.84        0.00
LOCATION DS24L114 AREA          -915.86      543.28        0.00
LOCATION DS24L116 AREA         -1405.00      485.27        0.00
LOCATION DS24L117 AREA         -1662.58      454.71        0.00
LOCATION DS24L118 AREA         -1710.29      449.06        0.00
LOCATION DS24L119 AREA         -1908.90      425.50        0.00
LOCATION DS24L120 AREA         -2107.51      401.94        0.00
LOCATION DS24L121 AREA         -2306.12      378.38        0.00
LOCATION DS24L122 AREA         -2638.47      338.96        0.00
LOCATION DS24L123 AREA         -2703.33      331.27        0.00
LOCATION DS24L124 AREA         -2936.77      303.58        0.00
LOCATION DS24L125 AREA         -3100.55      284.16        0.00
LOCATION DS24L126 AREA         -3299.15      260.60        0.00
LOCATION DS24L127 AREA         -3497.76      237.04        0.00
LOCATION DS24L148 AREA          -616.51      578.79        0.00
LOCATION DS24L149 AREA          -742.68      563.83        0.00
LOCATION DS24L150 AREA          -915.86      543.28        0.00
```

Table L.2-2
AERMOD Input File for 2003 Baseline Diesel PM Run

```
LOCATION DS24L151 AREA       -1114.47     519.73       0.00
LOCATION DS24L152 AREA       -1510.03     472.81       0.00
LOCATION DS24L153 AREA       -1511.68     472.61       0.00
LOCATION DS24L154 AREA       -1775.39     441.33       0.00
LOCATION DS24L155 AREA       -1908.90     425.50       0.00
LOCATION DS24L156 AREA       -2107.51     401.94       0.00
LOCATION DS24L157 AREA       -2306.12     378.38       0.00
LOCATION DS24L158 AREA       -2504.72     354.83       0.00
LOCATION DS24L159 AREA       -2856.15     313.14       0.00
LOCATION DS24L160 AREA       -2901.94     307.71       0.00
LOCATION DS24L161 AREA       -3100.55     284.16       0.00
LOCATION DS24L162 AREA       -3299.15     260.60       0.00
LOCATION DS24L163 AREA       -3497.76     237.04       0.00
LOCATION DS24L164 AREA       -3696.37     213.48       0.00
LOCATION DS24L184 AREA        -710.22     567.68       0.00
LOCATION DS24L185 AREA        -717.25     566.84       0.00
LOCATION DS24L186 AREA        -915.86     543.28       0.00
LOCATION DS24L187 AREA       -1133.80     517.43       0.00
LOCATION DS24L188 AREA       -1313.08     496.17       0.00
LOCATION DS24L189 AREA       -1615.07     460.35       0.00
LOCATION DS24L190 AREA       -1710.29     449.06       0.00
LOCATION DS24L191 AREA       -1908.90     425.50       0.00
LOCATION DS24L192 AREA       -2134.14     398.78       0.00
LOCATION DS24L193 AREA       -2322.40     376.45       0.00
LOCATION DS24L194 AREA       -2504.72     354.83       0.00
LOCATION DS24L195 AREA       -2703.33     331.27       0.00
LOCATION DS24L196 AREA       -3024.58     293.17       0.00
LOCATION DS24L197 AREA       -3100.55     284.16       0.00
LOCATION DS24L198 AREA       -3299.15     260.60       0.00
LOCATION DS24L199 AREA       -3497.76     237.04       0.00
LOCATION DS24L200 AREA       -3696.37     213.48       0.00
LOCATION DS24L201 AREA       -3894.98     189.93       0.00
LOCATION DS24L221 AREA        -803.93     556.56       0.00
LOCATION DS24L222 AREA        -954.10     538.75       0.00
LOCATION DS24L223 AREA       -1114.47     519.73       0.00
LOCATION DS24L224 AREA       -1313.08     496.17       0.00
LOCATION DS24L226 AREA       -1721.32     447.75       0.00
LOCATION DS24L227 AREA       -1967.54     418.54       0.00
LOCATION DS24L228 AREA       -2107.51     401.94       0.00
LOCATION DS24L229 AREA       -2306.12     378.38       0.00
LOCATION DS24L230 AREA       -2504.72     354.83       0.00
LOCATION DS24L231 AREA       -2703.33     331.27       0.00
LOCATION DS24L232 AREA       -2901.94     307.71       0.00
LOCATION DS24L233 AREA       -3193.01     273.19       0.00
LOCATION DS24L234 AREA       -3299.15     260.60       0.00
LOCATION DS24L235 AREA       -3497.76     237.04       0.00
LOCATION DS24L236 AREA       -3696.37     213.48       0.00
LOCATION DS24L237 AREA       -3894.98     189.93       0.00
LOCATION DS24L238 AREA       -4093.59     166.37       0.00
LOCATION DS24L257 AREA        -897.64     545.45       0.00
LOCATION DS24L258 AREA        -915.86     543.28       0.00
LOCATION DS24L259 AREA       -1114.47     519.73       0.00
LOCATION DS24L260 AREA       -1363.44     490.20       0.00
LOCATION DS24L261 AREA       -1511.68     472.61       0.00
LOCATION DS24L262 AREA       -1827.83     435.11       0.00
LOCATION DS24L263 AREA       -1908.90     425.50       0.00
LOCATION DS24L264 AREA       -2107.51     401.94       0.00
LOCATION DS24L265 AREA       -2306.12     378.38       0.00
LOCATION DS24L266 AREA       -2576.96     346.26       0.00
LOCATION DS24L267 AREA       -2703.33     331.27       0.00
LOCATION DS24L268 AREA       -2901.94     307.71       0.00
LOCATION DS24L269 AREA       -3100.55     284.16       0.00
LOCATION DS24L270 AREA       -3361.44     253.21       0.00
LOCATION DS24L271 AREA       -3497.76     237.04       0.00
LOCATION DS24L272 AREA       -3696.37     213.48       0.00
LOCATION DS24L273 AREA       -3894.98     189.93       0.00
LOCATION DS24L274 AREA       -4093.59     166.37       0.00
LOCATION DS24L294 AREA        -991.35     534.33       0.00
LOCATION DS24L295 AREA       -1134.90     517.30       0.00
LOCATION DS24L296 AREA       -1313.08     496.17       0.00
LOCATION DS24L297 AREA       -1511.68     472.61       0.00
```

Table L.2-2
AERMOD Input File for 2003 Baseline Diesel PM Run

```
LOCATION DS24L298 AREA      -1710.29     449.06       0.00
LOCATION DS24L299 AREA      -1934.33     422.48       0.00
LOCATION DS24L300 AREA      -2159.68     395.75       0.00
LOCATION DS24L301 AREA      -2306.12     378.38       0.00
LOCATION DS24L302 AREA      -2504.72     354.83       0.00
LOCATION DS24L303 AREA      -2703.33     331.27       0.00
LOCATION DS24L304 AREA      -2901.94     307.71       0.00
LOCATION DS24L305 AREA      -3100.55     284.16       0.00
LOCATION DS24L306 AREA      -3299.15     260.60       0.00
LOCATION DS24L307 AREA      -3529.86     233.23       0.00
LOCATION DS24L308 AREA      -3696.37     213.48       0.00
LOCATION DS24L309 AREA      -3894.98     189.93       0.00
LOCATION DS24L310 AREA      -4093.59     166.37       0.00
LOCATION DS24L311 AREA      -4292.19     142.81       0.00
LOCATION DS24L330 AREA      -1085.06     523.22       0.00
LOCATION DS24L331 AREA      -1114.47     519.73       0.00
LOCATION DS24L332 AREA      -1313.08     496.17       0.00
LOCATION DS24L333 AREA      -1511.68     472.61       0.00
LOCATION DS24L334 AREA      -1723.07     447.54       0.00
LOCATION DS24L335 AREA      -2040.84     409.85       0.00
LOCATION DS24L336 AREA      -2107.51     401.94       0.00
LOCATION DS24L337 AREA      -2306.12     378.38       0.00
LOCATION DS24L338 AREA      -2504.72     354.83       0.00
LOCATION DS24L339 AREA      -2820.00     317.43       0.00
LOCATION DS24L340 AREA      -2901.94     307.71       0.00
LOCATION DS24L341 AREA      -3100.55     284.16       0.00
LOCATION DS24L342 AREA      -3299.15     260.60       0.00
LOCATION DS24L343 AREA      -3497.76     237.04       0.00
LOCATION DS24L344 AREA      -3698.29     213.26       0.00
LOCATION DS24L345 AREA      -3894.98     189.93       0.00
LOCATION DS24L346 AREA      -4108.30     164.62       0.00
LOCATION DS24L347 AREA      -4292.19     142.81       0.00
LOCATION DS24L348 AREA      -4490.80     119.26       0.00
LOCATION DS24L367 AREA      -1178.77     512.10       0.00
LOCATION DS24L368 AREA      -1315.69     495.86       0.00
LOCATION DS24L369 AREA      -1542.69     468.94       0.00
LOCATION DS24L370 AREA      -1710.29     449.06       0.00
LOCATION DS24L371 AREA      -1908.90     425.50       0.00
LOCATION DS24L372 AREA      -2147.34     397.22       0.00
LOCATION DS24L373 AREA      -2351.83     372.96       0.00
LOCATION DS24L374 AREA      -2504.72     354.83       0.00
LOCATION DS24L375 AREA      -2703.33     331.27       0.00
LOCATION DS24L376 AREA      -2932.36     304.10       0.00
LOCATION DS24L377 AREA      -3100.55     284.16       0.00
LOCATION DS24L378 AREA      -3457.63     241.80       0.00
LOCATION DS24L379 AREA      -3497.76     237.04       0.00
LOCATION DS24L380 AREA      -3696.37     213.48       0.00
LOCATION DS24L381 AREA      -3894.98     189.93       0.00
LOCATION DS24L382 AREA      -4093.59     166.37       0.00
LOCATION DS24L383 AREA      -4292.19     142.81       0.00
LOCATION DS24L384 AREA      -4490.80     119.26       0.00
LOCATION DS24L385 AREA      -4689.41      95.70       0.00
LOCATION DS24L403 AREA      -1272.48     500.99       0.00
LOCATION DS24L404 AREA      -1313.08     496.17       0.00
LOCATION DS24L405 AREA      -1511.68     472.61       0.00
LOCATION DS24L406 AREA      -1710.29     449.06       0.00
LOCATION DS24L407 AREA      -1908.90     425.50       0.00
LOCATION DS24L408 AREA      -2107.51     401.94       0.00
LOCATION DS24L409 AREA      -2306.12     378.38       0.00
LOCATION DS24L410 AREA      -2504.72     354.83       0.00
LOCATION DS24L411 AREA      -2703.33     331.27       0.00
LOCATION DS24L412 AREA      -2901.94     307.71       0.00
LOCATION DS24L413 AREA      -3100.55     284.16       0.00
LOCATION DS24L414 AREA      -3299.15     260.60       0.00
LOCATION DS24L415 AREA      -3617.96     222.78       0.00
LOCATION DS24L416 AREA      -3696.37     213.48       0.00
LOCATION DS24L417 AREA      -3894.98     189.93       0.00
LOCATION DS24L418 AREA      -4093.59     166.37       0.00
LOCATION DS24L419 AREA      -4292.19     142.81       0.00
LOCATION DS24L420 AREA      -4490.80     119.26       0.00
LOCATION DS24L421 AREA      -4689.41      95.70       0.00
```

Table L.2-2
AERMOD Input File for 2003 Baseline Diesel PM Run

```
LOCATION DS24L422 AREA       -4888.02      72.14         0.00
LOCATION DS24L440 AREA       -1366.19     489.87         0.00
LOCATION DS24L441 AREA       -1511.68     472.61         0.00
LOCATION DS24L442 AREA       -1809.36     437.30         0.00
LOCATION DS24L443 AREA       -1908.90     425.50         0.00
LOCATION DS24L444 AREA       -2119.36     400.53         0.00
LOCATION DS24L445 AREA       -2360.35     371.95         0.00
LOCATION DS24L446 AREA       -2543.97     350.17         0.00
LOCATION DS24L447 AREA       -2703.33     331.27         0.00
LOCATION DS24L448 AREA       -2901.94     307.71         0.00
LOCATION DS24L449 AREA       -3157.09     277.45         0.00
LOCATION DS24L450 AREA       -3299.15     260.60         0.00
LOCATION DS24L451 AREA       -3497.76     237.04         0.00
LOCATION DS24L452 AREA       -3778.29     203.77         0.00
LOCATION DS24L453 AREA       -3894.98     189.93         0.00
LOCATION DS24L454 AREA       -4105.14     165.00         0.00
LOCATION DS24L455 AREA       -4292.19     142.81         0.00
LOCATION DS24L456 AREA       -4490.80     119.26         0.00
LOCATION DS24L457 AREA       -4689.41      95.70         0.00
LOCATION DS24L458 AREA       -4888.02      72.14         0.00
LOCATION DS24L459 AREA       -5086.63      48.58         0.00
LOCATION DS24L476 AREA       -1459.89     478.76         0.00
LOCATION DS24L477 AREA       -1511.68     472.61         0.00
LOCATION DS24L478 AREA       -1710.29     449.06         0.00
LOCATION DS24L479 AREA       -1942.69     421.49         0.00
LOCATION DS24L480 AREA       -2107.51     401.94         0.00
LOCATION DS24L481 AREA       -2306.12     378.38         0.00
LOCATION DS24L482 AREA       -2504.72     354.83         0.00
LOCATION DS24L483 AREA       -2703.33     331.27         0.00
LOCATION DS24L484 AREA       -2901.94     307.71         0.00
LOCATION DS24L485 AREA       -3100.55     284.16         0.00
LOCATION DS24L486 AREA       -3299.15     260.60         0.00
LOCATION DS24L487 AREA       -3497.76     237.04         0.00
LOCATION DS24L488 AREA       -3696.37     213.48         0.00
LOCATION DS24L489 AREA       -3938.62     184.75         0.00
LOCATION DS24L490 AREA       -4093.59     166.37         0.00
LOCATION DS24L491 AREA       -4309.67     140.74         0.00
LOCATION DS24L492 AREA       -4490.80     119.26         0.00
LOCATION DS24L493 AREA       -4689.41      95.70         0.00
LOCATION DS24L494 AREA       -4888.02      72.14         0.00
LOCATION DS24L495 AREA       -5086.63      48.58         0.00
LOCATION DS24L496 AREA       -5285.23      25.03         0.00
LOCATION DS24L513 AREA       -1553.60     467.64         0.00
LOCATION DS24L514 AREA       -1710.29     449.06         0.00
LOCATION DS24L515 AREA       -2076.03     405.67         0.00
LOCATION DS24L516 AREA       -2107.51     401.94         0.00
LOCATION DS24L517 AREA       -2306.12     378.38         0.00
LOCATION DS24L518 AREA       -2504.72     354.83         0.00
LOCATION DS24L519 AREA       -2703.33     331.27         0.00
LOCATION DS24L520 AREA       -2901.94     307.71         0.00
LOCATION DS24L521 AREA       -3100.55     284.16         0.00
LOCATION DS24L522 AREA       -3381.81     250.79         0.00
LOCATION DS24L523 AREA       -3497.76     237.04         0.00
LOCATION DS24L524 AREA       -3696.37     213.48         0.00
LOCATION DS24L526 AREA       -4098.95     165.73         0.00
LOCATION DS24L527 AREA       -4292.19     142.81         0.00
LOCATION DS24L528 AREA       -4490.80     119.26         0.00
LOCATION DS24L529 AREA       -4689.41      95.70         0.00
LOCATION DS24L530 AREA       -4888.02      72.14         0.00
LOCATION DS24L531 AREA       -5086.63      48.58         0.00
LOCATION DS24L532 AREA       -5285.23      25.03         0.00
LOCATION DS24L533 AREA       -5483.84       1.47         0.00
LOCATION AS24L001 AREA         228.77     679.05         0.00
LOCATION AS24L037 AREA         275.79     684.63         0.00
LOCATION AS24L038 AREA         474.39     708.18         0.00
LOCATION AS24L039 AREA         610.12     724.28         0.00
LOCATION AS24L075 AREA         673.00     731.74         0.00
LOCATION AS24L076 AREA         871.61     755.30         0.00
LOCATION AS24L077 AREA         989.25     769.25         0.00
LOCATION AS24L113 AREA        1070.22     778.86         0.00
LOCATION AS24L114 AREA        1268.82     802.41         0.00
```

Table L.2-2
AERMOD Input File for 2003 Baseline Diesel PM Run

```
   LOCATION AS24L115 AREA        1368.02     814.18       0.00
   LOCATION AS24L151 AREA        1467.43     825.97       0.00
   LOCATION AS24L152 AREA        1666.04     849.53       0.00
   LOCATION AS24L153 AREA        1746.78     859.10       0.00
   LOCATION AS24L188 AREA        1666.04     849.53       0.00
   LOCATION AS24L189 AREA        1864.65     873.08       0.00
   LOCATION AS24L190 AREA        2063.26     896.64       0.00
   LOCATION AS24L191 AREA        2125.54     904.03       0.00
   LOCATION AS24L226 AREA        2063.26     896.64       0.00
   LOCATION AS24L227 AREA        2261.86     920.20       0.00
   LOCATION AS24L228 AREA        2460.47     943.76       0.00
   LOCATION AS24L229 AREA        2504.31     948.95       0.00
   LOCATION AS24L264 AREA        2460.47     943.76       0.00
   LOCATION AS24L265 AREA        2659.08     967.31       0.00
   LOCATION AS24L266 AREA        2857.69     990.87       0.00
   LOCATION AS24L267 AREA        2883.07     993.88       0.00
   LOCATION AS24L302 AREA        2857.69     990.87       0.00
   LOCATION AS24L303 AREA        3056.29    1014.43       0.00
   LOCATION AS24L304 AREA        3254.90    1037.98       0.00
   LOCATION AS24L305 AREA        3261.84    1038.81       0.00
   LOCATION AS24L340 AREA        3254.90    1037.98       0.00
   LOCATION AS24L341 AREA        3453.51    1061.54       0.00
   LOCATION AS24L342 AREA        3640.60    1083.73       0.00
   LOCATION AS24L377 AREA        3453.51    1061.54       0.00
   LOCATION AS24L378 AREA        3652.12    1085.10       0.00
   LOCATION AS24L379 AREA        3850.73    1108.66       0.00
   LOCATION AS24L380 AREA        4019.36    1128.66       0.00
   LOCATION AS24L415 AREA        3850.73    1108.66       0.00
   LOCATION AS24L416 AREA        4049.33    1132.21       0.00
   LOCATION AS24L417 AREA        4247.94    1155.77       0.00
   LOCATION AS24L418 AREA        4398.13    1173.58       0.00
   LOCATION AS24L453 AREA        4247.94    1155.77       0.00
   LOCATION AS24L454 AREA        4446.55    1179.33       0.00
   LOCATION AS24L455 AREA        4645.16    1202.88       0.00
   LOCATION AS24L456 AREA        4776.89    1218.51       0.00
   LOCATION AS24L491 AREA        4645.16    1202.88       0.00
   LOCATION AS24L492 AREA        4843.77    1226.44       0.00
   LOCATION AS24L493 AREA        5042.37    1250.00       0.00
   LOCATION AS24L494 AREA        5155.66    1263.43       0.00
   LOCATION AS24L528 AREA        4843.77    1226.44       0.00
   LOCATION AS24L529 AREA        5042.37    1250.00       0.00
   LOCATION AS24L530 AREA        5240.98    1273.56       0.00
   LOCATION AS24L531 AREA        5439.59    1297.11       0.00
   LOCATION AS24L532 AREA        5625.32    1319.14       0.00
** -----------------------------------------------------------
**  VOLUME SOURCE PARAMETERS:     HEIGHT   SIGMA-Y0   SIGMA-Z0
** -----------------------------------------------------------
   SRCPARAM GATE_001 1.0            1.50      16.00      3.00
   SRCPARAM GATE_002 1.0            1.50      16.00      3.00
   SRCPARAM GATE_003 1.0            1.50      16.00      3.00
   SRCPARAM GATE_004 1.0            1.50      16.00      3.00
   SRCPARAM GATE_005 1.0            1.50      16.00      3.00
   SRCPARAM GATE_006 1.0            1.50      16.00      3.00
   SRCPARAM GATE_007 1.0            1.50      16.00      3.00
   SRCPARAM GATE_008 1.0            1.50      16.00      3.00
   SRCPARAM GATE_009 1.0            1.50      16.00      3.00
   SRCPARAM GATE_010 1.0            1.50      16.00      3.00
   SRCPARAM GATE_011 1.0            1.50      16.00      3.00
   SRCPARAM GATE_012 1.0            1.50      16.00      3.00
   SRCPARAM GATE_013 1.0            1.50      16.00      3.00
   SRCPARAM GATE_014 1.0            1.50      16.00      3.00
   SRCPARAM GATE_015 1.0            1.50      16.00      3.00
   SRCPARAM GATE_016 1.0            1.50      16.00      3.00
** ----------------------------------------------------------------------
**  POINT SOURCE PARAMETERS:      HEIGHT     -----*     -----*   DIAMETER
**  *These two columns are overridden in the hourly emission (.hre) file.
** ----------------------------------------------------------------------
   SRCPARAM STAT_001 1.0           10.00     273.15       1.00       1.70
   SRCPARAM STAT_002 1.0           15.00     273.15       1.00       0.50
   SRCPARAM STAT_003 1.0           15.00     273.15       1.00       0.50
   SRCPARAM STAT_004 1.0           15.00     273.15       1.00       0.50
```

Table L.2-2
AERMOD Input File for 2003 Baseline Diesel PM Run

```
    SRCPARAM STAT_005 1.0           15.00     273.15       1.00       0.50
    SRCPARAM STAT_006 1.0           10.00     273.15       1.00       0.60
    SRCPARAM STAT_007 1.0           15.00     273.15       1.00      10.00
    SRCPARAM STAT_008 1.0            4.00     273.15       1.00       7.00
    SRCPARAM STAT_009 1.0            4.00     273.15       1.00       7.00
    SRCPARAM STAT_010 1.0            4.00     273.15       1.00       7.00
    SRCPARAM STAT_011 1.0            4.00     273.15       1.00       7.00
    SRCPARAM STAT_012 1.0           20.00     273.15       1.00       0.60
    SRCPARAM STAT_013 1.0           20.00     273.15       1.00       0.60
    SRCPARAM STAT_014 1.0           20.00     273.15       1.00       0.60
    SRCPARAM STAT_015 1.0           20.00     273.15       1.00       0.60
    SRCPARAM STAT_016 1.0           15.00     273.15       1.00       0.60
    SRCPARAM STAT_017 1.0            4.00     273.15       1.00       7.00
** --------------------------------------------------------------------------------
**  AREA SOURCE PARAMETERS:       HEIGHT      WIDTH     LENGTH      ANGLE   SIGMA-Z0
** --------------------------------------------------------------------------------
    SRCPARAM RD001001 1.0            0.00      20.00     183.37      84.99       3.00
    SRCPARAM RD001002 1.0            0.00      20.00     183.37      84.99       3.00
    SRCPARAM RD001003 1.0            0.00      20.00     183.37      84.99       3.00
    SRCPARAM RD001004 1.0            0.00      20.00     183.37      84.99       3.00
    SRCPARAM RD001005 1.0            0.00      20.00     183.37      84.99       3.00
    SRCPARAM RD001006 1.0            0.00      20.00     183.37      84.99       3.00
    SRCPARAM RD002001 1.0            0.00      20.00     189.42      76.26       3.00
    SRCPARAM RD003001 1.0            0.00      20.00     124.90     173.10       3.00
    SRCPARAM RD003002 1.0            0.00      20.00     124.90     173.10       3.00
    SRCPARAM RD004001 1.0            0.00      20.00     143.46     -13.83       3.00
    SRCPARAM RD005001 1.0            0.00      20.00     104.70     -87.48       3.00
    SRCPARAM RD005002 1.0            0.00      20.00     104.70     -87.48       3.00
    SRCPARAM RD006001 1.0            0.00      20.00     135.36    -172.19       3.00
    SRCPARAM RD007001 1.0            0.00      20.00     156.01     -16.15       3.00
    SRCPARAM RD007002 1.0            0.00      20.00     156.01     -16.15       3.00
    SRCPARAM RD008001 1.0            0.00      20.00     116.50      -0.25       3.00
    SRCPARAM RD008002 1.0            0.00      20.00     116.50      -0.25       3.00
    SRCPARAM RD009001 1.0            0.00      20.00     167.82     175.08       3.00
    SRCPARAM RD010001 1.0            0.00      20.00     173.42     176.81       3.00
    SRCPARAM RD010002 1.0            0.00      20.00     173.42     176.81       3.00
    SRCPARAM RD011001 1.0            0.00      20.00     145.80      90.00       3.00
    SRCPARAM RD012001 1.0            0.00      20.00     161.20       0.00       3.00
    SRCPARAM RD013001 1.0            0.00      20.00     153.34      89.70       3.00
    SRCPARAM RD013002 1.0            0.00      20.00     153.34      89.70       3.00
    SRCPARAM RD013003 1.0            0.00      20.00     153.34      89.70       3.00
    SRCPARAM RD014001 1.0            0.00      20.00     123.90     180.00       3.00
    SRCPARAM RD015001 1.0            0.00      20.00     136.50      89.83       3.00
    SRCPARAM RD015002 1.0            0.00      20.00     136.50      89.83       3.00
    SRCPARAM RD015003 1.0            0.00      20.00     136.50      89.83       3.00
    SRCPARAM RD016001 1.0            0.00      20.00     121.46     179.43       3.00
    SRCPARAM RD016002 1.0            0.00      20.00     121.46     179.43       3.00
    SRCPARAM RD017001 1.0            0.00      20.00     142.11       5.18       3.00
    SRCPARAM RD017002 1.0            0.00      20.00     142.11       5.18       3.00
    SRCPARAM RD017003 1.0            0.00      20.00     142.11       5.18       3.00
    SRCPARAM RD018001 1.0            0.00      20.00     118.07      83.87       3.00
    SRCPARAM RD018002 1.0            0.00      20.00     118.07      83.87       3.00
    SRCPARAM RD019001 1.0            0.00      20.00     100.45     165.38       3.00
    SRCPARAM RD019002 1.0            0.00      20.00     100.45     165.38       3.00
    SRCPARAM RD020001 1.0            0.00      20.00     161.34    -179.53       3.00
    SRCPARAM RD020002 1.0            0.00      20.00     161.34    -179.53       3.00
    SRCPARAM RD020003 1.0            0.00      20.00     161.34    -179.53       3.00
    SRCPARAM RD021001 1.0            0.00      20.00     155.81     -81.27       3.00
    SRCPARAM RD021002 1.0            0.00      20.00     155.81     -81.27       3.00
    SRCPARAM RD022001 1.0            0.00      20.00     169.60     178.38       3.00
    SRCPARAM RD022002 1.0            0.00      20.00     169.60     178.38       3.00
    SRCPARAM RD022003 1.0            0.00      20.00     169.60     178.38       3.00
    SRCPARAM RD023001 1.0            0.00      20.00     140.30     -89.82       3.00
    SRCPARAM RD023002 1.0            0.00      20.00     140.30     -89.82       3.00
    SRCPARAM RD023003 1.0            0.00      20.00     140.30     -89.82       3.00
    SRCPARAM RD024001 1.0            0.00      20.00     139.30       0.18       3.00
    SRCPARAM RD024002 1.0            0.00      20.00     139.30       0.18       3.00
    SRCPARAM RD024003 1.0            0.00      20.00     139.30       0.18       3.00
    SRCPARAM RD025001 1.0            0.00      20.00     196.13      83.20       3.00
    SRCPARAM RD025002 1.0            0.00      20.00     196.13      83.20       3.00
    SRCPARAM RD025003 1.0            0.00      20.00     196.13      83.20       3.00
```

Table L.2-2
AERMOD Input File for 2003 Baseline Diesel PM Run

```
SRCPARAM RD025004 1.0            0.00      20.00     196.13     83.20        3.00
SRCPARAM RD025005 1.0            0.00      20.00     196.13     83.20        3.00
SRCPARAM RD025006 1.0            0.00      20.00     196.13     83.20        3.00
SRCPARAM RD025007 1.0            0.00      20.00     196.13     83.20        3.00
SRCPARAM RD025008 1.0            0.00      20.00     196.13     83.20        3.00
SRCPARAM RD025009 1.0            0.00      20.00     196.13     83.20        3.00
SRCPARAM RD025010 1.0            0.00      20.00     196.13     83.20        3.00
SRCPARAM RD026001 1.0            0.00      20.00     174.53    -91.12        3.00
SRCPARAM RD026002 1.0            0.00      20.00     174.53    -91.12        3.00
SRCPARAM RD026003 1.0            0.00      20.00     174.53    -91.12        3.00
SRCPARAM RD026004 1.0            0.00      20.00     174.53    -91.12        3.00
SRCPARAM RD026005 1.0            0.00      20.00     174.53    -91.12        3.00
SRCPARAM RD027001 1.0            0.00      20.00     165.67    -95.01        3.00
SRCPARAM RD027002 1.0            0.00      20.00     165.67    -95.01        3.00
SRCPARAM RD027003 1.0            0.00      20.00     165.67    -95.01        3.00
SRCPARAM RD027004 1.0            0.00      20.00     165.67    -95.01        3.00
SRCPARAM RD027005 1.0            0.00      20.00     165.67    -95.01        3.00
SRCPARAM RD028001 1.0            0.00      20.00     174.76    -80.45        3.00
SRCPARAM RD028002 1.0            0.00      20.00     174.76    -80.45        3.00
SRCPARAM RD028003 1.0            0.00      20.00     174.76    -80.45        3.00
SRCPARAM RD029001 1.0            0.00      20.00     192.07    -97.33        3.00
SRCPARAM RD029002 1.0            0.00      20.00     192.07    -97.33        3.00
SRCPARAM RD030001 1.0            0.00      20.00     108.19    -98.50        3.00
SRCPARAM RD030002 1.0            0.00      20.00     108.19    -98.50        3.00
SRCPARAM RD031001 1.0            0.00      20.00     107.02     84.37        3.00
SRCPARAM RD031002 1.0            0.00      20.00     107.02     84.37        3.00
SRCPARAM RD032001 1.0            0.00      20.00     178.24     83.23        3.00
SRCPARAM RD033001 1.0            0.00      20.00     103.64     83.63        3.00
SRCPARAM RD033002 1.0            0.00      20.00     103.64     83.63        3.00
SRCPARAM RD034001 1.0            0.00      20.00     153.62     83.08        3.00
SRCPARAM RD034002 1.0            0.00      20.00     153.62     83.08        3.00
SRCPARAM RD035001 1.0            0.00      20.00     110.11     55.73        3.00
SRCPARAM RD035002 1.0            0.00      20.00     110.11     55.73        3.00
SRCPARAM RD036001 1.0            0.00      20.00     116.90    172.87        3.00
SRCPARAM RD036002 1.0            0.00      20.00     116.90    172.87        3.00
SRCPARAM RD037001 1.0            0.00      20.00     122.30    173.43        3.00
SRCPARAM RD037002 1.0            0.00      20.00     122.30    173.43        3.00
SRCPARAM TW001001 1.0           12.00      20.00     176.69    173.34        4.10
SRCPARAM TW001002 1.0           12.00      20.00     176.69    173.34        4.10
SRCPARAM TW001003 1.0           12.00      20.00     176.69    173.34        4.10
SRCPARAM TW001004 1.0           12.00      20.00     176.69    173.34        4.10
SRCPARAM TW001005 1.0           12.00      20.00     176.69    173.34        4.10
SRCPARAM TW001006 1.0           12.00      20.00     176.69    173.34        4.10
SRCPARAM TW002001 1.0           12.00      20.00     190.60    172.97        4.10
SRCPARAM TW002002 1.0           12.00      20.00     190.60    172.97        4.10
SRCPARAM TW002003 1.0           12.00      20.00     190.60    172.97        4.10
SRCPARAM TW002004 1.0           12.00      20.00     190.60    172.97        4.10
SRCPARAM TW002005 1.0           12.00      20.00     190.60    172.97        4.10
SRCPARAM TW002006 1.0           12.00      20.00     190.60    172.97        4.10
SRCPARAM TW003001 1.0           12.00      20.00     188.72    173.05        4.10
SRCPARAM TW003002 1.0           12.00      20.00     188.72    173.05        4.10
SRCPARAM TW003003 1.0           12.00      20.00     188.72    173.05        4.10
SRCPARAM TW003004 1.0           12.00      20.00     188.72    173.05        4.10
SRCPARAM TW003005 1.0           12.00      20.00     188.72    173.05        4.10
SRCPARAM TW003006 1.0           12.00      20.00     188.72    173.05        4.10
SRCPARAM TW004001 1.0           12.00      20.00     170.99     82.44        4.10
SRCPARAM TW004002 1.0           12.00      20.00     170.99     82.44        4.10
SRCPARAM TW004003 1.0           12.00      20.00     170.99     82.44        4.10
SRCPARAM TW004004 1.0           12.00      20.00     170.99     82.44        4.10
SRCPARAM TW004005 1.0           12.00      20.00     170.99     82.44        4.10
SRCPARAM TW004006 1.0           12.00      20.00     170.99     82.44        4.10
SRCPARAM TW005001 1.0           12.00      20.00     198.83     83.36        4.10
SRCPARAM TW005002 1.0           12.00      20.00     198.83     83.36        4.10
SRCPARAM TW005003 1.0           12.00      20.00     198.83     83.36        4.10
SRCPARAM TW005004 1.0           12.00      20.00     198.83     83.36        4.10
SRCPARAM TW005005 1.0           12.00      20.00     198.83     83.36        4.10
SRCPARAM TW005006 1.0           12.00      20.00     198.83     83.36        4.10
SRCPARAM TW005007 1.0           12.00      20.00     198.83     83.36        4.10
SRCPARAM TW005008 1.0           12.00      20.00     198.83     83.36        4.10
SRCPARAM TW005009 1.0           12.00      20.00     198.83     83.36        4.10
SRCPARAM TW005010 1.0           12.00      20.00     198.83     83.36        4.10
```

Table L.2-2
AERMOD Input File for 2003 Baseline Diesel PM Run

```
SRCPARAM TW005011 1.0           12.00      20.00     198.83      83.36       4.10
SRCPARAM TW005012 1.0           12.00      20.00     198.83      83.36       4.10
SRCPARAM TW005013 1.0           12.00      20.00     198.83      83.36       4.10
SRCPARAM TW005014 1.0           12.00      20.00     198.83      83.36       4.10
SRCPARAM TW006001 1.0           12.00      20.00     181.03      83.18       4.10
SRCPARAM TW006002 1.0           12.00      20.00     181.03      83.18       4.10
SRCPARAM TW006003 1.0           12.00      20.00     181.03      83.18       4.10
SRCPARAM TW006004 1.0           12.00      20.00     181.03      83.18       4.10
SRCPARAM TW006005 1.0           12.00      20.00     181.03      83.18       4.10
SRCPARAM TW006006 1.0           12.00      20.00     181.03      83.18       4.10
SRCPARAM TW006007 1.0           12.00      20.00     181.03      83.18       4.10
SRCPARAM TW006008 1.0           12.00      20.00     181.03      83.18       4.10
SRCPARAM TW007001 1.0           12.00      20.00     194.77      84.89       4.10
SRCPARAM TW007002 1.0           12.00      20.00     194.77      84.89       4.10
SRCPARAM TW007003 1.0           12.00      20.00     194.77      84.89       4.10
SRCPARAM TW008001 1.0           12.00      20.00     192.05      82.71       4.10
SRCPARAM TW008002 1.0           12.00      20.00     192.05      82.71       4.10
SRCPARAM TW008003 1.0           12.00      20.00     192.05      82.71       4.10
SRCPARAM TW008004 1.0           12.00      20.00     192.05      82.71       4.10
SRCPARAM TW008005 1.0           12.00      20.00     192.05      82.71       4.10
SRCPARAM TW008006 1.0           12.00      20.00     192.05      82.71       4.10
SRCPARAM TW008007 1.0           12.00      20.00     192.05      82.71       4.10
SRCPARAM TW008008 1.0           12.00      20.00     192.05      82.71       4.10
SRCPARAM TW009001 1.0           12.00      20.00     180.08      83.17       4.10
SRCPARAM TW009002 1.0           12.00      20.00     180.08      83.17       4.10
SRCPARAM TW009003 1.0           12.00      20.00     180.08      83.17       4.10
SRCPARAM TW009004 1.0           12.00      20.00     180.08      83.17       4.10
SRCPARAM TW009005 1.0           12.00      20.00     180.08      83.17       4.10
SRCPARAM TW010001 1.0           12.00      20.00     179.53      83.16       4.10
SRCPARAM TW010002 1.0           12.00      20.00     179.53      83.16       4.10
SRCPARAM TW010003 1.0           12.00      20.00     179.53      83.16       4.10
SRCPARAM TW010004 1.0           12.00      20.00     179.53      83.16       4.10
SRCPARAM TW010005 1.0           12.00      20.00     179.53      83.16       4.10
SRCPARAM TW010006 1.0           12.00      20.00     179.53      83.16       4.10
SRCPARAM TW010007 1.0           12.00      20.00     179.53      83.16       4.10
SRCPARAM TW010008 1.0           12.00      20.00     179.53      83.16       4.10
SRCPARAM TW011001 1.0           12.00      20.00     192.50      83.57       4.10
SRCPARAM TW011002 1.0           12.00      20.00     192.50      83.57       4.10
SRCPARAM TW011003 1.0           12.00      20.00     192.50      83.57       4.10
SRCPARAM TW011004 1.0           12.00      20.00     192.50      83.57       4.10
SRCPARAM TW011005 1.0           12.00      20.00     192.50      83.57       4.10
SRCPARAM TW011006 1.0           12.00      20.00     192.50      83.57       4.10
SRCPARAM TW011007 1.0           12.00      20.00     192.50      83.57       4.10
SRCPARAM QU25R001 1.0           12.00      20.00     175.09     -88.12       4.10
SRCPARAM QU25R002 1.0           12.00      20.00     175.09     -88.12       4.10
SRCPARAM QU25R003 1.0           12.00      20.00     175.09     -88.12       4.10
SRCPARAM QU25R004 1.0           12.00      20.00     175.09     -88.12       4.10
SRCPARAM RW07L001 1.0           12.00      20.00      49.79      83.17       4.10
SRCPARAM RW07L002 1.0           12.00      20.00      49.79      83.17       4.10
SRCPARAM RW07L003 1.0           12.00      20.00      49.79      83.17       4.10
SRCPARAM RW07L004 1.0           12.00      20.00      49.79      83.17       4.10
SRCPARAM RW07L005 1.0           12.00      20.00      49.79      83.17       4.10
SRCPARAM RW07L006 1.0           12.00      20.00      49.79      83.17       4.10
SRCPARAM RW07L007 1.0           12.00      20.00      49.79      83.17       4.10
SRCPARAM RW07L008 1.0           12.00      20.00      49.79      83.17       4.10
SRCPARAM RW07L009 1.0           12.00      20.00      49.79      83.17       4.10
SRCPARAM RW07L010 1.0           12.00      20.00      49.79      83.17       4.10
SRCPARAM RW07L011 1.0           12.00      20.00      49.79      83.17       4.10
SRCPARAM RW07L012 1.0           12.00      20.00      49.79      83.17       4.10
SRCPARAM RW07L013 1.0           12.00      20.00      49.79      83.17       4.10
SRCPARAM RW07L014 1.0           12.00      20.00      49.79      83.17       4.10
SRCPARAM RW07L015 1.0           12.00      20.00      49.79      83.17       4.10
SRCPARAM RW07L016 1.0           12.00      20.00      49.79      83.17       4.10
SRCPARAM RW07L017 1.0           12.00      20.00      49.79      83.17       4.10
SRCPARAM RW07L018 1.0           12.00      20.00      49.79      83.17       4.10
SRCPARAM RW07L019 1.0           12.00      20.00      49.79      83.17       4.10
SRCPARAM RW07L020 1.0           12.00      20.00      49.79      83.17       4.10
SRCPARAM RW07L021 1.0           12.00      20.00      49.79      83.17       4.10
SRCPARAM RW07L022 1.0           12.00      20.00      49.79      83.17       4.10
SRCPARAM RW07L023 1.0           12.00      20.00      49.79      83.17       4.10
SRCPARAM RW07L024 1.0           12.00      20.00      49.79      83.17       4.10
```

Table L.2-2
AERMOD Input File for 2003 Baseline Diesel PM Run

```
SRCPARAM RW07L025 1.0           12.00     20.00     49.79     83.17       4.10
SRCPARAM RW07L026 1.0           12.00     20.00     49.79     83.17       4.10
SRCPARAM RW07L027 1.0           12.00     20.00     49.79     83.17       4.10
SRCPARAM RW07L028 1.0           12.00     20.00     49.79     83.17       4.10
SRCPARAM RW07L029 1.0           12.00     20.00     49.79     83.17       4.10
SRCPARAM RW07L030 1.0           12.00     20.00     49.79     83.17       4.10
SRCPARAM RW07L031 1.0           12.00     20.00     49.79     83.17       4.10
SRCPARAM RW07L032 1.0           12.00     20.00     49.79     83.17       4.10
SRCPARAM RW07L033 1.0           12.00     20.00     49.79     83.17       4.10
SRCPARAM RW07L034 1.0           12.00     20.00     49.79     83.17       4.10
SRCPARAM RW07L035 1.0           12.00     20.00     49.79     83.17       4.10
SRCPARAM RW07L036 1.0           12.00     20.00     49.79     83.17       4.10
SRCPARAM RW07L037 1.0           12.00     20.00     49.79     83.17       4.10
SRCPARAM RW07L038 1.0           12.00     20.00     49.79     83.17       4.10
SRCPARAM RW07L039 1.0           12.00     20.00     49.79     83.17       4.10
SRCPARAM RW07L040 1.0           12.00     20.00     49.79     83.17       4.10
SRCPARAM RW07L041 1.0           12.00     20.00     49.79     83.17       4.10
SRCPARAM RW07L042 1.0           12.00     20.00     49.79     83.17       4.10
SRCPARAM RW07L043 1.0           12.00     20.00     49.79     83.17       4.10
SRCPARAM RW07L044 1.0           12.00     20.00     49.79     83.17       4.10
SRCPARAM RW07L045 1.0           12.00     20.00     49.79     83.17       4.10
SRCPARAM RW07L046 1.0           12.00     20.00     49.79     83.17       4.10
SRCPARAM RW07L047 1.0           12.00     20.00     49.79     83.17       4.10
SRCPARAM RW07L048 1.0           12.00     20.00     49.79     83.17       4.10
SRCPARAM RW07L049 1.0           12.00     20.00     49.79     83.17       4.10
SRCPARAM RW07L050 1.0           12.00     20.00     49.79     83.17       4.10
SRCPARAM RW07L051 1.0           12.00     20.00     49.79     83.17       4.10
SRCPARAM RW07L052 1.0           12.00     20.00     49.79     83.17       4.10
SRCPARAM RW07L053 1.0           12.00     20.00     49.79     83.17       4.10
SRCPARAM RW07L054 1.0           12.00     20.00     49.79     83.17       4.10
SRCPARAM RW07L055 1.0           12.00     20.00     49.79     83.17       4.10
SRCPARAM RW07L056 1.0           12.00     20.00     49.79     83.17       4.10
SRCPARAM RW07L057 1.0           12.00     20.00     49.79     83.17       4.10
SRCPARAM RW07L058 1.0           12.00     20.00     49.79     83.17       4.10
SRCPARAM RW07L059 1.0           12.00     20.00     49.79     83.17       4.10
SRCPARAM RW07L060 1.0           12.00     20.00     49.79     83.17       4.10
SRCPARAM RW07L061 1.0           12.00     20.00     49.79     83.17       4.10
SRCPARAM RW07L062 1.0           12.00     20.00     49.79     83.17       4.10
SRCPARAM RW07L063 1.0           12.00     20.00     49.79     83.17       4.10
SRCPARAM RW07L064 1.0           12.00     20.00     49.79     83.17       4.10
SRCPARAM RW07L065 1.0           12.00     20.00     49.79     83.17       4.10
SRCPARAM RW07L066 1.0           12.00     20.00     49.79     83.17       4.10
SRCPARAM RW07L067 1.0           12.00     20.00     49.79     83.17       4.10
SRCPARAM RW07L068 1.0           12.00     20.00     49.79     83.17       4.10
SRCPARAM RW07L069 1.0           12.00     20.00     49.79     83.17       4.10
SRCPARAM RW07L070 1.0           12.00     20.00     49.79     83.17       4.10
SRCPARAM RW07L071 1.0           12.00     20.00     49.79     83.17       4.10
SRCPARAM RW07L072 1.0           12.00     20.00     49.79     83.17       4.10
SRCPARAM RW07L073 1.0           12.00     20.00     49.79     83.17       4.10
SRCPARAM RW07L074 1.0           12.00     20.00     49.79     83.17       4.10
SRCPARAM DS25R002 1.0           14.34     20.00     30.92    -96.83       4.10
SRCPARAM DS25R003 1.0           16.05     20.00    160.78    -96.83       4.12
SRCPARAM DS25R004 1.0           16.00     20.00    118.06    -96.83       4.10
SRCPARAM DS25R007 1.0           15.99     20.00    161.29    -96.83       4.10
SRCPARAM DS25R008 1.0           15.55     20.00    200.00    -96.83       4.11
SRCPARAM DS25R009 1.0           18.96     20.00    200.00    -96.83       4.26
SRCPARAM DS25R010 1.0           15.99     20.00    200.00    -96.83       4.10
SRCPARAM DS25R011 1.0           16.00     20.00    200.00    -96.83       4.10
SRCPARAM DS25R012 1.0           14.26     20.00    200.00    -96.83       4.37
SRCPARAM DS25R013 1.0           17.34     20.00     45.07    -96.83       4.10
SRCPARAM DS25R014 1.0           16.00     20.00    122.02    -96.83       4.10
SRCPARAM DS25R015 1.0           15.81     20.00    168.19    -96.83       4.16
SRCPARAM DS25R016 1.0           16.95     20.00     58.49    -96.83       4.11
SRCPARAM DS25R039 1.0           24.09     20.00    184.55    -96.83       5.39
SRCPARAM DS25R040 1.0           29.51     20.00    200.00    -96.83       4.81
SRCPARAM DS25R041 1.0           33.72     20.00     72.60    -96.83       4.10
SRCPARAM DS25R043 1.0           30.00     20.00    105.77    -96.83       4.10
SRCPARAM DS25R044 1.0           22.56     20.00    172.78    -96.83       4.48
SRCPARAM DS25R045 1.0           30.04     20.00    200.00    -96.83       4.15
SRCPARAM DS25R046 1.0           26.64     20.00    200.00    -96.83       5.58
SRCPARAM DS25R047 1.0           28.05     20.00    200.00    -96.83       4.95
```

Table L.2-2
AERMOD Input File for 2003 Baseline Diesel PM Run

```
SRCPARAM DS25R048 1.0          35.84      20.00     200.00     -96.83        4.23
SRCPARAM DS25R049 1.0          29.45      20.00     200.00     -96.83        4.26
SRCPARAM DS25R050 1.0          26.29      20.00     200.00     -96.83        5.79
SRCPARAM DS25R051 1.0          27.75      20.00     200.00     -96.83        5.27
SRCPARAM DS25R052 1.0          32.89      20.00     200.00     -96.83        5.83
SRCPARAM DS25R053 1.0          37.42      20.00      49.23     -96.83        4.10
SRCPARAM DS25R075 1.0          48.13      20.00      90.18     -96.83        4.88
SRCPARAM DS25R076 1.0          43.82      20.00     200.00     -96.83        4.40
SRCPARAM DS25R077 1.0          52.01      20.00     188.23     -96.83        4.46
SRCPARAM DS25R079 1.0          41.25      20.00      13.21     -96.83        4.10
SRCPARAM DS25R080 1.0          51.25      20.00     200.00     -96.83        4.10
SRCPARAM DS25R081 1.0          48.17      20.00     200.00     -96.83        4.24
SRCPARAM DS25R082 1.0          55.99      20.00     200.00     -96.83        5.16
SRCPARAM DS25R083 1.0          47.21      20.00     200.00     -96.83        4.58
SRCPARAM DS25R084 1.0          50.85      20.00     175.31     -96.83        4.58
SRCPARAM DS25R085 1.0          43.54      20.00     107.53     -96.83        4.21
SRCPARAM DS25R086 1.0          50.31      20.00     184.29     -96.83        4.22
SRCPARAM DS25R087 1.0          46.86      20.00     123.90     -96.83        4.35
SRCPARAM DS25R088 1.0          49.07      20.00     200.00     -96.83        4.71
SRCPARAM DS25R089 1.0          52.21      20.00     200.00     -96.83        6.44
SRCPARAM DS25R090 1.0          57.90      20.00      39.96     -96.83        4.10
SRCPARAM DS25R112 1.0          69.22      20.00     195.81     -96.83        4.21
SRCPARAM DS25R113 1.0          68.89      20.00     200.00     -96.83        4.98
SRCPARAM DS25R114 1.0          71.53      20.00     144.47     -96.83        4.16
SRCPARAM DS25R116 1.0          70.00      20.00     105.77     -96.83        4.10
SRCPARAM DS25R117 1.0          63.26      20.00     104.08     -96.83        4.12
SRCPARAM DS25R118 1.0          70.01      20.00     200.00     -96.83        4.17
SRCPARAM DS25R119 1.0          67.46      20.00     200.00     -96.83        5.43
SRCPARAM DS25R120 1.0          68.01      20.00     200.00     -96.83        5.75
SRCPARAM DS25R121 1.0          72.00      20.00      99.98     -96.83        4.12
SRCPARAM DS25R122 1.0          62.12      20.00      73.93     -96.83        4.38
SRCPARAM DS25R123 1.0          71.20      20.00     176.89     -96.83        4.19
SRCPARAM DS25R124 1.0          68.87      20.00     164.92     -96.83        4.61
SRCPARAM DS25R125 1.0          70.16      20.00     200.00     -96.83        4.28
SRCPARAM DS25R126 1.0          68.81      20.00     200.00     -96.83        4.25
SRCPARAM DS25R127 1.0          78.39      20.00      30.70     -96.83        4.10
SRCPARAM DS25R148 1.0          90.00      20.00      94.37     -96.83        4.10
SRCPARAM DS25R149 1.0          86.27      20.00     174.40     -96.83        4.14
SRCPARAM DS25R150 1.0          90.82      20.00     200.00     -96.83        6.04
SRCPARAM DS25R151 1.0          95.66      20.00      80.78     -96.83        4.63
SRCPARAM DS25R152 1.0          80.16      20.00       2.00     -96.83        4.10
SRCPARAM DS25R153 1.0          90.16      20.00     104.11     -96.83        4.10
SRCPARAM DS25R154 1.0          87.10      20.00     183.20     -96.83        4.37
SRCPARAM DS25R155 1.0          95.16      20.00     200.00     -96.83        5.08
SRCPARAM DS25R156 1.0          87.71      20.00     200.00     -96.83        5.57
SRCPARAM DS25R157 1.0          89.00      20.00     200.00     -96.83        4.43
SRCPARAM DS25R158 1.0          98.02      20.00      24.66     -96.83        4.10
SRCPARAM DS25R159 1.0          83.34      20.00     105.07     -96.83        4.33
SRCPARAM DS25R160 1.0          92.65      20.00     200.00     -96.83        4.31
SRCPARAM DS25R161 1.0          87.58      20.00     200.00     -96.83        5.76
SRCPARAM DS25R162 1.0          90.55      20.00     200.00     -96.83        4.22
SRCPARAM DS25R163 1.0          89.28      20.00     200.00     -96.83        4.27
SRCPARAM DS25R164 1.0          98.88      20.00      21.44     -96.83        4.10
SRCPARAM DS25R184 1.0         100.75      20.00       7.08     -96.83        4.10
SRCPARAM DS25R185 1.0         109.06      20.00     200.00     -96.83        5.20
SRCPARAM DS25R186 1.0         110.03      20.00     124.17     -96.83        4.11
SRCPARAM DS25R187 1.0         109.71      20.00     180.53     -96.83        4.13
SRCPARAM DS25R188 1.0         118.96      20.00      13.80     -96.83        4.10
SRCPARAM DS25R189 1.0         108.98      20.00      95.89     -96.83        4.10
SRCPARAM DS25R190 1.0         111.75      20.00     200.00     -96.83        8.57
SRCPARAM DS25R191 1.0         110.06      20.00     183.54     -96.83        4.13
SRCPARAM DS25R192 1.0         110.00      20.00     160.91     -96.83        4.10
SRCPARAM DS25R193 1.0         107.08      20.00     183.60     -96.83        4.64
SRCPARAM DS25R194 1.0         110.84      20.00     149.33     -96.83        4.55
SRCPARAM DS25R196 1.0         105.06      20.00     136.21     -96.83        4.30
SRCPARAM DS25R197 1.0         110.77      20.00     200.00     -96.83        6.99
SRCPARAM DS25R198 1.0         105.89      20.00     200.00     -96.83        6.04
SRCPARAM DS25R199 1.0         112.48      20.00     200.00     -96.83        4.27
SRCPARAM DS25R200 1.0         109.74      20.00     200.00     -96.83        4.29
SRCPARAM DS25R201 1.0         119.36      20.00      12.18     -96.83        4.10
SRCPARAM DS25R221 1.0         130.00      20.00      94.37     -96.83        4.10
```

Table L.2-2
AERMOD Input File for 2003 Baseline Diesel PM Run

SRCPARAM	DS25R222	1.0	128.43	20.00	105.86	-96.83	4.10
SRCPARAM	DS25R223	1.0	129.67	20.00	200.00	-96.83	7.23
SRCPARAM	DS25R224	1.0	132.86	20.00	146.82	-96.83	4.97
SRCPARAM	DS25R226	1.0	130.00	20.00	107.25	-96.83	4.10
SRCPARAM	DS25R227	1.0	126.40	20.00	141.43	-96.83	4.41
SRCPARAM	DS25R228	1.0	133.67	20.00	200.00	-96.83	5.08
SRCPARAM	DS25R229	1.0	126.75	20.00	200.00	-96.83	6.03
SRCPARAM	DS25R230	1.0	127.53	20.00	200.00	-96.83	5.31
SRCPARAM	DS25R231	1.0	134.09	20.00	145.99	-96.83	4.11
SRCPARAM	DS25R233	1.0	126.80	20.00	167.35	-96.83	4.28
SRCPARAM	DS25R234	1.0	129.31	20.00	200.00	-96.83	7.21
SRCPARAM	DS25R235	1.0	126.41	20.00	200.00	-96.83	5.46
SRCPARAM	DS25R236	1.0	134.23	20.00	200.00	-96.83	4.51
SRCPARAM	DS25R237	1.0	130.19	20.00	200.00	-96.83	4.29
SRCPARAM	DS25R238	1.0	139.85	20.00	2.92	-96.83	4.10
SRCPARAM	DS25R257	1.0	141.94	20.00	18.35	-96.83	4.10
SRCPARAM	DS25R258	1.0	151.94	20.00	76.02	-96.83	4.10
SRCPARAM	DS25R259	1.0	150.00	20.00	148.65	-96.83	4.10
SRCPARAM	DS25R260	1.0	149.13	20.00	149.29	-96.83	4.61
SRCPARAM	DS25R261	1.0	154.00	20.00	79.85	-96.83	4.10
SRCPARAM	DS25R262	1.0	147.61	20.00	81.64	-96.83	4.10
SRCPARAM	DS25R263	1.0	153.46	20.00	200.00	-96.83	7.33
SRCPARAM	DS25R264	1.0	149.76	20.00	200.00	-96.83	4.17
SRCPARAM	DS25R265	1.0	153.98	20.00	192.88	-96.83	6.02
SRCPARAM	DS25R266	1.0	147.66	20.00	127.26	-96.83	5.01
SRCPARAM	DS25R267	1.0	150.20	20.00	200.00	-96.83	4.20
SRCPARAM	DS25R268	1.0	152.13	20.00	199.12	-96.83	4.10
SRCPARAM	DS25R270	1.0	148.28	20.00	198.49	-96.83	4.16
SRCPARAM	DS25R271	1.0	148.63	20.00	200.00	-96.83	6.25
SRCPARAM	DS25R272	1.0	147.70	20.00	200.00	-96.83	4.94
SRCPARAM	DS25R273	1.0	155.48	20.00	200.00	-96.83	5.10
SRCPARAM	DS25R274	1.0	150.32	20.00	193.65	-96.83	4.31
SRCPARAM	DS25R294	1.0	170.00	20.00	94.37	-96.83	4.10
SRCPARAM	DS25R295	1.0	169.97	20.00	96.11	-96.83	4.13
SRCPARAM	DS25R296	1.0	163.46	20.00	200.00	-96.83	4.68
SRCPARAM	DS25R297	1.0	171.55	20.00	200.00	-96.83	4.50
SRCPARAM	DS25R298	1.0	179.03	20.00	12.87	-96.83	4.10
SRCPARAM	DS25R299	1.0	170.00	20.00	107.25	-96.83	4.10
SRCPARAM	DS25R300	1.0	165.93	20.00	147.46	-96.83	4.23
SRCPARAM	DS25R301	1.0	172.71	20.00	200.00	-96.83	5.10
SRCPARAM	DS25R302	1.0	171.54	20.00	200.00	-96.83	4.56
SRCPARAM	DS25R303	1.0	166.76	20.00	200.00	-96.83	4.85
SRCPARAM	DS25R304	1.0	170.92	20.00	200.00	-96.83	4.50
SRCPARAM	DS25R305	1.0	167.97	20.00	200.00	-96.83	4.10
SRCPARAM	DS25R306	1.0	164.53	20.00	200.00	-96.83	7.35
SRCPARAM	DS25R307	1.0	169.95	20.00	200.00	-96.83	4.18
SRCPARAM	DS25R308	1.0	168.47	20.00	200.00	-96.83	4.36
SRCPARAM	DS25R309	1.0	169.32	20.00	200.00	-96.83	4.51
SRCPARAM	DS25R310	1.0	173.89	20.00	200.00	-96.83	6.87
SRCPARAM	DS25R311	1.0	170.61	20.00	184.39	-96.83	4.31
SRCPARAM	DS25R330	1.0	183.14	20.00	29.62	-96.83	4.10
SRCPARAM	DS25R331	1.0	182.46	20.00	200.00	-96.83	5.97
SRCPARAM	DS25R332	1.0	190.66	20.00	200.00	-96.83	4.11
SRCPARAM	DS25R333	1.0	190.04	20.00	197.58	-96.83	4.14
SRCPARAM	DS25R334	1.0	190.00	20.00	133.02	-96.83	4.10
SRCPARAM	DS25R335	1.0	186.26	20.00	67.14	-96.83	4.10
SRCPARAM	DS25R336	1.0	193.46	20.00	200.00	-96.83	6.31
SRCPARAM	DS25R337	1.0	189.29	20.00	200.00	-96.83	4.42
SRCPARAM	DS25R338	1.0	194.58	20.00	198.04	-96.83	4.97
SRCPARAM	DS25R339	1.0	184.26	20.00	82.51	-96.83	4.34
SRCPARAM	DS25R340	1.0	188.02	20.00	200.00	-96.83	4.74
SRCPARAM	DS25R341	1.0	196.14	20.00	58.72	-96.83	4.10
SRCPARAM	DS25R342	1.0	185.84	20.00	147.75	-96.83	4.10
SRCPARAM	DS25R343	1.0	185.67	20.00	200.00	-96.83	6.15
SRCPARAM	DS25R344	1.0	190.15	20.00	200.00	-96.83	4.24
SRCPARAM	DS25R345	1.0	190.05	20.00	194.81	-96.83	4.12
SRCPARAM	DS25R346	1.0	189.91	20.00	185.19	-96.83	4.19
SRCPARAM	DS25R347	1.0	188.44	20.00	200.00	-96.83	5.68
SRCPARAM	DS25R348	1.0	191.04	20.00	175.13	-96.83	4.28
SRCPARAM	DS25R367	1.0	210.00	20.00	94.37	-96.83	4.10
SRCPARAM	DS25R368	1.0	210.00	20.00	89.86	-96.83	4.10

Table L.2-2
AERMOD Input File for 2003 Baseline Diesel PM Run

SRCPARAM	DS25R369	1.0	205.39	20.00	168.78	-96.83	6.38
SRCPARAM	DS25R370	1.0	209.29	20.00	200.00	-96.83	4.65
SRCPARAM	DS25R371	1.0	214.07	20.00	78.92	-96.83	4.10
SRCPARAM	DS25R372	1.0	210.00	20.00	107.25	-96.83	4.10
SRCPARAM	DS25R373	1.0	205.06	20.00	153.97	-96.83	4.32
SRCPARAM	DS25R374	1.0	212.55	20.00	200.00	-96.83	4.74
SRCPARAM	DS25R375	1.0	210.43	20.00	112.17	-96.83	4.29
SRCPARAM	DS25R376	1.0	208.24	20.00	169.36	-96.83	4.52
SRCPARAM	DS25R377	1.0	210.13	20.00	198.86	-96.83	4.20
SRCPARAM	DS25R379	1.0	203.74	20.00	94.63	-96.83	4.10
SRCPARAM	DS25R380	1.0	203.14	20.00	200.00	-96.83	5.00
SRCPARAM	DS25R381	1.0	211.23	20.00	200.00	-96.83	4.85
SRCPARAM	DS25R382	1.0	206.66	20.00	200.00	-96.83	6.09
SRCPARAM	DS25R383	1.0	211.16	20.00	200.00	-96.83	4.20
SRCPARAM	DS25R384	1.0	207.96	20.00	200.00	-96.83	5.73
SRCPARAM	DS25R385	1.0	211.43	20.00	165.87	-96.83	4.22
SRCPARAM	DS25R403	1.0	224.33	20.00	40.89	-96.83	4.10
SRCPARAM	DS25R404	1.0	223.31	20.00	200.00	-96.83	4.55
SRCPARAM	DS25R405	1.0	232.90	20.00	200.00	-96.83	4.17
SRCPARAM	DS25R406	1.0	227.62	20.00	200.00	-96.83	4.17
SRCPARAM	DS25R407	1.0	232.40	20.00	200.00	-96.83	5.80
SRCPARAM	DS25R408	1.0	225.08	20.00	200.00	-96.83	4.39
SRCPARAM	DS25R409	1.0	232.92	20.00	200.00	-96.83	5.54
SRCPARAM	DS25R410	1.0	229.22	20.00	200.00	-96.83	4.69
SRCPARAM	DS25R411	1.0	232.96	20.00	200.00	-96.83	4.48
SRCPARAM	DS25R412	1.0	229.50	20.00	200.00	-96.83	8.12
SRCPARAM	DS25R413	1.0	224.97	20.00	200.00	-96.83	5.14
SRCPARAM	DS25R414	1.0	232.70	20.00	139.00	-96.83	4.26
SRCPARAM	DS25R416	1.0	221.64	20.00	41.50	-96.83	4.10
SRCPARAM	DS25R417	1.0	224.37	20.00	200.00	-96.83	4.51
SRCPARAM	DS25R418	1.0	230.18	20.00	200.00	-96.83	6.60
SRCPARAM	DS25R419	1.0	226.07	20.00	200.00	-96.83	5.84
SRCPARAM	DS25R420	1.0	233.30	20.00	200.00	-96.83	4.24
SRCPARAM	DS25R421	1.0	227.71	20.00	200.00	-96.83	5.71
SRCPARAM	DS25R422	1.0	231.80	20.00	156.61	-96.83	4.11
SRCPARAM	DS25R440	1.0	250.00	20.00	94.37	-96.83	4.10
SRCPARAM	DS25R441	1.0	250.00	20.00	89.86	-96.83	4.10
SRCPARAM	DS25R442	1.0	247.46	20.00	100.24	-96.83	4.10
SRCPARAM	DS25R443	1.0	250.04	20.00	144.45	-96.83	4.14
SRCPARAM	DS25R444	1.0	250.00	20.00	133.02	-96.83	4.10
SRCPARAM	DS25R445	1.0	250.00	20.00	107.25	-96.83	4.10
SRCPARAM	DS25R446	1.0	244.24	20.00	160.48	-96.83	4.48
SRCPARAM	DS25R447	1.0	252.17	20.00	200.00	-96.83	4.49
SRCPARAM	DS25R448	1.0	250.24	20.00	140.63	-96.83	4.30
SRCPARAM	DS25R449	1.0	245.17	20.00	143.06	-96.83	4.99
SRCPARAM	DS25R450	1.0	248.97	20.00	200.00	-96.83	4.31
SRCPARAM	DS25R451	1.0	258.08	20.00	79.15	-96.83	4.20
SRCPARAM	DS25R454	1.0	245.99	20.00	188.37	-96.83	4.35
SRCPARAM	DS25R455	1.0	249.55	20.00	200.00	-96.83	6.74
SRCPARAM	DS25R456	1.0	246.94	20.00	200.00	-96.83	5.25
SRCPARAM	DS25R457	1.0	255.47	20.00	200.00	-96.83	4.23
SRCPARAM	DS25R458	1.0	247.32	20.00	200.00	-96.83	5.57
SRCPARAM	DS25R459	1.0	252.29	20.00	147.34	-96.83	4.11
SRCPARAM	DS25R476	1.0	265.53	20.00	52.15	-96.83	4.10
SRCPARAM	DS25R477	1.0	265.36	20.00	200.00	-96.83	4.28
SRCPARAM	DS25R478	1.0	275.21	20.00	43.05	-96.83	4.10
SRCPARAM	DS25R479	1.0	265.05	20.00	165.97	-96.83	4.24
SRCPARAM	DS25R480	1.0	272.11	20.00	200.00	-96.83	6.19
SRCPARAM	DS25R481	1.0	264.62	20.00	200.00	-96.83	5.19
SRCPARAM	DS25R482	1.0	272.17	20.00	200.00	-96.83	4.96
SRCPARAM	DS25R483	1.0	269.66	20.00	200.00	-96.83	4.57
SRCPARAM	DS25R484	1.0	270.85	20.00	200.00	-96.83	4.25
SRCPARAM	DS25R485	1.0	274.18	20.00	200.00	-96.83	6.18
SRCPARAM	DS25R486	1.0	268.57	20.00	200.00	-96.83	4.20
SRCPARAM	DS25R487	1.0	270.09	20.00	200.00	-96.83	4.21
SRCPARAM	DS25R488	1.0	278.62	20.00	19.29	-96.83	4.10
SRCPARAM	DS25R491	1.0	267.49	20.00	185.33	-96.83	4.24
SRCPARAM	DS25R492	1.0	269.46	20.00	200.00	-96.83	6.09
SRCPARAM	DS25R493	1.0	268.35	20.00	200.00	-96.83	4.73
SRCPARAM	DS25R494	1.0	277.43	20.00	200.00	-96.83	4.60
SRCPARAM	DS25R495	1.0	267.04	20.00	200.00	-96.83	5.47

Table L.2-2
AERMOD Input File for 2003 Baseline Diesel PM Run

SRCPARAM	DS25R496	1.0	272.86	20.00	138.08	-96.83	4.18
SRCPARAM	DS25R513	1.0	292.40	20.00	117.01	-96.83	4.10
SRCPARAM	DS25R514	1.0	292.40	20.00	111.43	-96.83	4.10
SRCPARAM	DS25R515	1.0	282.36	20.00	31.70	-96.83	4.10
SRCPARAM	DS25R516	1.0	292.15	20.00	200.00	-96.83	4.12
SRCPARAM	DS25R517	1.0	290.26	20.00	200.00	-96.83	5.69
SRCPARAM	DS25R518	1.0	292.37	20.00	200.00	-96.83	4.28
SRCPARAM	DS25R519	1.0	284.26	20.00	200.00	-96.83	5.67
SRCPARAM	DS25R520	1.0	293.27	20.00	200.00	-96.83	5.03
SRCPARAM	DS25R521	1.0	298.54	20.00	196.49	-96.83	5.64
SRCPARAM	DS25R522	1.0	287.60	20.00	116.76	-96.83	4.72
SRCPARAM	DS25R523	1.0	285.94	20.00	200.00	-96.83	5.27
SRCPARAM	DS25R524	1.0	296.70	20.00	193.07	-96.83	4.15
SRCPARAM	DS25R527	1.0	282.06	20.00	44.15	-96.83	4.25
SRCPARAM	DS25R528	1.0	289.50	20.00	200.00	-96.83	4.48
SRCPARAM	DS25R529	1.0	291.89	20.00	200.00	-96.83	6.67
SRCPARAM	DS25R530	1.0	290.56	20.00	200.00	-96.83	4.96
SRCPARAM	DS25R531	1.0	301.65	20.00	200.00	-96.83	5.33
SRCPARAM	DS25R532	1.0	287.61	20.00	200.00	-96.83	5.95
SRCPARAM	DS25R533	1.0	296.17	20.00	174.60	-96.83	4.44
SRCPARAM	AS25R001	1.0	16.00	20.00	152.66	-96.83	4.10
SRCPARAM	AS25R037	1.0	21.26	20.00	57.60	-96.83	4.10
SRCPARAM	AS25R038	1.0	27.76	20.00	200.00	-96.83	4.11
SRCPARAM	AS25R039	1.0	36.50	20.00	136.68	-96.83	4.10
SRCPARAM	AS25R075	1.0	41.78	20.00	100.39	-96.83	4.11
SRCPARAM	AS25R076	1.0	48.77	20.00	200.00	-96.83	4.13
SRCPARAM	AS25R077	1.0	56.99	20.00	118.47	-96.83	4.10
SRCPARAM	AS25R113	1.0	62.30	20.00	142.50	-96.83	4.12
SRCPARAM	AS25R114	1.0	69.78	20.00	200.00	-96.83	4.16
SRCPARAM	AS25R115	1.0	77.46	20.00	99.89	-96.83	4.10
SRCPARAM	AS25R151	1.0	82.83	20.00	184.60	-96.83	4.14
SRCPARAM	AS25R152	1.0	90.75	20.00	200.00	-96.83	4.17
SRCPARAM	AS25R153	1.0	97.93	20.00	81.31	-96.83	4.10
SRCPARAM	AS25R188	1.0	100.75	20.00	26.71	-96.83	4.10
SRCPARAM	AS25R189	1.0	103.38	20.00	200.00	-96.83	4.20
SRCPARAM	AS25R190	1.0	111.68	20.00	200.00	-96.83	4.16
SRCPARAM	AS25R191	1.0	118.41	20.00	62.73	-96.83	4.10
SRCPARAM	AS25R226	1.0	121.92	20.00	68.81	-96.83	4.10
SRCPARAM	AS25R227	1.0	123.93	20.00	200.00	-96.83	4.28
SRCPARAM	AS25R228	1.0	132.61	20.00	200.00	-96.83	4.15
SRCPARAM	AS25R229	1.0	138.89	20.00	44.14	-96.83	4.10
SRCPARAM	AS25R264	1.0	143.10	20.00	110.92	-96.83	4.10
SRCPARAM	AS25R265	1.0	144.46	20.00	200.00	-96.83	4.38
SRCPARAM	AS25R266	1.0	153.54	20.00	200.00	-96.83	4.13
SRCPARAM	AS25R267	1.0	159.37	20.00	25.56	-96.83	4.10
SRCPARAM	AS25R302	1.0	164.28	20.00	153.02	-96.83	4.10
SRCPARAM	AS25R303	1.0	164.98	20.00	200.00	-96.83	4.49
SRCPARAM	AS25R304	1.0	174.47	20.00	200.00	-96.83	4.10
SRCPARAM	AS25R305	1.0	179.85	20.00	6.98	-96.83	4.10
SRCPARAM	AS25R340	1.0	185.45	20.00	195.13	-96.83	4.10
SRCPARAM	AS25R341	1.0	185.39	20.00	200.00	-96.83	4.45
SRCPARAM	AS25R342	1.0	195.09	20.00	188.40	-96.83	4.10
SRCPARAM	AS25R377	1.0	201.04	20.00	37.23	-96.83	4.10
SRCPARAM	AS25R378	1.0	202.95	20.00	200.00	-96.83	5.40
SRCPARAM	AS25R379	1.0	206.13	20.00	200.00	-96.83	4.38
SRCPARAM	AS25R380	1.0	215.57	20.00	169.82	-96.83	4.10
SRCPARAM	AS25R415	1.0	222.22	20.00	79.34	-96.83	4.10
SRCPARAM	AS25R416	1.0	222.52	20.00	200.00	-96.83	5.44
SRCPARAM	AS25R417	1.0	227.02	20.00	200.00	-96.83	4.29
SRCPARAM	AS25R418	1.0	236.06	20.00	151.24	-96.83	4.10
SRCPARAM	AS25R453	1.0	243.39	20.00	121.44	-96.83	4.10
SRCPARAM	AS25R454	1.0	242.68	20.00	200.00	-96.83	5.50
SRCPARAM	AS25R455	1.0	247.91	20.00	200.00	-96.83	4.20
SRCPARAM	AS25R456	1.0	256.54	20.00	132.66	-96.83	4.10
SRCPARAM	AS25R491	1.0	264.57	20.00	163.55	-96.83	4.10
SRCPARAM	AS25R492	1.0	262.95	20.00	200.00	-96.83	5.52
SRCPARAM	AS25R493	1.0	268.80	20.00	200.00	-96.83	4.10
SRCPARAM	AS25R494	1.0	277.02	20.00	114.08	-96.83	4.10
SRCPARAM	AS25R528	1.0	280.16	20.00	5.65	-96.83	4.10
SRCPARAM	AS25R529	1.0	285.90	20.00	200.00	-96.83	4.10
SRCPARAM	AS25R530	1.0	283.38	20.00	200.00	-96.83	5.67

Table L.2-2
AERMOD Input File for 2003 Baseline Diesel PM Run

SRCPARAM	AS25R531	1.0	289.85	20.00	200.00	-96.83	4.25
SRCPARAM	AS25R532	1.0	299.90	20.00	187.04	-96.83	4.10
SRCPARAM	QU25L001	1.0	12.00	20.00	143.80	-127.23	4.10
SRCPARAM	QU25L002	1.0	12.00	20.00	143.80	-127.23	4.10
SRCPARAM	RW07R001	1.0	12.00	20.00	49.37	83.27	4.10
SRCPARAM	RW07R002	1.0	12.00	20.00	49.37	83.27	4.10
SRCPARAM	RW07R003	1.0	12.00	20.00	49.37	83.27	4.10
SRCPARAM	RW07R004	1.0	12.00	20.00	49.37	83.27	4.10
SRCPARAM	RW07R005	1.0	12.00	20.00	49.37	83.27	4.10
SRCPARAM	RW07R006	1.0	12.00	20.00	49.37	83.27	4.10
SRCPARAM	RW07R007	1.0	12.00	20.00	49.37	83.27	4.10
SRCPARAM	RW07R008	1.0	12.00	20.00	49.37	83.27	4.10
SRCPARAM	RW07R009	1.0	12.00	20.00	49.37	83.27	4.10
SRCPARAM	RW07R010	1.0	12.00	20.00	49.37	83.27	4.10
SRCPARAM	RW07R011	1.0	12.00	20.00	49.37	83.27	4.10
SRCPARAM	RW07R012	1.0	12.00	20.00	49.37	83.27	4.10
SRCPARAM	RW07R013	1.0	12.00	20.00	49.37	83.27	4.10
SRCPARAM	RW07R014	1.0	12.00	20.00	49.37	83.27	4.10
SRCPARAM	RW07R015	1.0	12.00	20.00	49.37	83.27	4.10
SRCPARAM	RW07R016	1.0	12.00	20.00	49.37	83.27	4.10
SRCPARAM	RW07R017	1.0	12.00	20.00	49.37	83.27	4.10
SRCPARAM	RW07R018	1.0	12.00	20.00	49.37	83.27	4.10
SRCPARAM	RW07R019	1.0	12.00	20.00	49.37	83.27	4.10
SRCPARAM	RW07R020	1.0	12.00	20.00	49.37	83.27	4.10
SRCPARAM	RW07R021	1.0	12.00	20.00	49.37	83.27	4.10
SRCPARAM	RW07R022	1.0	12.00	20.00	49.37	83.27	4.10
SRCPARAM	RW07R023	1.0	12.00	20.00	49.37	83.27	4.10
SRCPARAM	RW07R024	1.0	12.00	20.00	49.37	83.27	4.10
SRCPARAM	RW07R025	1.0	12.00	20.00	49.37	83.27	4.10
SRCPARAM	RW07R026	1.0	12.00	20.00	49.37	83.27	4.10
SRCPARAM	RW07R027	1.0	12.00	20.00	49.37	83.27	4.10
SRCPARAM	RW07R028	1.0	12.00	20.00	49.37	83.27	4.10
SRCPARAM	RW07R029	1.0	12.00	20.00	49.37	83.27	4.10
SRCPARAM	RW07R030	1.0	12.00	20.00	49.37	83.27	4.10
SRCPARAM	RW07R031	1.0	12.00	20.00	49.37	83.27	4.10
SRCPARAM	RW07R032	1.0	12.00	20.00	49.37	83.27	4.10
SRCPARAM	RW07R033	1.0	12.00	20.00	49.37	83.27	4.10
SRCPARAM	RW07R034	1.0	12.00	20.00	49.37	83.27	4.10
SRCPARAM	RW07R035	1.0	12.00	20.00	49.37	83.27	4.10
SRCPARAM	RW07R036	1.0	12.00	20.00	49.37	83.27	4.10
SRCPARAM	RW07R037	1.0	12.00	20.00	49.37	83.27	4.10
SRCPARAM	RW07R038	1.0	12.00	20.00	49.37	83.27	4.10
SRCPARAM	RW07R039	1.0	12.00	20.00	49.37	83.27	4.10
SRCPARAM	RW07R040	1.0	12.00	20.00	49.37	83.27	4.10
SRCPARAM	RW07R041	1.0	12.00	20.00	49.37	83.27	4.10
SRCPARAM	RW07R042	1.0	12.00	20.00	49.37	83.27	4.10
SRCPARAM	RW07R043	1.0	12.00	20.00	49.37	83.27	4.10
SRCPARAM	RW07R044	1.0	12.00	20.00	49.37	83.27	4.10
SRCPARAM	RW07R045	1.0	12.00	20.00	49.37	83.27	4.10
SRCPARAM	RW07R046	1.0	12.00	20.00	49.37	83.27	4.10
SRCPARAM	RW07R047	1.0	12.00	20.00	49.37	83.27	4.10
SRCPARAM	RW07R048	1.0	12.00	20.00	49.37	83.27	4.10
SRCPARAM	RW07R049	1.0	12.00	20.00	49.37	83.27	4.10
SRCPARAM	RW07R050	1.0	12.00	20.00	49.37	83.27	4.10
SRCPARAM	RW07R051	1.0	12.00	20.00	49.37	83.27	4.10
SRCPARAM	RW07R052	1.0	12.00	20.00	49.37	83.27	4.10
SRCPARAM	RW07R053	1.0	12.00	20.00	49.37	83.27	4.10
SRCPARAM	RW07R054	1.0	12.00	20.00	49.37	83.27	4.10
SRCPARAM	RW07R055	1.0	12.00	20.00	49.37	83.27	4.10
SRCPARAM	RW07R056	1.0	12.00	20.00	49.37	83.27	4.10
SRCPARAM	RW07R057	1.0	12.00	20.00	49.37	83.27	4.10
SRCPARAM	RW07R058	1.0	12.00	20.00	49.37	83.27	4.10
SRCPARAM	RW07R059	1.0	12.00	20.00	49.37	83.27	4.10
SRCPARAM	RW07R060	1.0	12.00	20.00	49.37	83.27	4.10
SRCPARAM	RW07R061	1.0	12.00	20.00	49.37	83.27	4.10
SRCPARAM	RW07R062	1.0	12.00	20.00	49.37	83.27	4.10
SRCPARAM	RW07R063	1.0	12.00	20.00	49.37	83.27	4.10
SRCPARAM	RW07R064	1.0	12.00	20.00	49.37	83.27	4.10
SRCPARAM	RW07R065	1.0	12.00	20.00	49.37	83.27	4.10
SRCPARAM	RW07R066	1.0	12.00	20.00	49.37	83.27	4.10
SRCPARAM	RW07R067	1.0	12.00	20.00	49.37	83.27	4.10

Table L.2-2
AERMOD Input File for 2003 Baseline Diesel PM Run

```
SRCPARAM RW07R068 1.0          12.00       20.00      49.37      83.27        4.10
SRCPARAM RW07R069 1.0          12.00       20.00      49.37      83.27        4.10
SRCPARAM RW07R070 1.0          12.00       20.00      49.37      83.27        4.10
SRCPARAM RW07R071 1.0          12.00       20.00      49.37      83.27        4.10
SRCPARAM RW07R072 1.0          12.00       20.00      49.37      83.27        4.10
SRCPARAM RW07R073 1.0          12.00       20.00      49.37      83.27        4.10
SRCPARAM RW07R074 1.0          12.00       20.00      49.37      83.27        4.10
SRCPARAM DS25L002 1.0          14.35       20.00      30.92     -96.73        4.10
SRCPARAM DS25L003 1.0          15.99       20.00     183.35     -96.73        4.10
SRCPARAM DS25L004 1.0          16.00       20.00     118.06     -96.73        4.10
SRCPARAM DS25L007 1.0          15.98       20.00     161.29     -96.73        4.10
SRCPARAM DS25L008 1.0          15.96       20.00     200.00     -96.73        4.13
SRCPARAM DS25L009 1.0          16.07       20.00     200.00     -96.73        4.13
SRCPARAM DS25L010 1.0          15.86       20.00     200.00     -96.73        4.12
SRCPARAM DS25L011 1.0          16.10       20.00     125.95     -96.73        4.14
SRCPARAM DS25L012 1.0          13.74       20.00      79.19     -96.73        4.21
SRCPARAM DS25L013 1.0          17.34       20.00      45.07     -96.73        4.10
SRCPARAM DS25L014 1.0          16.00       20.00     129.61     -96.73        4.10
SRCPARAM DS25L015 1.0          15.85       20.00     168.19     -96.73        4.15
SRCPARAM DS25L016 1.0          16.96       20.00      58.49     -96.73        4.11
SRCPARAM DS25L039 1.0          22.43       20.00     184.55     -96.73        4.47
SRCPARAM DS25L040 1.0          31.36       20.00     200.00     -96.73        4.40
SRCPARAM DS25L041 1.0          33.72       20.00      72.60     -96.73        4.10
SRCPARAM DS25L043 1.0          29.39       20.00     118.98     -96.73        4.10
SRCPARAM DS25L044 1.0          32.91       20.00     200.00     -96.73        8.49
SRCPARAM DS25L045 1.0          28.06       20.00     200.00     -96.73        6.01
SRCPARAM DS25L046 1.0          32.22       20.00     200.00     -96.73        4.47
SRCPARAM DS25L047 1.0          28.42       20.00     200.00     -96.73        4.73
SRCPARAM DS25L048 1.0          35.58       20.00     200.00     -96.73        4.70
SRCPARAM DS25L049 1.0          29.22       20.00     200.00     -96.73        4.12
SRCPARAM DS25L050 1.0          27.17       20.00     200.00     -96.73        6.75
SRCPARAM DS25L051 1.0          28.81       20.00     200.00     -96.73        5.50
SRCPARAM DS25L052 1.0          33.24       20.00     200.00     -96.73        5.73
SRCPARAM DS25L053 1.0          37.42       20.00      49.23     -96.73        4.10
SRCPARAM DS25L075 1.0          49.05       20.00      90.18     -96.73        4.45
SRCPARAM DS25L076 1.0          42.73       20.00     200.00     -96.73        4.28
SRCPARAM DS25L077 1.0          52.19       20.00     188.23     -96.73        4.20
SRCPARAM DS25L079 1.0          41.25       20.00      13.21     -96.73        4.10
SRCPARAM DS25L080 1.0          49.96       20.00     200.00     -96.73        4.12
SRCPARAM DS25L081 1.0          49.66       20.00     200.00     -96.73        4.45
SRCPARAM DS25L082 1.0          50.25       20.00     200.00     -96.73        4.31
SRCPARAM DS25L083 1.0          46.17       20.00     200.00     -96.73        4.56
SRCPARAM DS25L084 1.0          51.32       20.00     175.31     -96.73        4.68
SRCPARAM DS25L085 1.0          42.53       20.00      42.79     -96.73        4.10
SRCPARAM DS25L086 1.0          50.11       20.00     184.29     -96.73        4.13
SRCPARAM DS25L087 1.0          46.74       20.00     123.90     -96.73        4.37
SRCPARAM DS25L088 1.0          49.78       20.00     200.00     -96.73        5.09
SRCPARAM DS25L089 1.0          52.69       20.00     200.00     -96.73        6.43
SRCPARAM DS25L090 1.0          57.90       20.00      39.96     -96.73        4.10
SRCPARAM DS25L112 1.0          69.63       20.00     195.81     -96.73        4.19
SRCPARAM DS25L113 1.0          65.43       20.00     200.00     -96.73        5.51
SRCPARAM DS25L114 1.0          72.36       20.00     144.47     -96.73        4.13
SRCPARAM DS25L116 1.0          70.00       20.00     107.34     -96.73        4.10
SRCPARAM DS25L117 1.0          65.42       20.00     161.95     -96.73        5.18
SRCPARAM DS25L118 1.0          71.27       20.00     200.00     -96.73        4.98
SRCPARAM DS25L119 1.0          70.06       20.00     200.00     -96.73        4.18
SRCPARAM DS25L120 1.0          68.00       20.00     200.00     -96.73        5.28
SRCPARAM DS25L121 1.0          72.41       20.00      99.98     -96.73        4.42
SRCPARAM DS25L122 1.0          61.68       20.00      73.93     -96.73        4.34
SRCPARAM DS25L123 1.0          71.05       20.00     153.89     -96.73        4.15
SRCPARAM DS25L124 1.0          68.77       20.00     164.92     -96.73        4.38
SRCPARAM DS25L125 1.0          70.48       20.00     200.00     -96.73        4.57
SRCPARAM DS25L126 1.0          69.00       20.00     200.00     -96.73        4.31
SRCPARAM DS25L127 1.0          78.39       20.00      30.70     -96.73        4.10
SRCPARAM DS25L148 1.0          90.00       20.00      94.37     -96.73        4.10
SRCPARAM DS25L149 1.0          86.28       20.00     174.40     -96.73        4.14
SRCPARAM DS25L150 1.0          86.54       20.00     200.00     -96.73        6.07
SRCPARAM DS25L151 1.0          94.10       20.00      80.78     -96.73        4.19
SRCPARAM DS25L152 1.0          82.71       20.00      23.27     -96.73        4.10
SRCPARAM DS25L153 1.0          92.59       20.00     200.00     -96.73        4.20
SRCPARAM DS25L154 1.0          89.53       20.00     200.00     -96.73        4.52
```

Table L.2-2
AERMOD Input File for 2003 Baseline Diesel PM Run

```
SRCPARAM DS25L155 1.0          88.18      20.00     200.00      -96.73        4.64
SRCPARAM DS25L156 1.0          94.85      20.00     200.00      -96.73        6.43
SRCPARAM DS25L157 1.0          89.29      20.00     200.00      -96.73        4.47
SRCPARAM DS25L158 1.0          98.02      20.00      24.66      -96.73        4.10
SRCPARAM DS25L159 1.0          83.14      20.00     105.07      -96.73        4.25
SRCPARAM DS25L160 1.0          92.81      20.00     200.00      -96.73        4.15
SRCPARAM DS25L161 1.0          88.74      20.00     200.00      -96.73        4.86
SRCPARAM DS25L162 1.0          90.65      20.00     200.00      -96.73        4.43
SRCPARAM DS25L163 1.0          89.47      20.00     200.00      -96.73        4.34
SRCPARAM DS25L164 1.0          98.88      20.00      21.44      -96.73        4.10
SRCPARAM DS25L184 1.0         100.75      20.00       7.08      -96.73        4.10
SRCPARAM DS25L185 1.0         110.10      20.00     200.00      -96.73        4.61
SRCPARAM DS25L186 1.0         110.03      20.00     124.17      -96.73        4.11
SRCPARAM DS25L187 1.0         109.11      20.00     180.53      -96.73        4.12
SRCPARAM DS25L188 1.0         118.96      20.00      13.80      -96.73        4.10
SRCPARAM DS25L189 1.0         109.99      20.00     137.55      -96.73        4.10
SRCPARAM DS25L190 1.0         105.79      20.00     200.00      -96.73        5.13
SRCPARAM DS25L191 1.0         112.05      20.00     183.54      -96.73        4.54
SRCPARAM DS25L192 1.0         110.00      20.00     160.91      -96.73        4.10
SRCPARAM DS25L193 1.0         106.99      20.00     183.60      -96.73        5.13
SRCPARAM DS25L194 1.0         110.97      20.00     149.33      -96.73        4.43
SRCPARAM DS25L196 1.0         104.85      20.00     136.21      -96.73        4.23
SRCPARAM DS25L197 1.0         112.16      20.00     200.00      -96.73        6.49
SRCPARAM DS25L198 1.0         108.20      20.00     200.00      -96.73        5.78
SRCPARAM DS25L199 1.0         112.43      20.00     200.00      -96.73        4.33
SRCPARAM DS25L200 1.0         109.93      20.00     200.00      -96.73        4.37
SRCPARAM DS25L201 1.0         119.36      20.00      12.18      -96.73        4.10
SRCPARAM DS25L221 1.0         130.00      20.00      94.37      -96.73        4.10
SRCPARAM DS25L222 1.0         128.43      20.00     161.49      -96.73        4.10
SRCPARAM DS25L223 1.0         129.80      20.00     200.00      -96.73        7.28
SRCPARAM DS25L224 1.0         130.35      20.00     146.82      -96.73        4.32
SRCPARAM DS25L225 1.0         126.04      20.00      51.82      -96.73        4.10
SRCPARAM DS25L226 1.0         135.72      20.00     200.00      -96.73        4.47
SRCPARAM DS25L227 1.0         129.47      20.00     200.00      -96.73        4.55
SRCPARAM DS25L228 1.0         126.35      20.00     200.00      -96.73        5.22
SRCPARAM DS25L229 1.0         134.41      20.00     200.00      -96.73        4.99
SRCPARAM DS25L230 1.0         127.28      20.00     200.00      -96.73        5.13
SRCPARAM DS25L231 1.0         134.60      20.00     145.99      -96.73        4.27
SRCPARAM DS25L233 1.0         126.61      20.00     167.35      -96.73        4.22
SRCPARAM DS25L234 1.0         130.53      20.00     200.00      -96.73        7.53
SRCPARAM DS25L235 1.0         128.35      20.00     200.00      -96.73        5.71
SRCPARAM DS25L236 1.0         134.37      20.00     200.00      -96.73        4.58
SRCPARAM DS25L237 1.0         130.36      20.00     200.00      -96.73        4.38
SRCPARAM DS25L238 1.0         139.85      20.00       2.92      -96.73        4.10
SRCPARAM DS25L257 1.0         141.94      20.00      18.35      -96.73        4.10
SRCPARAM DS25L258 1.0         151.86      20.00     200.00      -96.73        4.14
SRCPARAM DS25L259 1.0         150.00      20.00     162.68      -96.73        4.10
SRCPARAM DS25L260 1.0         145.64      20.00     149.29      -96.73        4.90
SRCPARAM DS25L261 1.0         154.00      20.00      79.85      -96.73        4.10
SRCPARAM DS25L262 1.0         149.98      20.00     166.09      -96.73        4.10
SRCPARAM DS25L263 1.0         146.22      20.00     200.00      -96.73        5.04
SRCPARAM DS25L264 1.0         152.18      20.00     200.00      -96.73        4.77
SRCPARAM DS25L265 1.0         150.04      20.00     192.88      -96.73        4.14
SRCPARAM DS25L266 1.0         148.94      20.00     115.30      -96.73        4.43
SRCPARAM DS25L267 1.0         150.13      20.00     200.00      -96.73        4.20
SRCPARAM DS25L268 1.0         152.13      20.00     199.12      -96.73        4.10
SRCPARAM DS25L270 1.0         148.22      20.00     198.49      -96.73        4.13
SRCPARAM DS25L271 1.0         148.67      20.00     200.00      -96.73        6.96
SRCPARAM DS25L272 1.0         149.18      20.00     200.00      -96.73        5.43
SRCPARAM DS25L273 1.0         155.99      20.00     200.00      -96.73        5.15
SRCPARAM DS25L274 1.0         150.48      20.00     193.65      -96.73        4.41
SRCPARAM DS25L294 1.0         170.00      20.00      94.37      -96.73        4.10
SRCPARAM DS25L295 1.0         169.97      20.00     179.43      -96.73        4.13
SRCPARAM DS25L296 1.0         163.51      20.00     200.00      -96.73        4.72
SRCPARAM DS25L297 1.0         169.44      20.00     200.00      -96.73        4.27
SRCPARAM DS25L298 1.0         169.46      20.00     200.00      -96.73        4.20
SRCPARAM DS25L299 1.0         177.44      20.00     200.00      -96.73        6.23
SRCPARAM DS25L300 1.0         169.44      20.00     200.00      -96.73        4.49
SRCPARAM DS25L301 1.0         165.48      20.00     200.00      -96.73        6.39
SRCPARAM DS25L302 1.0         172.64      20.00      95.46      -96.73        4.11
SRCPARAM DS25L303 1.0         167.16      20.00     195.66      -96.73        5.39
```

Table L.2-2
AERMOD Input File for 2003 Baseline Diesel PM Run

```
SRCPARAM DS25L304 1.0          170.76      20.00      200.00      -96.73          4.29
SRCPARAM DS25L305 1.0          167.97      20.00      200.00      -96.73          4.10
SRCPARAM DS25L306 1.0          162.16      20.00      200.00      -96.73          4.83
SRCPARAM DS25L307 1.0          169.97      20.00      200.00      -96.73          4.12
SRCPARAM DS25L308 1.0          167.63      20.00      200.00      -96.73          4.55
SRCPARAM DS25L309 1.0          170.22      20.00      200.00      -96.73          4.91
SRCPARAM DS25L310 1.0          174.89      20.00      200.00      -96.73          7.58
SRCPARAM DS25L311 1.0          170.76      20.00      184.39      -96.73          4.41
SRCPARAM DS25L330 1.0          183.14      20.00       29.62      -96.73          4.10
SRCPARAM DS25L331 1.0          185.27      20.00      200.00      -96.73          7.24
SRCPARAM DS25L332 1.0          190.66      20.00      200.00      -96.73          4.11
SRCPARAM DS25L333 1.0          190.04      20.00      197.58      -96.73          4.14
SRCPARAM DS25L334 1.0          190.00      20.00      133.02      -96.73          4.10
SRCPARAM DS25L335 1.0          189.98      20.00      194.63      -96.73          4.11
SRCPARAM DS25L336 1.0          186.66      20.00      200.00      -96.73          4.88
SRCPARAM DS25L337 1.0          192.24      20.00      200.00      -96.73          5.13
SRCPARAM DS25L338 1.0          190.09      20.00      198.04      -96.73          4.17
SRCPARAM DS25L339 1.0          186.42      20.00       82.51      -96.73          4.40
SRCPARAM DS25L340 1.0          187.37      20.00      200.00      -96.73          4.92
SRCPARAM DS25L341 1.0          196.04      20.00       58.72      -96.73          4.10
SRCPARAM DS25L342 1.0          185.84      20.00      147.75      -96.73          4.10
SRCPARAM DS25L343 1.0          183.90      20.00      200.00      -96.73          4.52
SRCPARAM DS25L344 1.0          190.13      20.00      200.00      -96.73          4.16
SRCPARAM DS25L345 1.0          189.29      20.00      200.00      -96.73          4.25
SRCPARAM DS25L346 1.0          190.35      20.00      179.46      -96.73          4.40
SRCPARAM DS25L347 1.0          185.64      20.00      143.95      -96.73          5.27
SRCPARAM DS25L348 1.0          191.15      20.00      175.13      -96.73          4.37
SRCPARAM DS25L367 1.0          210.00      20.00       94.37      -96.73          4.10
SRCPARAM DS25L368 1.0          210.00      20.00      170.83      -96.73          4.10
SRCPARAM DS25L369 1.0          205.62      20.00      168.78      -96.73          6.36
SRCPARAM DS25L370 1.0          205.70      20.00      200.00      -96.73          4.92
SRCPARAM DS25L371 1.0          210.20      20.00      176.82      -96.73          4.19
SRCPARAM DS25L372 1.0          208.59      20.00      159.89      -96.73          5.28
SRCPARAM DS25L373 1.0          209.30      20.00      200.00      -96.73          4.53
SRCPARAM DS25L374 1.0          211.09      20.00      200.00      -96.73          6.40
SRCPARAM DS25L375 1.0          210.18      20.00      112.17      -96.73          4.10
SRCPARAM DS25L376 1.0          209.35      20.00      169.36      -96.73          4.28
SRCPARAM DS25L377 1.0          210.08      20.00      198.86      -96.73          4.17
SRCPARAM DS25L379 1.0          203.74      20.00       94.63      -96.73          4.10
SRCPARAM DS25L380 1.0          202.33      20.00      200.00      -96.73          4.39
SRCPARAM DS25L381 1.0          211.49      20.00      200.00      -96.73          4.54
SRCPARAM DS25L382 1.0          208.51      20.00      200.00      -96.73          5.35
SRCPARAM DS25L383 1.0          211.29      20.00      144.10      -96.73          4.14
SRCPARAM DS25L384 1.0          205.88      20.00      162.24      -96.73          5.55
SRCPARAM DS25L385 1.0          211.50      20.00      165.87      -96.73          4.28
SRCPARAM DS25L403 1.0          224.33      20.00       40.89      -96.73          4.10
SRCPARAM DS25L404 1.0          224.11      20.00      200.00      -96.73          5.34
SRCPARAM DS25L405 1.0          232.90      20.00      200.00      -96.73          4.17
SRCPARAM DS25L406 1.0          227.63      20.00      200.00      -96.73          4.18
SRCPARAM DS25L407 1.0          224.30      20.00      200.00      -96.73          5.06
SRCPARAM DS25L408 1.0          232.73      20.00      200.00      -96.73          4.19
SRCPARAM DS25L409 1.0          226.91      20.00      200.00      -96.73          4.61
SRCPARAM DS25L410 1.0          232.49      20.00      200.00      -96.73          5.48
SRCPARAM DS25L411 1.0          227.91      20.00      200.00      -96.73          4.24
SRCPARAM DS25L412 1.0          236.07      20.00      200.00      -96.73          5.90
SRCPARAM DS25L413 1.0          226.00      20.00      200.00      -96.73          6.24
SRCPARAM DS25L414 1.0          231.68      20.00      139.00      -96.73          4.31
SRCPARAM DS25L416 1.0          221.64      20.00       41.50      -96.73          4.10
SRCPARAM DS25L417 1.0          223.91      20.00      200.00      -96.73          4.29
SRCPARAM DS25L418 1.0          231.23      20.00      200.00      -96.73          6.13
SRCPARAM DS25L419 1.0          228.12      20.00      200.00      -96.73          5.78
SRCPARAM DS25L420 1.0          233.39      20.00      108.75      -96.73          4.10
SRCPARAM DS25L421 1.0          226.26      20.00      180.52      -96.73          5.76
SRCPARAM DS25L422 1.0          231.80      20.00      156.61      -96.73          4.11
SRCPARAM DS25L440 1.0          249.97      20.00      146.52      -96.73          4.13
SRCPARAM DS25L441 1.0          250.00      20.00      153.19      -96.73          4.10
SRCPARAM DS25L442 1.0          247.46      20.00      100.24      -96.73          4.10
SRCPARAM DS25L443 1.0          250.05      20.00      144.45      -96.73          4.14
SRCPARAM DS25L444 1.0          250.00      20.00      136.34      -96.73          4.10
SRCPARAM DS25L445 1.0          250.00      20.00      107.25      -96.73          4.10
SRCPARAM DS25L446 1.0          249.26      20.00      192.15      -96.73          4.58
```

Table L.2-2
AERMOD Input File for 2003 Baseline Diesel PM Run

```
SRCPARAM DS25L447 1.0          252.42      20.00     200.00     -96.73         4.46
SRCPARAM DS25L448 1.0          250.00      20.00     140.63     -96.73         4.10
SRCPARAM DS25L449 1.0          248.86      20.00     143.06     -96.73         4.81
SRCPARAM DS25L450 1.0          248.09      20.00     200.00     -96.73         4.54
SRCPARAM DS25L451 1.0          256.00      20.00      79.15     -96.73         4.53
SRCPARAM DS25L454 1.0          245.64      20.00     188.37     -96.73         4.26
SRCPARAM DS25L455 1.0          250.12      20.00     200.00     -96.73         6.97
SRCPARAM DS25L456 1.0          248.68      20.00     200.00     -96.73         5.70
SRCPARAM DS25L457 1.0          255.54      20.00      73.39     -96.73         4.10
SRCPARAM DS25L458 1.0          246.06      20.00     198.80     -96.73         5.63
SRCPARAM DS25L459 1.0          252.27      20.00     147.34     -96.73         4.10
SRCPARAM DS25L476 1.0          265.53      20.00      52.15     -96.73         4.10
SRCPARAM DS25L477 1.0          265.71      20.00     200.00     -96.73         4.65
SRCPARAM DS25L478 1.0          275.21      20.00      43.05     -96.73         4.10
SRCPARAM DS25L479 1.0          265.07      20.00     165.97     -96.73         4.26
SRCPARAM DS25L480 1.0          266.02      20.00     200.00     -96.73         4.22
SRCPARAM DS25L481 1.0          275.74      20.00     200.00     -96.73         4.25
SRCPARAM DS25L482 1.0          267.11      20.00     200.00     -96.73         4.37
SRCPARAM DS25L483 1.0          272.94      20.00     200.00     -96.73         5.53
SRCPARAM DS25L484 1.0          265.66      20.00     200.00     -96.73         4.38
SRCPARAM DS25L485 1.0          274.75      20.00     200.00     -96.73         4.72
SRCPARAM DS25L486 1.0          270.83      20.00     200.00     -96.73         4.64
SRCPARAM DS25L487 1.0          269.75      20.00     200.00     -96.73         4.22
SRCPARAM DS25L488 1.0          278.62      20.00      19.29     -96.73         4.10
SRCPARAM DS25L491 1.0          267.29      20.00     185.33     -96.73         4.18
SRCPARAM DS25L492 1.0          269.51      20.00     200.00     -96.73         6.57
SRCPARAM DS25L493 1.0          269.55      20.00     200.00     -96.73         5.33
SRCPARAM DS25L494 1.0          277.36      20.00     200.00     -96.73         4.71
SRCPARAM DS25L495 1.0          266.18      20.00     200.00     -96.73         5.75
SRCPARAM DS25L496 1.0          272.76      20.00     138.08     -96.73         4.10
SRCPARAM DS25L513 1.0          292.35      20.00     157.79     -96.73         4.15
SRCPARAM DS25L514 1.0          292.40      20.00     154.47     -96.73         4.10
SRCPARAM DS25L515 1.0          282.36      20.00      31.70     -96.73         4.10
SRCPARAM DS25L516 1.0          292.16      20.00     200.00     -96.73         4.12
SRCPARAM DS25L517 1.0          292.20      20.00     200.00     -96.73         4.18
SRCPARAM DS25L518 1.0          299.25      20.00     200.00     -96.73         5.76
SRCPARAM DS25L519 1.0          291.71      20.00     200.00     -96.73         4.82
SRCPARAM DS25L520 1.0          293.64      20.00     200.00     -96.73         4.91
SRCPARAM DS25L521 1.0          292.50      20.00     196.49     -96.73         4.21
SRCPARAM DS25L522 1.0          290.32      20.00     116.76     -96.73         4.10
SRCPARAM DS25L523 1.0          286.45      20.00     200.00     -96.73         6.14
SRCPARAM DS25L524 1.0          295.16      20.00     193.07     -96.73         4.60
SRCPARAM DS25L527 1.0          281.29      20.00      44.15     -96.73         4.17
SRCPARAM DS25L528 1.0          289.18      20.00     200.00     -96.73         4.28
SRCPARAM DS25L529 1.0          291.91      20.00     200.00     -96.73         7.21
SRCPARAM DS25L530 1.0          291.93      20.00     200.00     -96.73         5.87
SRCPARAM DS25L531 1.0          301.51      20.00     200.00     -96.73         5.57
SRCPARAM DS25L532 1.0          287.83      20.00     200.00     -96.73         6.83
SRCPARAM DS25L533 1.0          295.64      20.00     174.60     -96.73         4.10
SRCPARAM AS25L001 1.0           16.00      20.00     152.66     -96.73         4.10
SRCPARAM AS25L037 1.0           21.26      20.00      57.60     -96.73         4.10
SRCPARAM AS25L038 1.0           27.78      20.00     200.00     -96.73         4.11
SRCPARAM AS25L039 1.0           36.51      20.00     136.68     -96.73         4.10
SRCPARAM AS25L075 1.0           41.80      20.00     100.39     -96.73         4.11
SRCPARAM AS25L076 1.0           48.81      20.00     200.00     -96.73         4.14
SRCPARAM AS25L077 1.0           57.00      20.00     118.47     -96.73         4.11
SRCPARAM AS25L113 1.0           62.35      20.00     142.50     -96.73         4.13
SRCPARAM AS25L114 1.0           69.84      20.00     200.00     -96.73         4.19
SRCPARAM AS25L115 1.0           77.46      20.00      99.89     -96.73         4.10
SRCPARAM AS25L151 1.0           82.90      20.00     184.60     -96.73         4.16
SRCPARAM AS25L152 1.0           90.81      20.00     200.00     -96.73         4.20
SRCPARAM AS25L153 1.0           97.93      20.00      81.31     -96.73         4.10
SRCPARAM AS25L188 1.0          100.75      20.00      26.71     -96.73         4.10
SRCPARAM AS25L189 1.0          103.48      20.00     200.00     -96.73         4.23
SRCPARAM AS25L190 1.0          111.73      20.00     200.00     -96.73         4.19
SRCPARAM AS25L191 1.0          118.41      20.00      62.73     -96.73         4.10
SRCPARAM AS25L226 1.0          121.92      20.00      68.81     -96.73         4.10
SRCPARAM AS25L227 1.0          124.05      20.00     200.00     -96.73         4.36
SRCPARAM AS25L228 1.0          132.65      20.00     200.00     -96.73         4.17
SRCPARAM AS25L229 1.0          138.89      20.00      44.14     -96.73         4.10
SRCPARAM AS25L264 1.0          143.10      20.00     110.92     -96.73         4.10
```

Table L.2-2
AERMOD Input File for 2003 Baseline Diesel PM Run

```
SRCPARAM AS25L265 1.0           144.60      20.00     200.00     -96.73        4.50
SRCPARAM AS25L266 1.0           153.56      20.00     200.00     -96.73        4.14
SRCPARAM AS25L267 1.0           159.37      20.00      25.56     -96.73        4.10
SRCPARAM AS25L302 1.0           164.28      20.00     153.02     -96.73        4.10
SRCPARAM AS25L303 1.0           165.14      20.00     200.00     -96.73        4.65
SRCPARAM AS25L304 1.0           174.47      20.00     200.00     -96.73        4.10
SRCPARAM AS25L305 1.0           179.85      20.00       6.98     -96.73        4.10
SRCPARAM AS25L340 1.0           185.45      20.00     195.13     -96.73        4.10
SRCPARAM AS25L341 1.0           185.53      20.00     200.00     -96.73        4.59
SRCPARAM AS25L342 1.0           195.09      20.00     188.40     -96.73        4.10
SRCPARAM AS25L377 1.0           201.04      20.00      37.23     -96.73        4.10
SRCPARAM AS25L378 1.0           203.63      20.00     200.00     -96.73        5.49
SRCPARAM AS25L379 1.0           206.24      20.00     200.00     -96.73        4.49
SRCPARAM AS25L380 1.0           215.57      20.00     169.82     -96.73        4.10
SRCPARAM AS25L415 1.0           222.22      20.00      79.34     -96.73        4.10
SRCPARAM AS25L416 1.0           223.12      20.00     200.00     -96.73        5.72
SRCPARAM AS25L417 1.0           227.09      20.00     200.00     -96.73        4.38
SRCPARAM AS25L418 1.0           236.06      20.00     151.24     -96.73        4.10
SRCPARAM AS25L453 1.0           243.39      20.00     121.44     -96.73        4.10
SRCPARAM AS25L454 1.0           243.22      20.00     200.00     -96.73        5.87
SRCPARAM AS25L455 1.0           247.94      20.00     200.00     -96.73        4.24
SRCPARAM AS25L456 1.0           256.54      20.00     132.66     -96.73        4.10
SRCPARAM AS25L491 1.0           264.57      20.00     163.55     -96.73        4.10
SRCPARAM AS25L492 1.0           263.44      20.00     200.00     -96.73        5.94
SRCPARAM AS25L493 1.0           268.80      20.00     200.00     -96.73        4.10
SRCPARAM AS25L494 1.0           277.02      20.00     114.08     -96.73        4.10
SRCPARAM AS25L528 1.0           280.16      20.00       5.65     -96.73        4.10
SRCPARAM AS25L529 1.0           285.90      20.00     200.00     -96.73        4.10
SRCPARAM AS25L530 1.0           283.86      20.00     200.00     -96.73        6.16
SRCPARAM AS25L531 1.0           289.90      20.00     200.00     -96.73        4.33
SRCPARAM AS25L532 1.0           299.90      20.00     187.04     -96.73        4.10
SRCPARAM QU24R001 1.0            12.00      20.00     123.57     169.51        4.10
SRCPARAM QU24R002 1.0            12.00      20.00     123.57     169.51        4.10
SRCPARAM RW06L001 1.0            12.00      20.00      49.43      83.26        4.10
SRCPARAM RW06L002 1.0            12.00      20.00      49.43      83.26        4.10
SRCPARAM RW06L003 1.0            12.00      20.00      49.43      83.26        4.10
SRCPARAM RW06L004 1.0            12.00      20.00      49.43      83.26        4.10
SRCPARAM RW06L005 1.0            12.00      20.00      49.43      83.26        4.10
SRCPARAM RW06L006 1.0            12.00      20.00      49.43      83.26        4.10
SRCPARAM RW06L007 1.0            12.00      20.00      49.43      83.26        4.10
SRCPARAM RW06L008 1.0            12.00      20.00      49.43      83.26        4.10
SRCPARAM RW06L009 1.0            12.00      20.00      49.43      83.26        4.10
SRCPARAM RW06L010 1.0            12.00      20.00      49.43      83.26        4.10
SRCPARAM RW06L011 1.0            12.00      20.00      49.43      83.26        4.10
SRCPARAM RW06L012 1.0            12.00      20.00      49.43      83.26        4.10
SRCPARAM RW06L013 1.0            12.00      20.00      49.43      83.26        4.10
SRCPARAM RW06L014 1.0            12.00      20.00      49.43      83.26        4.10
SRCPARAM RW06L015 1.0            12.00      20.00      49.43      83.26        4.10
SRCPARAM RW06L016 1.0            12.00      20.00      49.43      83.26        4.10
SRCPARAM RW06L017 1.0            12.00      20.00      49.43      83.26        4.10
SRCPARAM RW06L018 1.0            12.00      20.00      49.43      83.26        4.10
SRCPARAM RW06L019 1.0            12.00      20.00      49.43      83.26        4.10
SRCPARAM RW06L020 1.0            12.00      20.00      49.43      83.26        4.10
SRCPARAM RW06L021 1.0            12.00      20.00      49.43      83.26        4.10
SRCPARAM RW06L022 1.0            12.00      20.00      49.43      83.26        4.10
SRCPARAM RW06L023 1.0            12.00      20.00      49.43      83.26        4.10
SRCPARAM RW06L024 1.0            12.00      20.00      49.43      83.26        4.10
SRCPARAM RW06L025 1.0            12.00      20.00      49.43      83.26        4.10
SRCPARAM RW06L026 1.0            12.00      20.00      49.43      83.26        4.10
SRCPARAM RW06L027 1.0            12.00      20.00      49.43      83.26        4.10
SRCPARAM RW06L028 1.0            12.00      20.00      49.43      83.26        4.10
SRCPARAM RW06L029 1.0            12.00      20.00      49.43      83.26        4.10
SRCPARAM RW06L030 1.0            12.00      20.00      49.43      83.26        4.10
SRCPARAM RW06L031 1.0            12.00      20.00      49.43      83.26        4.10
SRCPARAM RW06L032 1.0            12.00      20.00      49.43      83.26        4.10
SRCPARAM RW06L033 1.0            12.00      20.00      49.43      83.26        4.10
SRCPARAM RW06L034 1.0            12.00      20.00      49.43      83.26        4.10
SRCPARAM RW06L035 1.0            12.00      20.00      49.43      83.26        4.10
SRCPARAM RW06L036 1.0            12.00      20.00      49.43      83.26        4.10
SRCPARAM RW06L037 1.0            12.00      20.00      49.43      83.26        4.10
SRCPARAM RW06L038 1.0            12.00      20.00      49.43      83.26        4.10
```

Table L.2-2
AERMOD Input File for 2003 Baseline Diesel PM Run

```
SRCPARAM RW06L039 1.0            12.00      20.00      49.43      83.26        4.10
SRCPARAM RW06L040 1.0            12.00      20.00      49.43      83.26        4.10
SRCPARAM RW06L041 1.0            12.00      20.00      49.43      83.26        4.10
SRCPARAM RW06L042 1.0            12.00      20.00      49.43      83.26        4.10
SRCPARAM RW06L043 1.0            12.00      20.00      49.43      83.26        4.10
SRCPARAM RW06L044 1.0            12.00      20.00      49.43      83.26        4.10
SRCPARAM RW06L045 1.0            12.00      20.00      49.43      83.26        4.10
SRCPARAM RW06L046 1.0            12.00      20.00      49.43      83.26        4.10
SRCPARAM RW06L047 1.0            12.00      20.00      49.43      83.26        4.10
SRCPARAM RW06L048 1.0            12.00      20.00      49.43      83.26        4.10
SRCPARAM RW06L049 1.0            12.00      20.00      49.43      83.26        4.10
SRCPARAM RW06L050 1.0            12.00      20.00      49.43      83.26        4.10
SRCPARAM RW06L051 1.0            12.00      20.00      49.43      83.26        4.10
SRCPARAM RW06L052 1.0            12.00      20.00      49.43      83.26        4.10
SRCPARAM RW06L053 1.0            12.00      20.00      49.43      83.26        4.10
SRCPARAM RW06L054 1.0            12.00      20.00      49.43      83.26        4.10
SRCPARAM RW06L055 1.0            12.00      20.00      49.43      83.26        4.10
SRCPARAM DS24R002 1.0            14.36      20.00      22.29     -96.74        4.10
SRCPARAM DS24R003 1.0            15.99      20.00     183.35     -96.74        4.10
SRCPARAM DS24R004 1.0            16.00      20.00     118.06     -96.74        4.10
SRCPARAM DS24R007 1.0            15.99      20.00     161.29     -96.74        4.10
SRCPARAM DS24R008 1.0            15.96      20.00     200.00     -96.74        4.10
SRCPARAM DS24R009 1.0            16.30      20.00     169.91     -96.74        4.20
SRCPARAM DS24R010 1.0            16.00      20.00      53.66     -96.74        4.10
SRCPARAM DS24R012 1.0            16.00      20.00      67.54     -96.74        4.10
SRCPARAM DS24R014 1.0            16.00      20.00     113.24     -96.74        4.10
SRCPARAM DS24R039 1.0            22.49      20.00     184.55     -96.74        4.52
SRCPARAM DS24R040 1.0            29.54      20.00     200.00     -96.74        4.91
SRCPARAM DS24R041 1.0            33.72      20.00      72.60     -96.74        4.10
SRCPARAM DS24R043 1.0            30.00      20.00     105.77     -96.74        4.10
SRCPARAM DS24R044 1.0            25.03      20.00     172.78     -96.74        4.32
SRCPARAM DS24R045 1.0            32.84      20.00     200.00     -96.74        5.17
SRCPARAM DS24R046 1.0            31.05      20.00     200.00     -96.74        4.49
SRCPARAM DS24R047 1.0            38.96      20.00      13.93     -96.74        4.10
SRCPARAM DS24R048 1.0            20.69      20.00      11.65     -96.74        4.10
SRCPARAM DS24R049 1.0            30.69      20.00     157.21     -96.74        4.10
SRCPARAM DS24R050 1.0            25.00      20.00      88.74     -96.74        4.19
SRCPARAM DS24R051 1.0            34.56      20.00      96.82     -96.74        4.25
SRCPARAM DS24R075 1.0            49.55      20.00      90.18     -96.74        4.10
SRCPARAM DS24R076 1.0            43.51      20.00     200.00     -96.74        4.20
SRCPARAM DS24R077 1.0            51.84      20.00     188.23     -96.74        4.44
SRCPARAM DS24R079 1.0            41.25      20.00      13.21     -96.74        4.10
SRCPARAM DS24R080 1.0            51.25      20.00      92.56     -96.74        4.10
SRCPARAM DS24R081 1.0            49.80      20.00     145.55     -96.74        4.21
SRCPARAM DS24R082 1.0            50.96      20.00     198.37     -96.74        4.58
SRCPARAM DS24R083 1.0            50.00      20.00     134.15     -96.74        4.10
SRCPARAM DS24R085 1.0            42.53      20.00      42.79     -96.74        4.10
SRCPARAM DS24R086 1.0            52.53      20.00     126.07     -96.74        4.10
SRCPARAM DS24R087 1.0            47.50      20.00     123.90     -96.74        4.10
SRCPARAM DS24R088 1.0            57.50      20.00      40.94     -96.74        4.10
SRCPARAM DS24R112 1.0            69.58      20.00     195.81     -96.74        4.38
SRCPARAM DS24R113 1.0            68.48      20.00     200.00     -96.74        5.17
SRCPARAM DS24R114 1.0            71.59      20.00     144.47     -96.74        4.17
SRCPARAM DS24R116 1.0            70.00      20.00     105.77     -96.74        4.10
SRCPARAM DS24R117 1.0            62.46      20.00      31.19     -96.74        4.20
SRCPARAM DS24R118 1.0            71.70      20.00     200.00     -96.74        4.35
SRCPARAM DS24R119 1.0            69.38      20.00     200.00     -96.74        4.76
SRCPARAM DS24R120 1.0            73.87      20.00      82.24     -96.74        4.10
SRCPARAM DS24R122 1.0            64.38      20.00      73.93     -96.74        4.10
SRCPARAM DS24R123 1.0            74.38      20.00      94.93     -96.74        4.10
SRCPARAM DS24R124 1.0            69.74      20.00     164.92     -96.74        4.10
SRCPARAM DS24R125 1.0            79.65      20.00       5.78     -96.74        4.10
SRCPARAM DS24R148 1.0            90.00      20.00      94.37     -96.74        4.10
SRCPARAM DS24R149 1.0            86.19      20.00     143.56     -96.74        4.10
SRCPARAM DS24R150 1.0            90.17      20.00     200.00     -96.74        5.98
SRCPARAM DS24R151 1.0            95.50      20.00      80.78     -96.74        4.61
SRCPARAM DS24R152 1.0            80.16      20.00       2.00     -96.74        4.10
SRCPARAM DS24R153 1.0            90.16      20.00     104.11     -96.74        4.10
SRCPARAM DS24R154 1.0            88.24      20.00     134.44     -96.74        4.43
SRCPARAM DS24R155 1.0            93.35      20.00     200.00     -96.74        6.09
SRCPARAM DS24R156 1.0            91.47      20.00     200.00     -96.74        5.53
```

Table L.2-2
AERMOD Input File for 2003 Baseline Diesel PM Run

```
SRCPARAM DS24R157 1.0          98.77      20.00     39.73      -96.74        4.10
SRCPARAM DS24R159 1.0          86.22      20.00    105.07      -96.74        4.10
SRCPARAM DS24R160 1.0          94.21      20.00    200.00      -96.74        6.45
SRCPARAM DS24R161 1.0          90.42      20.00    170.62      -96.74        4.18
SRCPARAM DS24R184 1.0         100.75      20.00      7.08      -96.74        4.10
SRCPARAM DS24R185 1.0         110.22      20.00    200.00      -96.74        4.38
SRCPARAM DS24R186 1.0         110.00      20.00    124.17      -96.74        4.10
SRCPARAM DS24R187 1.0         109.68      20.00    180.53      -96.74        4.13
SRCPARAM DS24R188 1.0         118.96      20.00     13.80      -96.74        4.10
SRCPARAM DS24R189 1.0         108.98      20.00     95.89      -96.74        4.10
SRCPARAM DS24R190 1.0         104.50      20.00    200.00      -96.74        5.05
SRCPARAM DS24R191 1.0         110.98      20.00    183.54      -96.74        4.44
SRCPARAM DS24R192 1.0         110.00      20.00    160.91      -96.74        4.10
SRCPARAM DS24R193 1.0         109.97      20.00    183.60      -96.74        4.11
SRCPARAM DS24R194 1.0         116.33      20.00     92.86      -96.74        4.10
SRCPARAM DS24R196 1.0         108.07      20.00    136.21      -96.74        4.10
SRCPARAM DS24R197 1.0         109.05      20.00    200.00      -96.74        7.92
SRCPARAM DS24R198 1.0         112.39      20.00    135.45      -96.74        4.39
SRCPARAM DS24R221 1.0         130.00      20.00     94.37      -96.74        4.10
SRCPARAM DS24R222 1.0         128.44      20.00    161.49      -96.74        4.10
SRCPARAM DS24R223 1.0         128.93      20.00    200.00      -96.74        6.95
SRCPARAM DS24R224 1.0         132.63      20.00    146.82      -96.74        4.97
SRCPARAM DS24R226 1.0         130.00      20.00    107.25      -96.74        4.10
SRCPARAM DS24R227 1.0         127.69      20.00    140.95      -96.74        5.37
SRCPARAM DS24R228 1.0         131.48      20.00    200.00      -96.74        4.82
SRCPARAM DS24R229 1.0         131.42      20.00    200.00      -96.74        6.34
SRCPARAM DS24R230 1.0         133.61      20.00    200.00      -96.74        4.18
SRCPARAM DS24R231 1.0         134.23      20.00    145.99      -96.74        4.10
SRCPARAM DS24R233 1.0         129.91      20.00    167.35      -96.74        4.10
SRCPARAM DS24R234 1.0         126.94      20.00    200.00      -96.74        5.30
SRCPARAM DS24R235 1.0         133.92      20.00    100.29      -96.74        4.10
SRCPARAM DS24R257 1.0         141.94      20.00     18.35      -96.74        4.10
SRCPARAM DS24R258 1.0         151.30      20.00    200.00      -96.74        4.37
SRCPARAM DS24R259 1.0         150.00      20.00    103.89      -96.74        4.10
SRCPARAM DS24R260 1.0         149.00      20.00    149.29      -96.74        4.67
SRCPARAM DS24R261 1.0         154.00      20.00     79.85      -96.74        4.10
SRCPARAM DS24R262 1.0         147.61      20.00     81.64      -96.74        4.10
SRCPARAM DS24R263 1.0         145.55      20.00    200.00      -96.74        5.35
SRCPARAM DS24R264 1.0         149.93      20.00    200.00      -96.74        4.97
SRCPARAM DS24R265 1.0         153.43      20.00    192.88      -96.74        5.77
SRCPARAM DS24R266 1.0         148.59      20.00    115.30      -96.74        4.10
SRCPARAM DS24R267 1.0         158.32      20.00    200.00      -96.74        4.61
SRCPARAM DS24R268 1.0         152.13      20.00    199.12      -96.74        4.10
SRCPARAM DS24R270 1.0         149.75      20.00    198.49      -96.74        4.36
SRCPARAM DS24R271 1.0         147.70      20.00    200.00      -96.74        4.69
SRCPARAM DS24R272 1.0         156.05      20.00     65.13      -96.74        4.10
SRCPARAM DS24R294 1.0         170.00      20.00     94.37      -96.74        4.10
SRCPARAM DS24R295 1.0         170.00      20.00    173.18      -96.74        4.10
SRCPARAM DS24R296 1.0         162.91      20.00     33.66      -96.74        4.10
SRCPARAM DS24R297 1.0         171.40      20.00    200.00      -96.74        4.51
SRCPARAM DS24R298 1.0         179.03      20.00     12.87      -96.74        4.10
SRCPARAM DS24R299 1.0         170.00      20.00    107.25      -96.74        4.10
SRCPARAM DS24R300 1.0         170.00      20.00     96.75      -96.74        4.10
SRCPARAM DS24R301 1.0         169.59      20.00    187.04      -96.74        4.43
SRCPARAM DS24R302 1.0         172.29      20.00     95.46      -96.74        4.17
SRCPARAM DS24R303 1.0         170.00      20.00    134.15      -96.74        4.10
SRCPARAM DS24R304 1.0         160.03      20.00      2.00      -96.74        4.10
SRCPARAM DS24R305 1.0         167.97      20.00    200.00      -96.74        4.10
SRCPARAM DS24R306 1.0         162.65      20.00    200.00      -96.74        5.53
SRCPARAM DS24R307 1.0         170.65      20.00    200.00      -96.74        4.76
SRCPARAM DS24R308 1.0         169.36      20.00    200.00      -96.74        4.88
SRCPARAM DS24R309 1.0         178.18      20.00     29.97      -96.74        4.10
SRCPARAM DS24R330 1.0         183.14      20.00     29.62      -96.74        4.10
SRCPARAM DS24R331 1.0         181.84      20.00    200.00      -96.74        5.40
SRCPARAM DS24R332 1.0         190.70      20.00     83.61      -96.74        4.10
SRCPARAM DS24R333 1.0         190.00      20.00    115.62      -96.74        4.10
SRCPARAM DS24R334 1.0         190.00      20.00    133.02      -96.74        4.10
SRCPARAM DS24R335 1.0         186.26      20.00     67.14      -96.74        4.10
SRCPARAM DS24R336 1.0         186.34      20.00    200.00      -96.74        5.27
SRCPARAM DS24R337 1.0         188.53      20.00    200.00      -96.74        6.82
SRCPARAM DS24R338 1.0         192.79      20.00    198.04      -96.74        4.50
```

Table L.2-2
AERMOD Input File for 2003 Baseline Diesel PM Run

```
SRCPARAM DS24R339 1.0           183.50      20.00      46.99     -96.74        4.10
SRCPARAM DS24R340 1.0           193.50      20.00      87.17     -96.74        4.10
SRCPARAM DS24R342 1.0           185.84      20.00     147.75     -96.74        4.10
SRCPARAM DS24R343 1.0           184.27      20.00     200.00     -96.74        4.96
SRCPARAM DS24R344 1.0           192.34      20.00     200.00     -96.74        4.47
SRCPARAM DS24R345 1.0           190.07      20.00     194.81     -96.74        4.18
SRCPARAM DS24R367 1.0           210.00      20.00      94.37     -96.74        4.10
SRCPARAM DS24R368 1.0           210.00      20.00     170.83     -96.74        4.10
SRCPARAM DS24R369 1.0           200.21      20.00       2.42     -96.74        4.10
SRCPARAM DS24R370 1.0           209.15      20.00     200.00     -96.74        4.71
SRCPARAM DS24R371 1.0           214.07      20.00      78.92     -96.74        4.10
SRCPARAM DS24R372 1.0           210.00      20.00     107.25     -96.74        4.10
SRCPARAM DS24R373 1.0           210.00      20.00      96.75     -96.74        4.10
SRCPARAM DS24R374 1.0           209.40      20.00     157.61     -96.74        4.15
SRCPARAM DS24R375 1.0           211.91      20.00     112.17     -96.74        5.46
SRCPARAM DS24R376 1.0           208.41      20.00     112.83     -96.74        4.10
SRCPARAM DS24R377 1.0           218.41      20.00      21.32     -96.74        4.10
SRCPARAM DS24R379 1.0           203.74      20.00      94.63     -96.74        4.10
SRCPARAM DS24R380 1.0           205.89      20.00     200.00     -96.74        4.51
SRCPARAM DS24R381 1.0           212.73      20.00     200.00     -96.74        5.43
SRCPARAM DS24R382 1.0           210.31      20.00     159.64     -96.74        4.10
SRCPARAM DS24R403 1.0           224.33      20.00      40.89     -96.74        4.10
SRCPARAM DS24R404 1.0           223.18      20.00     200.00     -96.74        4.37
SRCPARAM DS24R405 1.0           232.95      20.00      63.33     -96.74        4.10
SRCPARAM DS24R406 1.0           227.51      20.00      86.80     -96.74        4.10
SRCPARAM DS24R407 1.0           232.08      20.00     200.00     -96.74        5.74
SRCPARAM DS24R408 1.0           225.94      20.00     200.00     -96.74        5.52
SRCPARAM DS24R409 1.0           226.98      20.00     200.00     -96.74        5.02
SRCPARAM DS24R410 1.0           234.16      20.00     200.00     -96.74        5.92
SRCPARAM DS24R411 1.0           229.88      20.00     200.00     -96.74        4.28
SRCPARAM DS24R412 1.0           237.74      20.00      26.40     -96.74        4.11
SRCPARAM DS24R413 1.0           230.00      20.00     134.15     -96.74        4.10
SRCPARAM DS24R416 1.0           221.64      20.00      41.50     -96.74        4.10
SRCPARAM DS24R417 1.0           227.00      20.00     200.00     -96.74        4.33
SRCPARAM DS24R418 1.0           231.57      20.00     200.00     -96.74        7.71
SRCPARAM DS24R419 1.0           232.45      20.00     124.48     -96.74        4.10
SRCPARAM DS24R440 1.0           249.74      20.00     146.52     -96.74        4.34
SRCPARAM DS24R441 1.0           250.00      20.00     153.19     -96.74        4.10
SRCPARAM DS24R443 1.0           250.00      20.00     115.62     -96.74        4.10
SRCPARAM DS24R444 1.0           250.00      20.00     133.02     -96.74        4.10
SRCPARAM DS24R445 1.0           250.00      20.00     107.25     -96.74        4.10
SRCPARAM DS24R446 1.0           250.00      20.00      96.75     -96.74        4.10
SRCPARAM DS24R447 1.0           245.91      20.00     128.18     -96.74        4.54
SRCPARAM DS24R448 1.0           253.23      20.00     140.63     -96.74        4.74
SRCPARAM DS24R449 1.0           243.32      20.00      44.53     -96.74        4.10
SRCPARAM DS24R450 1.0           253.32      20.00      89.63     -96.74        4.10
SRCPARAM DS24R454 1.0           248.99      20.00     188.37     -96.74        4.11
SRCPARAM DS24R455 1.0           248.14      20.00     200.00     -96.74        7.42
SRCPARAM DS24R456 1.0           254.58      20.00      89.32     -96.74        4.10
SRCPARAM DS24R476 1.0           265.53      20.00      52.15     -96.74        4.10
SRCPARAM DS24R477 1.0           265.30      20.00     200.00     -96.74        4.20
SRCPARAM DS24R478 1.0           275.21      20.00      43.05     -96.74        4.10
SRCPARAM DS24R479 1.0           264.80      20.00      55.55     -96.74        4.10
SRCPARAM DS24R480 1.0           271.77      20.00     200.00     -96.74        6.32
SRCPARAM DS24R481 1.0           267.94      20.00     200.00     -96.74        6.63
SRCPARAM DS24R482 1.0           267.51      20.00     200.00     -96.74        4.73
SRCPARAM DS24R483 1.0           275.67      20.00     200.00     -96.74        5.49
SRCPARAM DS24R484 1.0           269.61      20.00     200.00     -96.74        4.36
SRCPARAM DS24R485 1.0           275.32      20.00      54.85     -96.74        4.16
SRCPARAM DS24R486 1.0           268.23      20.00     110.37     -96.74        4.10
SRCPARAM DS24R487 1.0           278.23      20.00      23.78     -96.74        4.10
SRCPARAM DS24R491 1.0           269.91      20.00     185.33     -96.74        4.15
SRCPARAM DS24R492 1.0           267.03      20.00     200.00     -96.74        4.41
SRCPARAM DS24R493 1.0           276.71      20.00      54.16     -96.74        4.10
SRCPARAM DS24R513 1.0           291.94      20.00     157.79     -96.74        4.54
SRCPARAM DS24R514 1.0           292.40      20.00     154.47     -96.74        4.10
SRCPARAM DS24R516 1.0           292.10      20.00     139.93     -96.74        4.10
SRCPARAM DS24R517 1.0           290.11      20.00     200.00     -96.74        5.50
SRCPARAM DS24R518 1.0           293.16      20.00     200.00     -96.74        4.99
SRCPARAM DS24R519 1.0           292.43      20.00     152.98     -96.74        4.14
SRCPARAM DS24R520 1.0           285.58      20.00      98.75     -96.74        5.65
```

Table L.2-2
AERMOD Input File for 2003 Baseline Diesel PM Run

```
SRCPARAM DS24R521 1.0           293.08      20.00     196.49     -96.74        4.32
SRCPARAM DS24R523 1.0           292.40      20.00     166.35     -96.74        4.10
SRCPARAM DS24R527 1.0           282.11      20.00      44.15     -96.74        4.25
SRCPARAM DS24R528 1.0           293.71      20.00     200.00     -96.74        4.34
SRCPARAM DS24R529 1.0           289.10      20.00     200.00     -96.74        4.26
SRCPARAM DS24R530 1.0           301.29      20.00      58.56     -96.74        4.11
SRCPARAM AS24R001 1.0            16.00      20.00     152.66     -96.74        4.10
SRCPARAM AS24R037 1.0            21.25      20.00      57.60     -96.74        4.10
SRCPARAM AS24R038 1.0            27.74      20.00     200.00     -96.74        4.10
SRCPARAM AS24R039 1.0            36.49      20.00     136.68     -96.74        4.10
SRCPARAM AS24R075 1.0            41.74      20.00     100.39     -96.74        4.10
SRCPARAM AS24R076 1.0            48.72      20.00     200.00     -96.74        4.11
SRCPARAM AS24R077 1.0            56.97      20.00     118.47     -96.74        4.10
SRCPARAM AS24R113 1.0            62.24      20.00     142.50     -96.74        4.11
SRCPARAM AS24R114 1.0            69.70      20.00     200.00     -96.74        4.13
SRCPARAM AS24R115 1.0            77.45      20.00      99.89     -96.74        4.10
SRCPARAM AS24R151 1.0            82.75      20.00     184.60     -96.74        4.12
SRCPARAM AS24R152 1.0            90.66      20.00     200.00     -96.74        4.13
SRCPARAM AS24R153 1.0            97.93      20.00      81.31     -96.74        4.10
SRCPARAM AS24R188 1.0           100.75      20.00      26.71     -96.74        4.10
SRCPARAM AS24R189 1.0           103.26      20.00     200.00     -96.74        4.14
SRCPARAM AS24R190 1.0           111.62      20.00     200.00     -96.74        4.13
SRCPARAM AS24R191 1.0           118.41      20.00      62.73     -96.74        4.10
SRCPARAM AS24R226 1.0           121.92      20.00      68.81     -96.74        4.10
SRCPARAM AS24R227 1.0           123.76      20.00     200.00     -96.74        4.18
SRCPARAM AS24R228 1.0           132.57      20.00     200.00     -96.74        4.12
SRCPARAM AS24R229 1.0           138.89      20.00      44.14     -96.74        4.10
SRCPARAM AS24R264 1.0           143.10      20.00     110.92     -96.74        4.10
SRCPARAM AS24R265 1.0           144.26      20.00     200.00     -96.74        4.22
SRCPARAM AS24R266 1.0           153.52      20.00     200.00     -96.74        4.11
SRCPARAM AS24R267 1.0           159.37      20.00      25.56     -96.74        4.10
SRCPARAM AS24R302 1.0           164.28      20.00     153.02     -96.74        4.10
SRCPARAM AS24R303 1.0           164.76      20.00     200.00     -96.74        4.27
SRCPARAM AS24R304 1.0           174.46      20.00     200.00     -96.74        4.10
SRCPARAM AS24R305 1.0           179.85      20.00       6.98     -96.74        4.10
SRCPARAM AS24R340 1.0           185.45      20.00     195.13     -96.74        4.10
SRCPARAM AS24R341 1.0           185.21      20.00     200.00     -96.74        4.25
SRCPARAM AS24R342 1.0           195.09      20.00     188.40     -96.74        4.10
SRCPARAM AS24R377 1.0           201.04      20.00      37.23     -96.74        4.10
SRCPARAM AS24R378 1.0           201.67      20.00     200.00     -96.74        4.98
SRCPARAM AS24R379 1.0           206.00      20.00     200.00     -96.74        4.22
SRCPARAM AS24R380 1.0           215.57      20.00     169.82     -96.74        4.10
SRCPARAM AS24R415 1.0           222.22      20.00      79.34     -96.74        4.10
SRCPARAM AS24R416 1.0           221.59      20.00     200.00     -96.74        4.83
SRCPARAM AS24R417 1.0           226.93      20.00     200.00     -96.74        4.18
SRCPARAM AS24R418 1.0           236.06      20.00     151.24     -96.74        4.10
SRCPARAM AS24R453 1.0           243.39      20.00     121.44     -96.74        4.10
SRCPARAM AS24R454 1.0           241.90      20.00     200.00     -96.74        4.81
SRCPARAM AS24R455 1.0           247.86      20.00     200.00     -96.74        4.14
SRCPARAM AS24R456 1.0           256.54      20.00     132.66     -96.74        4.10
SRCPARAM AS24R491 1.0           264.57      20.00     163.55     -96.74        4.10
SRCPARAM AS24R492 1.0           262.28      20.00     200.00     -96.74        4.79
SRCPARAM AS24R493 1.0           268.80      20.00     200.00     -96.74        4.10
SRCPARAM AS24R494 1.0           277.02      20.00     114.08     -96.74        4.10
SRCPARAM AS24R528 1.0           280.16      20.00       5.65     -96.74        4.10
SRCPARAM AS24R529 1.0           285.90      20.00     200.00     -96.74        4.10
SRCPARAM AS24R530 1.0           282.73      20.00     200.00     -96.74        4.86
SRCPARAM AS24R531 1.0           289.80      20.00     200.00     -96.74        4.16
SRCPARAM AS24R532 1.0           299.90      20.00     187.04     -96.74        4.10
SRCPARAM QU24L001 1.0            12.00      20.00     170.08    -106.11        4.10
SRCPARAM QU24L002 1.0            12.00      20.00     170.08    -106.11        4.10
SRCPARAM QU24L003 1.0            12.00      20.00     170.08    -106.11        4.10
SRCPARAM QU24L004 1.0            12.00      20.00     170.08    -106.11        4.10
SRCPARAM QU24L005 1.0            12.00      20.00     170.08    -106.11        4.10
SRCPARAM RW06R001 1.0            12.00      20.00      49.73      83.24        4.10
SRCPARAM RW06R002 1.0            12.00      20.00      49.73      83.24        4.10
SRCPARAM RW06R003 1.0            12.00      20.00      49.73      83.24        4.10
SRCPARAM RW06R004 1.0            12.00      20.00      49.73      83.24        4.10
SRCPARAM RW06R005 1.0            12.00      20.00      49.73      83.24        4.10
SRCPARAM RW06R006 1.0            12.00      20.00      49.73      83.24        4.10
SRCPARAM RW06R007 1.0            12.00      20.00      49.73      83.24        4.10
```

Table L.2-2
AERMOD Input File for 2003 Baseline Diesel PM Run

```
SRCPARAM RW06R008 1.0           12.00      20.00      49.73      83.24        4.10
SRCPARAM RW06R009 1.0           12.00      20.00      49.73      83.24        4.10
SRCPARAM RW06R010 1.0           12.00      20.00      49.73      83.24        4.10
SRCPARAM RW06R011 1.0           12.00      20.00      49.73      83.24        4.10
SRCPARAM RW06R012 1.0           12.00      20.00      49.73      83.24        4.10
SRCPARAM RW06R013 1.0           12.00      20.00      49.73      83.24        4.10
SRCPARAM RW06R014 1.0           12.00      20.00      49.73      83.24        4.10
SRCPARAM RW06R015 1.0           12.00      20.00      49.73      83.24        4.10
SRCPARAM RW06R016 1.0           12.00      20.00      49.73      83.24        4.10
SRCPARAM RW06R017 1.0           12.00      20.00      49.73      83.24        4.10
SRCPARAM RW06R018 1.0           12.00      20.00      49.73      83.24        4.10
SRCPARAM RW06R019 1.0           12.00      20.00      49.73      83.24        4.10
SRCPARAM RW06R020 1.0           12.00      20.00      49.73      83.24        4.10
SRCPARAM RW06R021 1.0           12.00      20.00      49.73      83.24        4.10
SRCPARAM RW06R022 1.0           12.00      20.00      49.73      83.24        4.10
SRCPARAM RW06R023 1.0           12.00      20.00      49.73      83.24        4.10
SRCPARAM RW06R024 1.0           12.00      20.00      49.73      83.24        4.10
SRCPARAM RW06R025 1.0           12.00      20.00      49.73      83.24        4.10
SRCPARAM RW06R026 1.0           12.00      20.00      49.73      83.24        4.10
SRCPARAM RW06R027 1.0           12.00      20.00      49.73      83.24        4.10
SRCPARAM RW06R028 1.0           12.00      20.00      49.73      83.24        4.10
SRCPARAM RW06R029 1.0           12.00      20.00      49.73      83.24        4.10
SRCPARAM RW06R030 1.0           12.00      20.00      49.73      83.24        4.10
SRCPARAM RW06R031 1.0           12.00      20.00      49.73      83.24        4.10
SRCPARAM RW06R032 1.0           12.00      20.00      49.73      83.24        4.10
SRCPARAM RW06R033 1.0           12.00      20.00      49.73      83.24        4.10
SRCPARAM RW06R034 1.0           12.00      20.00      49.73      83.24        4.10
SRCPARAM RW06R035 1.0           12.00      20.00      49.73      83.24        4.10
SRCPARAM RW06R036 1.0           12.00      20.00      49.73      83.24        4.10
SRCPARAM RW06R037 1.0           12.00      20.00      49.73      83.24        4.10
SRCPARAM RW06R038 1.0           12.00      20.00      49.73      83.24        4.10
SRCPARAM RW06R039 1.0           12.00      20.00      49.73      83.24        4.10
SRCPARAM RW06R040 1.0           12.00      20.00      49.73      83.24        4.10
SRCPARAM RW06R041 1.0           12.00      20.00      49.73      83.24        4.10
SRCPARAM RW06R042 1.0           12.00      20.00      49.73      83.24        4.10
SRCPARAM RW06R043 1.0           12.00      20.00      49.73      83.24        4.10
SRCPARAM RW06R044 1.0           12.00      20.00      49.73      83.24        4.10
SRCPARAM RW06R045 1.0           12.00      20.00      49.73      83.24        4.10
SRCPARAM RW06R046 1.0           12.00      20.00      49.73      83.24        4.10
SRCPARAM RW06R047 1.0           12.00      20.00      49.73      83.24        4.10
SRCPARAM RW06R048 1.0           12.00      20.00      49.73      83.24        4.10
SRCPARAM RW06R049 1.0           12.00      20.00      49.73      83.24        4.10
SRCPARAM RW06R050 1.0           12.00      20.00      49.73      83.24        4.10
SRCPARAM RW06R051 1.0           12.00      20.00      49.73      83.24        4.10
SRCPARAM RW06R052 1.0           12.00      20.00      49.73      83.24        4.10
SRCPARAM RW06R053 1.0           12.00      20.00      49.73      83.24        4.10
SRCPARAM RW06R054 1.0           12.00      20.00      49.73      83.24        4.10
SRCPARAM RW06R055 1.0           12.00      20.00      49.73      83.24        4.10
SRCPARAM RW06R056 1.0           12.00      20.00      49.73      83.24        4.10
SRCPARAM RW06R057 1.0           12.00      20.00      49.73      83.24        4.10
SRCPARAM RW06R058 1.0           12.00      20.00      49.73      83.24        4.10
SRCPARAM RW06R059 1.0           12.00      20.00      49.73      83.24        4.10
SRCPARAM RW06R060 1.0           12.00      20.00      49.73      83.24        4.10
SRCPARAM RW06R061 1.0           12.00      20.00      49.73      83.24        4.10
SRCPARAM RW06R062 1.0           12.00      20.00      49.73      83.24        4.10
SRCPARAM RW06R063 1.0           12.00      20.00      49.73      83.24        4.10
SRCPARAM DS24L002 1.0           14.31      20.00      30.92     -96.76        4.10
SRCPARAM DS24L003 1.0           16.26      20.00     183.35     -96.76        4.17
SRCPARAM DS24L004 1.0           16.00      20.00     118.06     -96.76        4.10
SRCPARAM DS24L007 1.0           16.00      20.00     161.29     -96.76        4.10
SRCPARAM DS24L008 1.0           15.72      20.00     200.00     -96.76        4.11
SRCPARAM DS24L009 1.0           17.08      20.00     200.00     -96.76        4.38
SRCPARAM DS24L010 1.0           16.00      20.00     200.00     -96.76        4.10
SRCPARAM DS24L011 1.0           15.99      20.00     200.00     -96.76        4.10
SRCPARAM DS24L012 1.0           13.58      20.00     200.00     -96.76        4.22
SRCPARAM DS24L013 1.0           17.34      20.00      45.07     -96.76        4.10
SRCPARAM DS24L014 1.0           16.00      20.00     122.02     -96.76        4.10
SRCPARAM DS24L015 1.0           15.87      20.00     168.19     -96.76        4.15
SRCPARAM DS24L016 1.0           16.94      20.00      58.49     -96.76        4.10
SRCPARAM DS24L039 1.0           26.96      20.00     184.55     -96.76        5.64
SRCPARAM DS24L040 1.0           29.21      20.00     200.00     -96.76        4.89
```

Table L.2-2
AERMOD Input File for 2003 Baseline Diesel PM Run

```
SRCPARAM DS24L041 1.0           33.72      20.00      72.60      -96.76       4.10
SRCPARAM DS24L043 1.0           30.00      20.00     105.77      -96.76       4.10
SRCPARAM DS24L044 1.0           22.59      20.00     172.78      -96.76       4.14
SRCPARAM DS24L045 1.0           30.58      20.00     200.00      -96.76       4.61
SRCPARAM DS24L046 1.0           29.89      20.00     200.00      -96.76       4.73
SRCPARAM DS24L047 1.0           29.05      20.00     200.00      -96.76       5.88
SRCPARAM DS24L048 1.0           35.84      20.00     200.00      -96.76       4.22
SRCPARAM DS24L049 1.0           29.23      20.00     200.00      -96.76       4.18
SRCPARAM DS24L050 1.0           25.89      20.00     200.00      -96.76       5.62
SRCPARAM DS24L051 1.0           27.55      20.00     200.00      -96.76       5.12
SRCPARAM DS24L052 1.0           33.69      20.00     200.00      -96.76       5.68
SRCPARAM DS24L053 1.0           37.42      20.00      49.23      -96.76       4.10
SRCPARAM DS24L075 1.0           45.31      20.00      90.18      -96.76       5.08
SRCPARAM DS24L076 1.0           44.89      20.00     200.00      -96.76       5.24
SRCPARAM DS24L077 1.0           51.83      20.00     188.23      -96.76       4.48
SRCPARAM DS24L079 1.0           41.25      20.00      13.21      -96.76       4.10
SRCPARAM DS24L080 1.0           51.25      20.00      92.56      -96.76       4.10
SRCPARAM DS24L081 1.0           48.91      20.00     165.80      -96.76       4.33
SRCPARAM DS24L082 1.0           52.92      20.00     200.00      -96.76       5.40
SRCPARAM DS24L083 1.0           49.35      20.00     200.00      -96.76       4.38
SRCPARAM DS24L084 1.0           50.74      20.00     200.00      -96.76       4.53
SRCPARAM DS24L085 1.0           44.95      20.00     200.00      -96.76       4.88
SRCPARAM DS24L086 1.0           50.08      20.00     184.29      -96.76       4.14
SRCPARAM DS24L087 1.0           46.88      20.00     123.90      -96.76       4.34
SRCPARAM DS24L088 1.0           48.98      20.00     200.00      -96.76       4.62
SRCPARAM DS24L089 1.0           53.20      20.00     200.00      -96.76       6.59
SRCPARAM DS24L090 1.0           57.90      20.00      39.96      -96.76       4.10
SRCPARAM DS24L112 1.0           68.40      20.00     195.81      -96.76       4.17
SRCPARAM DS24L113 1.0           69.03      20.00     200.00      -96.76       5.10
SRCPARAM DS24L114 1.0           71.40      20.00     144.47      -96.76       4.15
SRCPARAM DS24L116 1.0           70.00      20.00     105.77      -96.76       4.10
SRCPARAM DS24L117 1.0           63.22      20.00      48.05      -96.76       4.10
SRCPARAM DS24L118 1.0           71.06      20.00     200.00      -96.76       4.47
SRCPARAM DS24L119 1.0           68.10      20.00     200.00      -96.76       5.14
SRCPARAM DS24L120 1.0           70.76      20.00     200.00      -96.76       5.87
SRCPARAM DS24L121 1.0           72.00      20.00     190.86      -96.76       4.12
SRCPARAM DS24L122 1.0           61.08      20.00      65.32      -96.76       4.13
SRCPARAM DS24L123 1.0           70.97      20.00     176.89      -96.76       4.11
SRCPARAM DS24L124 1.0           68.96      20.00     164.92      -96.76       4.60
SRCPARAM DS24L125 1.0           70.16      20.00     200.00      -96.76       4.21
SRCPARAM DS24L126 1.0           68.58      20.00     200.00      -96.76       4.17
SRCPARAM DS24L127 1.0           78.39      20.00      30.70      -96.76       4.10
SRCPARAM DS24L148 1.0           90.00      20.00      94.37      -96.76       4.10
SRCPARAM DS24L149 1.0           86.72      20.00     174.40      -96.76       4.31
SRCPARAM DS24L150 1.0           90.70      20.00     200.00      -96.76       5.87
SRCPARAM DS24L151 1.0           96.13      20.00      80.78      -96.76       4.65
SRCPARAM DS24L152 1.0           80.16      20.00       2.00      -96.76       4.10
SRCPARAM DS24L153 1.0           90.16      20.00     104.11      -96.76       4.10
SRCPARAM DS24L154 1.0           88.51      20.00     134.44      -96.76       4.58
SRCPARAM DS24L155 1.0           92.28      20.00     200.00      -96.76       5.75
SRCPARAM DS24L156 1.0           89.92      20.00     200.00      -96.76       5.27
SRCPARAM DS24L157 1.0           89.87      20.00     200.00      -96.76       5.27
SRCPARAM DS24L158 1.0           98.00      20.00     152.31      -96.76       4.12
SRCPARAM DS24L159 1.0           82.70      20.00      46.11      -96.76       4.10
SRCPARAM DS24L160 1.0           91.85      20.00     200.00      -96.76       4.98
SRCPARAM DS24L161 1.0           87.47      20.00     200.00      -96.76       5.96
SRCPARAM DS24L162 1.0           90.59      20.00     200.00      -96.76       4.15
SRCPARAM DS24L163 1.0           89.05      20.00     200.00      -96.76       4.18
SRCPARAM DS24L164 1.0           98.88      20.00      21.44      -96.76       4.10
SRCPARAM DS24L184 1.0          100.75      20.00       7.08      -96.76       4.10
SRCPARAM DS24L185 1.0          105.63      20.00     200.00      -96.76       5.49
SRCPARAM DS24L186 1.0          110.20      20.00     124.17      -96.76       4.17
SRCPARAM DS24L187 1.0          109.79      20.00     180.53      -96.76       4.12
SRCPARAM DS24L188 1.0          118.96      20.00      13.80      -96.76       4.10
SRCPARAM DS24L189 1.0          108.98      20.00      95.89      -96.76       4.10
SRCPARAM DS24L190 1.0          104.80      20.00     200.00      -96.76       5.44
SRCPARAM DS24L191 1.0          111.27      20.00     183.54      -96.76       4.49
SRCPARAM DS24L192 1.0          110.00      20.00     160.91      -96.76       4.10
SRCPARAM DS24L193 1.0          109.34      20.00     183.60      -96.76       4.40
SRCPARAM DS24L194 1.0          110.73      20.00     200.00      -96.76       4.50
SRCPARAM DS24L195 1.0          112.95      20.00     113.77      -96.76       4.10
```

Table L.2-2
AERMOD Input File for 2003 Baseline Diesel PM Run

```
SRCPARAM DS24L196 1.0          104.51      20.00      76.50      -96.76        4.10
SRCPARAM DS24L197 1.0          109.74      20.00     200.00      -96.76        6.82
SRCPARAM DS24L198 1.0          105.49      20.00     200.00      -96.76        6.04
SRCPARAM DS24L199 1.0          112.60      20.00     200.00      -96.76        4.15
SRCPARAM DS24L200 1.0          109.53      20.00     200.00      -96.76        4.19
SRCPARAM DS24L201 1.0          119.36      20.00      12.18      -96.76        4.10
SRCPARAM DS24L221 1.0          130.00      20.00      94.37      -96.76        4.10
SRCPARAM DS24L222 1.0          128.39      20.00     161.49      -96.76        4.10
SRCPARAM DS24L223 1.0          129.39      20.00     200.00      -96.76        7.12
SRCPARAM DS24L224 1.0          133.44      20.00     146.82      -96.76        4.93
SRCPARAM DS24L226 1.0          130.00      20.00     107.25      -96.76        4.10
SRCPARAM DS24L227 1.0          128.55      20.00     140.95      -96.76        4.69
SRCPARAM DS24L228 1.0          131.34      20.00     200.00      -96.76        5.68
SRCPARAM DS24L229 1.0          129.03      20.00     200.00      -96.76        6.86
SRCPARAM DS24L230 1.0          130.07      20.00     200.00      -96.76        5.78
SRCPARAM DS24L231 1.0          134.09      20.00     200.00      -96.76        4.12
SRCPARAM DS24L232 1.0          135.34      20.00      75.22      -96.76        4.10
SRCPARAM DS24L233 1.0          126.30      20.00     106.89      -96.76        4.10
SRCPARAM DS24L234 1.0          129.26      20.00     200.00      -96.76        6.65
SRCPARAM DS24L235 1.0          126.01      20.00     200.00      -96.76        5.20
SRCPARAM DS24L236 1.0          134.49      20.00     200.00      -96.76        4.27
SRCPARAM DS24L237 1.0          129.99      20.00     200.00      -96.76        4.19
SRCPARAM DS24L238 1.0          139.85      20.00       2.92      -96.76        4.10
SRCPARAM DS24L257 1.0          141.94      20.00      18.35      -96.76        4.10
SRCPARAM DS24L258 1.0          151.76      20.00     200.00      -96.76        4.19
SRCPARAM DS24L259 1.0          150.00      20.00     162.68      -96.76        4.10
SRCPARAM DS24L260 1.0          149.40      20.00     149.29      -96.76        4.48
SRCPARAM DS24L261 1.0          154.00      20.00      79.85      -96.76        4.10
SRCPARAM DS24L262 1.0          147.61      20.00      81.64      -96.76        4.10
SRCPARAM DS24L263 1.0          146.02      20.00     200.00      -96.76        5.80
SRCPARAM DS24L264 1.0          151.09      20.00     200.00      -96.76        4.75
SRCPARAM DS24L265 1.0          151.23      20.00     192.88      -96.76        5.12
SRCPARAM DS24L266 1.0          148.56      20.00     127.26      -96.76        4.23
SRCPARAM DS24L267 1.0          150.94      20.00     200.00      -96.76        4.83
SRCPARAM DS24L268 1.0          149.98      20.00     200.00      -96.76        4.65
SRCPARAM DS24L269 1.0          157.73      20.00      36.68      -96.76        4.10
SRCPARAM DS24L270 1.0          147.86      20.00     137.28      -96.76        4.29
SRCPARAM DS24L271 1.0          148.91      20.00     200.00      -96.76        5.92
SRCPARAM DS24L272 1.0          147.49      20.00     200.00      -96.76        4.75
SRCPARAM DS24L273 1.0          156.03      20.00     200.00      -96.76        4.67
SRCPARAM DS24L274 1.0          150.14      20.00     193.65      -96.76        4.20
SRCPARAM DS24L294 1.0          170.00      20.00      94.37      -96.76        4.10
SRCPARAM DS24L295 1.0          169.80      20.00     179.43      -96.76        4.26
SRCPARAM DS24L296 1.0          165.36      20.00     200.00      -96.76        5.91
SRCPARAM DS24L297 1.0          171.90      20.00     200.00      -96.76        4.44
SRCPARAM DS24L298 1.0          179.03      20.00      12.87      -96.76        4.10
SRCPARAM DS24L299 1.0          170.00      20.00     107.25      -96.76        4.10
SRCPARAM DS24L300 1.0          168.81      20.00     147.46      -96.76        4.53
SRCPARAM DS24L301 1.0          170.90      20.00     200.00      -96.76        5.59
SRCPARAM DS24L302 1.0          172.39      20.00     200.00      -96.76        4.21
SRCPARAM DS24L303 1.0          169.28      20.00     200.00      -96.76        4.50
SRCPARAM DS24L304 1.0          170.81      20.00     200.00      -96.76        4.46
SRCPARAM DS24L305 1.0          169.09      20.00     200.00      -96.76        4.22
SRCPARAM DS24L306 1.0          177.94      20.00      52.25      -96.76        4.10
SRCPARAM DS24L307 1.0          169.23      20.00     167.67      -96.76        4.40
SRCPARAM DS24L308 1.0          169.12      20.00     200.00      -96.76        4.79
SRCPARAM DS24L309 1.0          169.25      20.00     200.00      -96.76        4.41
SRCPARAM DS24L310 1.0          175.17      20.00     200.00      -96.76        6.52
SRCPARAM DS24L311 1.0          170.45      20.00     184.39      -96.76        4.19
SRCPARAM DS24L330 1.0          183.14      20.00      29.62      -96.76        4.10
SRCPARAM DS24L331 1.0          182.51      20.00     200.00      -96.76        5.99
SRCPARAM DS24L332 1.0          190.46      20.00     200.00      -96.76        4.18
SRCPARAM DS24L333 1.0          190.23      20.00     197.58      -96.76        4.30
SRCPARAM DS24L334 1.0          190.00      20.00     133.02      -96.76        4.10
SRCPARAM DS24L335 1.0          186.26      20.00      67.14      -96.76        4.10
SRCPARAM DS24L336 1.0          186.85      20.00     200.00      -96.76        5.65
SRCPARAM DS24L337 1.0          190.75      20.00     200.00      -96.76        5.32
SRCPARAM DS24L338 1.0          192.15      20.00     198.04      -96.76        5.06
SRCPARAM DS24L339 1.0          183.79      20.00      82.51      -96.76        4.20
SRCPARAM DS24L340 1.0          190.04      20.00     200.00      -96.76        5.29
SRCPARAM DS24L341 1.0          196.14      20.00     200.00      -96.76        4.10
```

Table L.2-2
AERMOD Input File for 2003 Baseline Diesel PM Run

```
SRCPARAM DS24L342 1.0          188.50     20.00    200.00     -96.76        4.59
SRCPARAM DS24L343 1.0          195.84     20.00    105.37     -96.76        4.10
SRCPARAM DS24L344 1.0          189.93     20.00    198.07     -96.76        4.12
SRCPARAM DS24L345 1.0          190.07     20.00    194.81     -96.76        4.16
SRCPARAM DS24L346 1.0          189.93     20.00    185.19     -96.76        4.17
SRCPARAM DS24L347 1.0          188.81     20.00    200.00     -96.76        5.81
SRCPARAM DS24L348 1.0          190.91     20.00    175.13     -96.76        4.18
SRCPARAM DS24L367 1.0          210.00     20.00     94.37     -96.76        4.10
SRCPARAM DS24L368 1.0          210.00     20.00    170.83     -96.76        4.10
SRCPARAM DS24L369 1.0          208.67     20.00    168.78     -96.76        5.30
SRCPARAM DS24L370 1.0          209.58     20.00    200.00     -96.76        4.50
SRCPARAM DS24L371 1.0          214.07     20.00     78.92     -96.76        4.10
SRCPARAM DS24L372 1.0          210.00     20.00    107.25     -96.76        4.10
SRCPARAM DS24L373 1.0          208.73     20.00    153.97     -96.76        4.69
SRCPARAM DS24L374 1.0          211.67     20.00    200.00     -96.76        4.79
SRCPARAM DS24L375 1.0          210.19     20.00    112.17     -96.76        4.12
SRCPARAM DS24L376 1.0          208.46     20.00    169.36     -96.76        4.16
SRCPARAM DS24L377 1.0          210.95     20.00    198.86     -96.76        4.87
SRCPARAM DS24L378 1.0          202.50     20.00     40.42     -96.76        4.10
SRCPARAM DS24L379 1.0          209.54     20.00    200.00     -96.76        5.83
SRCPARAM DS24L380 1.0          201.82     20.00    200.00     -96.76        4.31
SRCPARAM DS24L381 1.0          210.79     20.00    200.00     -96.76        4.66
SRCPARAM DS24L382 1.0          205.84     20.00    200.00     -96.76        6.13
SRCPARAM DS24L383 1.0          211.18     20.00    200.00     -96.76        4.19
SRCPARAM DS24L384 1.0          208.08     20.00    200.00     -96.76        5.87
SRCPARAM DS24L385 1.0          211.36     20.00    165.87     -96.76        4.15
SRCPARAM DS24L403 1.0          224.33     20.00     40.89     -96.76        4.10
SRCPARAM DS24L404 1.0          223.32     20.00    200.00     -96.76        4.56
SRCPARAM DS24L405 1.0          232.59     20.00    200.00     -96.76        4.52
SRCPARAM DS24L406 1.0          228.09     20.00    200.00     -96.76        4.41
SRCPARAM DS24L407 1.0          233.28     20.00    200.00     -96.76        5.87
SRCPARAM DS24L408 1.0          224.99     20.00    200.00     -96.76        4.25
SRCPARAM DS24L409 1.0          227.45     20.00    200.00     -96.76        5.32
SRCPARAM DS24L410 1.0          230.83     20.00    200.00     -96.76        5.81
SRCPARAM DS24L411 1.0          230.96     20.00    200.00     -96.76        5.03
SRCPARAM DS24L412 1.0          236.37     20.00    200.00     -96.76        5.90
SRCPARAM DS24L413 1.0          228.35     20.00    200.00     -96.76        5.12
SRCPARAM DS24L414 1.0          232.61     20.00    139.00     -96.76        4.25
SRCPARAM DS24L415 1.0          224.89     20.00     78.96     -96.76        4.10
SRCPARAM DS24L416 1.0          231.61     20.00    200.00     -96.76        7.04
SRCPARAM DS24L417 1.0          223.73     20.00    200.00     -96.76        4.15
SRCPARAM DS24L418 1.0          230.41     20.00    200.00     -96.76        6.51
SRCPARAM DS24L419 1.0          225.45     20.00    200.00     -96.76        5.59
SRCPARAM DS24L420 1.0          233.32     20.00    200.00     -96.76        4.21
SRCPARAM DS24L421 1.0          227.62     20.00    200.00     -96.76        5.80
SRCPARAM DS24L422 1.0          231.79     20.00    156.61     -96.76        4.10
SRCPARAM DS24L440 1.0          249.93     20.00    146.52     -96.76        4.17
SRCPARAM DS24L441 1.0          250.00     20.00    153.19     -96.76        4.10
SRCPARAM DS24L442 1.0          247.46     20.00    100.24     -96.76        4.10
SRCPARAM DS24L443 1.0          250.24     20.00    144.45     -96.76        4.31
SRCPARAM DS24L444 1.0          250.00     20.00    133.02     -96.76        4.10
SRCPARAM DS24L445 1.0          250.00     20.00    107.25     -96.76        4.10
SRCPARAM DS24L446 1.0          248.75     20.00    160.48     -96.76        4.81
SRCPARAM DS24L447 1.0          251.52     20.00    200.00     -96.76        4.51
SRCPARAM DS24L448 1.0          250.06     20.00    140.63     -96.76        4.14
SRCPARAM DS24L449 1.0          244.07     20.00    143.06     -96.76        4.56
SRCPARAM DS24L450 1.0          250.43     20.00    200.00     -96.76        4.74
SRCPARAM DS24L451 1.0          258.03     20.00     79.15     -96.76        4.22
SRCPARAM DS24L452 1.0          247.28     20.00    117.51     -96.76        4.10
SRCPARAM DS24L453 1.0          257.28     20.00     43.95     -96.76        4.10
SRCPARAM DS24L454 1.0          246.44     20.00    188.37     -96.76        4.41
SRCPARAM DS24L455 1.0          249.53     20.00    200.00     -96.76        6.83
SRCPARAM DS24L456 1.0          246.57     20.00    200.00     -96.76        5.01
SRCPARAM DS24L457 1.0          255.48     20.00    200.00     -96.76        4.21
SRCPARAM DS24L458 1.0          247.18     20.00    200.00     -96.76        5.61
SRCPARAM DS24L459 1.0          252.29     20.00    147.34     -96.76        4.12
SRCPARAM DS24L476 1.0          265.53     20.00     52.15     -96.76        4.10
SRCPARAM DS24L477 1.0          265.36     20.00    200.00     -96.76        4.28
SRCPARAM DS24L478 1.0          275.21     20.00     43.05     -96.76        4.10
SRCPARAM DS24L479 1.0          265.93     20.00    165.97     -96.76        4.62
SRCPARAM DS24L480 1.0          272.88     20.00    200.00     -96.76        5.80
```

Table L.2-2
AERMOD Input File for 2003 Baseline Diesel PM Run

```
SRCPARAM DS24L481 1.0           264.11      20.00     200.00      -96.76        4.73
SRCPARAM DS24L482 1.0           267.91      20.00     200.00      -96.76        4.93
SRCPARAM DS24L483 1.0           271.53      20.00     200.00      -96.76        5.75
SRCPARAM DS24L484 1.0           269.51      20.00     200.00      -96.76        4.85
SRCPARAM DS24L485 1.0           275.26      20.00     200.00      -96.76        4.15
SRCPARAM DS24L486 1.0           268.33      20.00     200.00      -96.76        4.12
SRCPARAM DS24L487 1.0           270.98      20.00     200.00      -96.76        4.91
SRCPARAM DS24L488 1.0           278.62      20.00      19.29      -96.76        4.10
SRCPARAM DS24L489 1.0           269.66      20.00     156.05      -96.76        4.10
SRCPARAM DS24L490 1.0           279.67      20.00       5.40      -96.76        4.10
SRCPARAM DS24L491 1.0           267.94      20.00     182.40      -96.76        4.32
SRCPARAM DS24L492 1.0           269.26      20.00     200.00      -96.76        6.03
SRCPARAM DS24L493 1.0           268.17      20.00     200.00      -96.76        4.57
SRCPARAM DS24L494 1.0           277.61      20.00     200.00      -96.76        4.26
SRCPARAM DS24L495 1.0           266.77      20.00     200.00      -96.76        5.39
SRCPARAM DS24L496 1.0           272.88      20.00     138.08      -96.76        4.19
SRCPARAM DS24L513 1.0           292.28      20.00     157.79      -96.76        4.22
SRCPARAM DS24L514 1.0           292.40      20.00     154.47      -96.76        4.10
SRCPARAM DS24L515 1.0           282.36      20.00      31.70      -96.76        4.10
SRCPARAM DS24L516 1.0           292.36      20.00     200.00      -96.76        4.18
SRCPARAM DS24L517 1.0           290.78      20.00     200.00      -96.76        6.24
SRCPARAM DS24L518 1.0           292.28      20.00     200.00      -96.76        4.19
SRCPARAM DS24L519 1.0           291.22      20.00     200.00      -96.76        5.27
SRCPARAM DS24L520 1.0           292.27      20.00     200.00      -96.76        5.21
SRCPARAM DS24L521 1.0           294.93      20.00     196.49      -96.76        5.67
SRCPARAM DS24L522 1.0           285.80      20.00     116.76      -96.76        4.21
SRCPARAM DS24L523 1.0           290.07      20.00     200.00      -96.76        5.61
SRCPARAM DS24L524 1.0           296.67      20.00     193.07      -96.76        4.16
SRCPARAM DS24L526 1.0           292.05      20.00     194.60      -96.76        4.10
SRCPARAM DS24L527 1.0           283.22      20.00     200.00      -96.76        4.16
SRCPARAM DS24L528 1.0           290.47      20.00     200.00      -96.76        5.02
SRCPARAM DS24L529 1.0           291.69      20.00     200.00      -96.76        6.61
SRCPARAM DS24L530 1.0           290.35      20.00     200.00      -96.76        4.74
SRCPARAM DS24L531 1.0           302.06      20.00     200.00      -96.76        4.51
SRCPARAM DS24L532 1.0           286.88      20.00     200.00      -96.76        5.53
SRCPARAM DS24L533 1.0           296.25      20.00     174.60      -96.76        4.48
SRCPARAM AS24L001 1.0            16.00      20.00     152.66      -96.76        4.10
SRCPARAM AS24L037 1.0            21.25      20.00      57.60      -96.76        4.10
SRCPARAM AS24L038 1.0            27.73      20.00     200.00      -96.76        4.10
SRCPARAM AS24L039 1.0            36.49      20.00     136.68      -96.76        4.10
SRCPARAM AS24L075 1.0            41.74      20.00     100.39      -96.76        4.10
SRCPARAM AS24L076 1.0            48.71      20.00     200.00      -96.76        4.11
SRCPARAM AS24L077 1.0            56.97      20.00     118.47      -96.76        4.10
SRCPARAM AS24L113 1.0            62.24      20.00     142.50      -96.76        4.11
SRCPARAM AS24L114 1.0            69.69      20.00     200.00      -96.76        4.12
SRCPARAM AS24L115 1.0            77.45      20.00      99.89      -96.76        4.10
SRCPARAM AS24L151 1.0            82.74      20.00     184.60      -96.76        4.12
SRCPARAM AS24L152 1.0            90.66      20.00     200.00      -96.76        4.13
SRCPARAM AS24L153 1.0            97.93      20.00      81.31      -96.76        4.10
SRCPARAM AS24L188 1.0           100.75      20.00      26.71      -96.76        4.10
SRCPARAM AS24L189 1.0           103.24      20.00     200.00      -96.76        4.14
SRCPARAM AS24L190 1.0           111.61      20.00     200.00      -96.76        4.12
SRCPARAM AS24L191 1.0           118.41      20.00      62.73      -96.76        4.10
SRCPARAM AS24L226 1.0           121.92      20.00      68.81      -96.76        4.10
SRCPARAM AS24L227 1.0           123.75      20.00     200.00      -96.76        4.17
SRCPARAM AS24L228 1.0           132.56      20.00     200.00      -96.76        4.12
SRCPARAM AS24L229 1.0           138.89      20.00      44.14      -96.76        4.10
SRCPARAM AS24L264 1.0           143.10      20.00     110.92      -96.76        4.10
SRCPARAM AS24L265 1.0           144.25      20.00     200.00      -96.76        4.21
SRCPARAM AS24L266 1.0           153.52      20.00     200.00      -96.76        4.11
SRCPARAM AS24L267 1.0           159.37      20.00      25.56      -96.76        4.10
SRCPARAM AS24L302 1.0           164.28      20.00     153.02      -96.76        4.10
SRCPARAM AS24L303 1.0           164.74      20.00     200.00      -96.76        4.25
SRCPARAM AS24L304 1.0           174.47      20.00     200.00      -96.76        4.10
SRCPARAM AS24L305 1.0           179.85      20.00       6.98      -96.76        4.10
SRCPARAM AS24L340 1.0           185.45      20.00     195.13      -96.76        4.10
SRCPARAM AS24L341 1.0           185.20      20.00     200.00      -96.76        4.23
SRCPARAM AS24L342 1.0           195.09      20.00     188.40      -96.76        4.10
SRCPARAM AS24L377 1.0           201.04      20.00      37.23      -96.76        4.10
SRCPARAM AS24L378 1.0           201.51      20.00     200.00      -96.76        4.90
SRCPARAM AS24L379 1.0           205.99      20.00     200.00      -96.76        4.20
```

Table L.2-2
AERMOD Input File for 2003 Baseline Diesel PM Run

```
   SRCPARAM AS24L380 1.0          215.57      20.00     169.82     -96.76       4.10
   SRCPARAM AS24L415 1.0          222.22      20.00      79.34     -96.76       4.10
   SRCPARAM AS24L416 1.0          221.48      20.00     200.00     -96.76       4.75
   SRCPARAM AS24L417 1.0          226.92      20.00     200.00     -96.76       4.17
   SRCPARAM AS24L418 1.0          236.06      20.00     151.24     -96.76       4.10
   SRCPARAM AS24L453 1.0          243.39      20.00     121.44     -96.76       4.10
   SRCPARAM AS24L454 1.0          241.82      20.00     200.00     -96.76       4.72
   SRCPARAM AS24L455 1.0          247.86      20.00     200.00     -96.76       4.13
   SRCPARAM AS24L456 1.0          256.54      20.00     132.66     -96.76       4.10
   SRCPARAM AS24L491 1.0          264.57      20.00     163.55     -96.76       4.10
   SRCPARAM AS24L492 1.0          262.21      20.00     200.00     -96.76       4.71
   SRCPARAM AS24L493 1.0          268.80      20.00     200.00     -96.76       4.10
   SRCPARAM AS24L494 1.0          277.02      20.00     114.08     -96.76       4.10
   SRCPARAM AS24L528 1.0          280.16      20.00       5.65     -96.76       4.10
   SRCPARAM AS24L529 1.0          285.90      20.00     200.00     -96.76       4.10
   SRCPARAM AS24L530 1.0          282.67      20.00     200.00     -96.76       4.76
   SRCPARAM AS24L531 1.0          289.79      20.00     200.00     -96.76       4.15
   SRCPARAM AS24L532 1.0          299.90      20.00     187.04     -96.76       4.10
** --------------------------------------------------------------
**  AREAPOLY SOURCE PARAMETERS:   HEIGHT     POINTS   SIGMA-Z0
** --------------------------------------------------------------
   SRCPARAM PARK_001 1.0            0.00          4       3.00
   SRCPARAM PARK_002 1.0            0.00          4       3.00
   SRCPARAM PARK_003 1.0            0.00          4       3.00
   SRCPARAM PARK_004 1.0            0.00          4       3.00
   SRCPARAM PARK_005 1.0            0.00          4       3.00
   SRCPARAM PARK_006 1.0            0.00          4       3.00
   SRCPARAM PARK_007 1.0            0.00          4       3.00
   SRCPARAM PARK_008 1.0            0.00          4       3.00
   SRCPARAM PARK_009 1.0            0.00          4       3.00
   SRCPARAM PARK_010 1.0            0.00          4       3.00
   SRCPARAM PARK_011 1.0            0.00          4       3.00
   SRCPARAM PARK_012 1.0            0.00          4       3.00
   SRCPARAM PARK_013 1.0            0.00          4       3.00
   AREAVERT PARK_013     600.00      530.00    1225.00      530.00    1225.00     930.00     600.00
930.00
   AREAVERT PARK_012    1240.00      530.00    1520.00      530.00    1520.00    1130.00    1240.00
1130.00
   AREAVERT PARK_011    2234.50     -999.30    2970.50     -999.30    2970.50    -338.30    2234.50
-338.30
   AREAVERT PARK_010     335.00      670.00     485.00      670.00     485.00     870.00     335.00
870.00
   AREAVERT PARK_009     300.00      165.00     560.00      165.00     560.00     435.00     300.00
435.00
   AREAVERT PARK_008      95.00      -90.00     335.00      -90.00     335.00      -3.00      95.00
-3.00
   AREAVERT PARK_007    -190.00     -135.00     -68.00     -135.00     -68.00     -68.00    -190.00
-68.00
   AREAVERT PARK_006    -290.00     -150.00    -218.00     -150.00    -218.00     -54.00    -290.00
-54.00
   AREAVERT PARK_005    -495.00     -165.00    -375.00     -165.00    -375.00     -95.00    -495.00
-95.00
   AREAVERT PARK_004    -510.00      -10.00    -390.00      -10.00    -390.00      55.00    -510.00
55.00
   AREAVERT PARK_003    -200.00       35.00     -70.00       35.00     -70.00      91.00    -200.00
91.00
   AREAVERT PARK_002    -300.00       10.00    -227.00       10.00    -227.00      86.00    -300.00
86.00
   AREAVERT PARK_001      80.00       20.00     245.00       20.00     245.00      95.00      80.00
95.00
** ----------------------------------------
**  HOURLY EMISSION FILE:
** ----------------------------------------
   HOUREMIS DIESELBS.HRE RD000000-RD999999
   HOUREMIS DIESELBS.HRE PARK_000-PARK_999
   HOUREMIS DIESELBS.HRE PARKA000-PARKT999
   HOUREMIS DIESELBS.HRE FIRE_000-FIRE_999
   HOUREMIS DIESELBS.HRE STAT_000-STAT_999
   HOUREMIS DIESELBS.HRE GATE_000-GATE_999
   HOUREMIS DIESELBS.HRE TW000000-TW999999
   HOUREMIS DIESELBS.HRE QU00C000-QU36X999
```

Table L.2-2
AERMOD Input File for 2003 Baseline Diesel PM Run

```
   HOUREMIS DIESELBS.HRE RW00C000-RW36X999
   HOUREMIS DIESELBS.HRE DS00C000-DS36X999
   HOUREMIS DIESELBS.HRE AS00C000-AS36X999
** ----------------------------------------
**  SOURCE GROUP DEFINITIONS:
** ----------------------------------------
   SRCGROUP PARKING  PARK_000-PARK_999
   SRCGROUP PARKING  PARKA000-PARKT999
   SRCGROUP ROADWAYS RD000000-RD999999
   SRCGROUP STATSRCS STAT_000-STAT_999
   SRCGROUP FIRES    FIRE_000-FIRE_999
   SRCGROUP GATES    GATE_000-GATE_999
   SRCGROUP AIRCRATW TW000000-TW999999
   SRCGROUP AIRCRAQU QU00C000-QU36X999
   SRCGROUP AIRCRADS DS00C000-DS36X999
   SRCGROUP AIRCRAAS AS00C000-AS36X999
   SRCGROUP AIRCRARW RW00C000-RW36X999
   SRCGROUP ALL
** ----------------------------------------
SO FINISHED

RE STARTING
   ELEVUNIT METERS
** ------------------------------------------------------------
**  CARTESIAN RECEPTORS
** ------------------------------------------------------------
   DISCCART   -2557.000000    1306.000000 0.00 0.00       1.800000
   DISCCART   -2168.000000    1103.000000 0.00 0.00       1.800000
   DISCCART   -1868.000000    1096.000000 0.00 0.00       1.800000
   DISCCART   -1605.000000    1217.000000 0.00 0.00       1.800000
   DISCCART   -1427.000000    1322.000000 0.00 0.00       1.800000
   DISCCART   -1236.000000    1381.000000 0.00 0.00       1.800000
   DISCCART    -624.000000    1445.000000 0.00 0.00       1.800000
   DISCCART    -324.000000    1447.000000 0.00 0.00       1.800000
   DISCCART    -189.000000    1448.000000 0.00 0.00       1.800000
   DISCCART    -184.000000    1335.000000 0.00 0.00       1.800000
   DISCCART      11.000000    1402.000000 0.00 0.00       1.800000
   DISCCART       4.000000    1452.000000 0.00 0.00       1.800000
   DISCCART     304.000000    1452.000000 0.00 0.00       1.800000
   DISCCART     402.000000    1452.000000 0.00 0.00       1.800000
   DISCCART     401.000000    1152.000000 0.00 0.00       1.800000
   DISCCART     401.000000    1124.000000 0.00 0.00       1.800000
   DISCCART     458.000000    1022.000000 0.00 0.00       1.800000
   DISCCART     584.000000    1022.000000 0.00 0.00       1.800000
   DISCCART     584.000000     949.000000 0.00 0.00       1.800000
   DISCCART     657.000000     950.000000 0.00 0.00       1.800000
   DISCCART     718.000000    1067.000000 0.00 0.00       1.800000
   DISCCART     772.000000    1112.000000 0.00 0.00       1.800000
   DISCCART     964.000000    1205.000000 0.00 0.00       1.800000
   DISCCART    1207.000000    1380.000000 0.00 0.00       1.800000
   DISCCART    1314.000000    1457.000000 0.00 0.00       1.800000
   DISCCART    1425.000000    1326.000000 0.00 0.00       1.800000
   DISCCART    1498.000000    1237.000000 0.00 0.00       1.800000
   DISCCART    1536.000000     930.000000 0.00 0.00       1.800000
   DISCCART    1524.000000     630.000000 0.00 0.00       1.800000
   DISCCART    1521.000000     534.000000 0.00 0.00       1.800000
   DISCCART    1228.000000     532.000000 0.00 0.00       1.800000
   DISCCART     928.000000     521.000000 0.00 0.00       1.800000
   DISCCART     628.000000     510.000000 0.00 0.00       1.800000
   DISCCART     575.000000     509.000000 0.00 0.00       1.800000
   DISCCART     575.000000     444.000000 0.00 0.00       1.800000
   DISCCART     296.000000     444.000000 0.00 0.00       1.800000
   DISCCART     296.000000     165.000000 0.00 0.00       1.800000
   DISCCART     595.000000     162.000000 0.00 0.00       1.800000
   DISCCART     895.000000     160.000000 0.00 0.00       1.800000
   DISCCART    1195.000000     158.000000 0.00 0.00       1.800000
   DISCCART    1495.000000     156.000000 0.00 0.00       1.800000
   DISCCART    1795.000000     154.000000 0.00 0.00       1.800000
   DISCCART    2095.000000     152.000000 0.00 0.00       1.800000
   DISCCART    2212.000000     152.000000 0.00 0.00       1.800000
   DISCCART    2212.000000    -148.000000 0.00 0.00       1.800000
```

Table L.2-2
AERMOD Input File for 2003 Baseline Diesel PM Run

```
   DISCCART    2212.000000    -305.000000 0.00 0.00       1.800000
   DISCCART    2502.000000    -305.000000 0.00 0.00       1.800000
   DISCCART    2991.000000    -376.000000 0.00 0.00       1.800000
   DISCCART    2991.000000    -676.000000 0.00 0.00       1.800000
   DISCCART    2991.000000    -976.000000 0.00 0.00       1.800000
   DISCCART    2991.000000   -1078.000000 0.00 0.00       1.800000
   DISCCART    2763.000000   -1074.000000 0.00 0.00       1.800000
   DISCCART    2697.000000   -1074.000000 0.00 0.00       1.800000
   DISCCART    2550.000000   -1076.000000 0.00 0.00       1.800000
   DISCCART    2551.000000   -1375.000000 0.00 0.00       1.800000
   DISCCART    2552.000000   -1462.000000 0.00 0.00       1.800000
   DISCCART    2252.000000   -1470.000000 0.00 0.00       1.800000
   DISCCART    2216.000000   -1471.000000 0.00 0.00       1.800000
   DISCCART    1916.000000   -1469.000000 0.00 0.00       1.800000
   DISCCART    1616.000000   -1467.000000 0.00 0.00       1.800000
   DISCCART    1316.000000   -1466.000000 0.00 0.00       1.800000
   DISCCART    1016.000000   -1464.000000 0.00 0.00       1.800000
   DISCCART     716.000000   -1462.000000 0.00 0.00       1.800000
   DISCCART     590.000000   -1462.000000 0.00 0.00       1.800000
   DISCCART     575.000000   -1211.000000 0.00 0.00       1.800000
   DISCCART     353.000000   -1365.000000 0.00 0.00       1.800000
   DISCCART      54.000000   -1398.000000 0.00 0.00       1.800000
   DISCCART      18.000000   -1403.000000 0.00 0.00       1.800000
   DISCCART    -250.000000   -1430.000000 0.00 0.00       1.800000
   DISCCART    -549.000000   -1428.000000 0.00 0.00       1.800000
   DISCCART    -849.000000   -1427.000000 0.00 0.00       1.800000
   DISCCART   -1149.000000   -1426.000000 0.00 0.00       1.800000
   DISCCART   -1449.000000   -1425.000000 0.00 0.00       1.800000
   DISCCART   -1749.000000   -1424.000000 0.00 0.00       1.800000
   DISCCART   -2049.000000   -1422.000000 0.00 0.00       1.800000
   DISCCART   -2265.000000   -1422.000000 0.00 0.00       1.800000
   DISCCART   -2496.000000   -1460.000000 0.00 0.00       1.800000
   DISCCART   -2795.000000   -1464.000000 0.00 0.00       1.800000
   DISCCART   -2000.000000   -1500.000000 0.00 0.00       1.800000
   DISCCART   -1500.000000   -1500.000000 0.00 0.00       1.800000
   DISCCART   -1000.000000   -1500.000000 0.00 0.00       1.800000
   DISCCART   -1000.000000    1500.000000 0.00 0.00       1.800000
   DISCCART    -500.000000   -1500.000000 0.00 0.00       1.800000
   DISCCART    -500.000000    1500.000000 0.00 0.00       1.800000
   DISCCART       0.000000   -1500.000000 0.00 0.00       1.800000
   DISCCART     500.000000   -1500.000000 0.00 0.00       1.800000
   DISCCART     500.000000    1500.000000 0.00 0.00       1.800000
   DISCCART    1000.000000   -1500.000000 0.00 0.00       1.800000
   DISCCART    1000.000000    1500.000000 0.00 0.00       1.800000
   DISCCART    1500.000000   -1500.000000 0.00 0.00       1.800000
   DISCCART    1500.000000     500.000000 0.00 0.00       1.800000
   DISCCART    1500.000000    1500.000000 0.00 0.00       1.800000
   DISCCART    2000.000000   -1500.000000 0.00 0.00       1.800000
   DISCCART    2000.000000     500.000000 0.00 0.00       1.800000
   DISCCART    2000.000000    1000.000000 0.00 0.00       1.800000
   DISCCART    2500.000000   -1500.000000 0.00 0.00       1.800000
   DISCCART    2500.000000       0.000000 0.00 0.00       1.800000
   DISCCART    2500.000000     500.000000 0.00 0.00       1.800000
   DISCCART    2500.000000    1000.000000 0.00 0.00       1.800000
   DISCCART    3000.000000    -500.000000 0.00 0.00       1.800000
   DISCCART    3000.000000       0.000000 0.00 0.00       1.800000
   DISCCART       0.000000      20.000000 0.00 0.00       1.800000
RE FINISHED

ME STARTING
   SURFFILE C:\Met\OS_96.SFC
   PROFFILE C:\Met\OS_96.PFL
   SURFDATA     23174 96
   UAIRDATA  00003190 96
   PROFBASE      0.00 FEET
ME FINISHED

OU STARTING
   RECTABLE ALLAVE FIRST
OU FINISHED
```

Attachment 3: Incremental Cancer and Non-Cancer Risk Calculations for SAIP Operations and Construction

This page intentionally left blank.

Table L.3-1
Incremental Risk Calculation for SAIP Alternative, Horizon Year 2005, 2003 Baseline
(Based on Location where Cancer Risks are Greatest)

Exposure Parameters	Residential Child	School Child	Residential Adult
Inhalation rate	15 (m^3/day)	6 (m^3/day)	20 (m^3/day)
Exposure Duration	6 (years)	6 (years)	70 (years)
Exposure Frequency	350 (days/year)	200 (days/year)	350 (days/year)
Body Weight	15 (kg)	40 (kg)	70 (kg)
Averaging Time	2190 (d)	2190 (d)	25550 (d)
Conversion Factor	1.00E-03 (mg/ug)	1.00E-03 (mg/ug)	1.00E-03 (mg/ug)

	Location Specific Concentrations		Toxicity Criteria				Cancer Risks				Hazard Quotients		
TAP	Concentration at Residence (ug/m^3)	Concentration at School Location (ug/m^3)	EPA Inhalation Slope Factor $(mg/kg\text{-}d)^{-1}$	CalEPA Inhalation Slope Factor $(mg/kg\text{-}d)^{-1}$	EPA RfDi (mg/kg-d)	CalEPA Proposed REL (mg/kg-d)	Cancer Risk to Child Resident	Cancer Risk to School Child	Cancer Risk to Adult+Child Resident	Cancer Risk to Adult Resident	Hazard Quotient Child Resident	Hazard Quotient School Child	Hazard Quotient Adult Resident
Acetaldehyde	5.57E-02	3.01E-01	7.70E-03	1.00E-02	2.57E-03	2.57E-03	4.58E-08	2.12E-08	1.60E-07	1.53E-07	2.08E-02	9.64E-03	5.94E-03
Acrolein	2.83E-02	1.55E-01	NA	NA	5.71E-06	1.71E-05	NC	NC	NC	NC	4.75E+00	2.23E+00	1.36E+00
Benzene	6.09E-02	3.15E-01	7.70E-03	1.00E-01	8.57E-03	1.71E-02	5.01E-07	2.22E-07	1.75E-06	1.67E-06	6.82E-03	3.02E-03	1.95E-03
1,3-Butadiene	4.91E-02	2.66E-01	1.05E-01	6.00E-01	5.71E-04	NA	2.42E-06	1.12E-06	8.47E-06	8.08E-06	8.25E-02	3.83E-02	2.36E-02
Formaldehyde	3.30E-01	1.81E+00	4.55E-02	2.10E-02	2.00E-01	8.57E-04	5.69E-07	2.68E-07	1.99E-06	1.90E-06	1.58E-03	7.45E-04	4.52E-04
Toluene	5.71E-02	2.78E-01	NA	NA	1.14E-01	8.57E-02	NC	NC	NC	NC	4.80E-04	2.01E-04	1.37E-04
Xylene (total)	3.61E-02	2.03E-01	NA	NA	2.86E-02	2.00E-01	NC	NC	NC	NC	1.21E-03	5.83E-04	3.46E-04
Naphthalene	1.39E-02	7.52E-02	NA	1.20E-01	8.57E-04	2.57E-03	1.38E-07	6.36E-08	4.81E-07	4.58E-07	1.56E-02	7.21E-03	4.46E-03
Arsenic	0.00E+00	0.00E+00	1.51E+01	1.16E+01	3.00E-04	8.57E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Beryllium	0.00E+00	0.00E+00	8.40E+00	8.40E+00	5.71E-06	2.00E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Cadmium	0.00E+00	0.00E+00	6.30E+00	1.47E+01	5.00E-04	5.71E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Chromium (VI)	2.85E-06	1.57E-05	4.20E+01	5.10E+02	2.86E-05	NA	1.19E-07	5.64E-08	4.17E-07	3.98E-07	9.55E-05	4.51E-05	2.73E-05
Copper	5.05E-06	2.23E-05	NA	NA	NA	NA	NC	NC	NC	NC	NC	NC	NC
Manganese	5.51E-06	2.62E-05	NA	NA	1.43E-05	5.71E-05	NC	NC	NC	NC	3.70E-04	1.51E-04	1.06E-04
Nickel	5.32E-07	4.87E-07	NA	9.10E-01	2.00E-02	1.43E-05	3.98E-11	3.12E-12	1.39E-10	1.33E-10	2.55E-08	2.00E-09	7.28E-09
Zinc	0.00E+00	0.00E+00	NA	NA	3.00E-01	NA	NC	NC	NC	NC	0.00E+00	0.00E+00	0.00E+00
Diesel PM	2.33E-02	1.42E-02	NA	1.10E+00	1.43E-03	1.43E-03	2.11E-06	1.10E-07	7.37E-06	7.02E-06	1.56E-02	8.15E-04	4.47E-03
						TOTAL	**6E-06**	**2E-06**	**2E-05**	**2E-05**	**5**	**2**	**1**

NA = Not Available

Source: Camp Dresser & McKee Inc., 2005

Table L.3-2
Calculation of Incremental Acute Hazard Indices for the 2005 SAIP
Compared to the 2003 Baseline

Coordinate		Exposure Type	Acrolein Increment (ug/m^3)	Hazard Index (Acrolein REL = 0.19 ug/m^3)	
X	Y			Residential	Worker
3000	-500	**Residential**	0.564	3.0	
3000	0	**Residential**	0.636	3.3	
2991	-1078	**Worker**	0.741		3.9
2991	-976	**Worker**	0.883		4.6
2991	-676	**Worker**	0.891		4.7
2991	-376	**Worker**	0.392		2.1
2763	-1074	**Worker**	0.674		3.5
2697	-1074	**Worker**	0.612		3.2
2552	-1462	**Residential**	0.533	2.8	
2551	-1375	**Worker**	0.591		3.1
2550	-1076	**Worker**	0.720		3.8
2502	-305	**Worker**	1.575		8.3
2500	-1500	**Residential**	0.492	2.6	
2500	0	**Worker**	0.814		4.3
2500	500	**Worker**	0.267		1.4
2500	1000	**Residential**	0.278	1.5	
2252	-1470	**Worker**	0.419		2.2
2216	-1471	**Worker**	0.426		2.2
2212	-305	**Worker**	2.727		14.4
2212	-148	**Worker**	0.854		4.5
2212	152	**Worker**	0.760		4.0
2095	152	**Worker**	1.140		6.0
2000	-1500	**Worker**	0.477		2.5
2000	500	**Worker**	0.690		3.6
2000	1000	**Residential**	0.398	2.1	
1916	-1469	**Worker**	0.605		3.2
1795	154	**Worker**	0.698		3.7
1616	-1467	**Worker**	0.472		2.5
1536	930	**Worker**	0.647		3.4
1524	630	**Worker**	0.292		1.5
1521	534	**Worker**	0.337		1.8
1500	-1500	**Worker**	0.333		1.8
1500	500	**Worker**	0.362		1.9
1500	1500	**Residential**	0.800	4.2	
1498	1237	**Residential**	0.940	4.9	
1495	156	**Worker**	0.679		3.6
1425	1326	**Residential**	0.915	4.8	
1316	-1466	**Worker**	1.145		6.0
1314	1457	**Residential**	0.933	4.9	
1228	532	**Worker**	0.433		2.3
1207	1380	**Residential**	1.040	5.5	
1195	158	**Worker**	0.986		5.2

Attachment 4: Incremental Cancer and Non-Cancer Risk Calculations for SAIP Construction Activities

This page intentionally left blank.

Table L.4-1
Quantification of Acute Noncarcinogenic Hazards from Construction

Source	Mass GLC Scaler based on 1.0 g/sec	Actual Emission Rate	Mass GLC		Weight Fraction	Contaminant	Acute Hazard / Toxicological Endpoints*									
							REL	RfD	RESP	CNS/PNS	CV/BL	IMMUN	KIDN	GI/LV	REPRO	EYES
	(ug/m3)	(g/sec)	(ug/m3)	(mg/m3)			(ug/m3)	(mg/kg/day)								
Farm Equipment - Diesel (818)	19.27	7.1E-01	13.76	1.4E-02	1.47E-01	Formaldehyde	9.4E+01	2.7E-02	1.1E-02			1.1E-02				1.1E-02
					2.00E-02	Benzene	1.3E+03	3.7E-01			1.1E-04	1.1E-04			1.1E-04	
					1.48E-02	Methyl Ethyl Ketone	1.3E+04	3.7E+00	8.3E-06							8.3E-06
					1.47E-02	Toluene	3.7E+04	1.1E+01	2.9E-06	2.9E-06					2.9E-06	2.9E-06
					6.11E-03	m-Xylene	2.2E+04	6.3E+00	2.0E-06							2.0E-06
					3.35E-03	o-Xylene	2.2E+04	6.3E+00	1.1E-06							1.1E-06
					9.50E-04	p-Xylene	2.2E+04	6.3E+00	3.2E-07							3.2E-07
					5.80E-04	Styrene	2.1E+04	6.0E+00	2.0E-07							2.0E-07
					3.00E-04	Methyl Alcohol	2.8E+04	8.0E+00		7.9E-08						
Diesel Vehicle Exhaust (425)	19.27	8.4E-02	1.62	1.6E-03	3.30E-03	Ammonia	3.2E+03	9.1E-01	8.9E-07							8.9E-07
					2.70E-04	Chlorine	2.1E+02	6.0E-02	1.1E-06							1.1E-06
					2.60E-05	Mercury	1.8E+00	5.1E-04							1.2E-05	
					1.60E-05	Nickel	6.0E+00	1.7E-03	2.3E-06			2.3E-06				
Gasoline Vehicle Exhaust - TOG (442)	19.27	1.9E-01	3.65	3.6E-03	5.86E-02	Toluene	3.7E+04	1.1E+01	3.1E-06	3.1E-06					3.1E-06	3.1E-06
					3.63E-02	m-Xylene	2.2E+04	6.3E+00	3.2E-06							3.2E-06
					2.63E-02	Benzene	1.3E+03	3.7E-01			3.9E-05	3.9E-05			3.9E-05	
					1.69E-02	Formaldehyde	9.4E+01	2.7E-02	3.5E-04			3.5E-04				3.5E-04
					1.26E-02	o-Xylene	2.2E+04	6.3E+00	1.1E-06							1.1E-06
					4.04E-03	Methanol	2.8E+04	8.0E+00		2.8E-07						
					1.35E-03	Acrolein	1.9E-01	5.4E-05	1.4E-02							1.4E-02
					1.25E-03	Styrene	2.1E+04	6.0E+00	1.2E-07							1.2E-07
					1.90E-04	Methyl Ethyl Ketone	1.3E+04	3.7E+00		2.8E-08						
Gasoline Vehicle Exhaust - PM (400)	19.27	1.1E+00	21.68	2.2E-02	7.00E-02	Chlorine	2.1E+02	6.0E-02	3.8E-03							3.8E-03
					5.00E-04	Copper	1.0E+02	2.9E-02	5.8E-05							
					5.00E-04	Nickel	6.0E+00	1.7E-03	9.6E-04			9.6E-04				
					4.50E-01	Sulfates	1.2E+02	3.4E-02	4.3E-02							
Pavement Marking Paint	18.90	1.9E+01	360.05	3.6E-01	2.23E-02	Methanol	2.8E+04	8.0E+00		1.5E-04						
Prime Coat	18.90	3.7E-02	0.70	7.0E-04	6.62E-01	Isopropanol	3.2E+03	9.1E-01	7.7E-05							7.7E-05
					7.60E-02	Toluene	3.7E+04	1.1E+01	7.7E-07	7.7E-07					7.7E-07	7.7E-07
Total									7.4E-02	1.6E-04	1.5E-04	1.3E-02	0.0E+00	0.0E+00	1.7E-04	3.0E-02

Source: PCR Services, 2005

* Key to Toxocological Endpoints

RESP	Respiratory System
CNS/PNS	Central/Peripheral Nervous System
CV/BL	Cardiovascular/Blood System
IMMUN	Immune System
KIDN	Kidney
GI/LV	Gastrointestinal System/Liver
REPRO	Reproductive System (e.g., teratogenic and developmental effects)
EYES	Eye irritation and/or other effects

Table L.4-2
Quantification of Carcinogenic Risks (1.5 Year Exposure Duration) and Chronic Noncarcinogenic Hazards from Construction

Source	Mass GLC Scaler based on 1.0 g/sec	Actual Emission Rate	Mass GLC		Weight Fraction	Contaminant	Carcinogenic Hazard			Noncarcinogenic Hazard / Toxicological Endpoints*									
							URF	CPF	RISK	REL	RfD	RESP	CNS/PNS	CV/BL	IMMUN	KIDN	GI/LV	REPRO	EYES
	(ug/m3)	(g/sec)	(ug/m3)	(mg/m3)			(ug/m3)	(mg/kg/day)		(ug/m3)	(mg/kg/day)								
Diesel Equipment	0.32136	0.06270	0.02015	2.0E-05	1.00E+00	Deisel Exhaust Particulate	3.0E-04	1.1E+00	1.0E-07	5.0E+00	1.4E-03	3.3E-03							
Gasoline Vehicle Exhaust - TOG (442)	0.32136	0.06350	0.02041	2.0E-05	5.86E-02	Toluene				3.0E+02	8.6E-02	3.2E-06	3.2E-06					3.2E-06	
					3.63E-02	m-Xylene				7.0E+02	2.0E-01	8.6E-07	8.6E-07						
					3.12E-02	Propylene				3.0E+03	8.6E-01	1.7E-07							
					2.63E-02	Benzene	2.9E-05	1.0E-01	2.7E-10	6.0E+01	1.7E-02		7.2E-06	7.2E-06				7.2E-06	
					1.93E-02	MTBE	2.6E-07	9.1E-04	1.8E-12	8.0E+03	2.3E+00					4.0E-08	4.0E-08		4.0E-08
					1.69E-02	Formaldehyde	6.0E-06	2.1E-02	3.6E-11	3.0E+00	8.6E-04	9.3E-05							9.3E-05
					1.58E-02	n-Hexane				7.0E+03	2.0E+00		3.7E-08						
					1.26E-02	o-Xylene				7.0E+02	2.0E-01	3.0E-07	3.0E-07						
					1.07E-02	Ethylbenzene				2.0E+03	5.7E-01			8.8E-08		8.8E-08	8.8E-08	8.8E-08	
					5.48E-03	1,3-Butadiene	1.7E-04	6.0E-01	3.3E-10	2.0E+01	5.7E-03							4.5E-06	
					4.04E-03	Methanol				4.00E+03	1.1E+00							1.7E-08	
					2.40E-03	Acetaldehyde	2.70E-06	9.5E-03	2.3E-12	9.00E+00	2.6E-03	4.4E-06							
					1.35E-03	Acrolein				6.00E-02	1.7E-05	3.7E-04							3.7E-04
					1.25E-03	Styrene				9.00E+02	2.6E-01		2.3E-08						
					4.80E-04	Naphthalene				9.00E+00	2.6E-03	8.8E-07							
					1.90E-04	Methyl Ethyl Ketone				1.00E+03	2.9E-01							3.1E-09	
Gasoline Vehicle Exhaust - PM (442)	0.32136	3.5E-03	0.00112	1.1E-06	5.00E-04	Bromine				1.70E+00	4.9E-04	2.7E-07							
					7.00E-02	Chlorine				2.00E-01	5.7E-05	3.2E-04							
					5.00E-04	Copper				2.40E+00	6.9E-04	1.9E-07							
					5.00E-04	Manganese				2.10E-01	6.0E-05		2.2E-06						
					5.00E-04	Nickel	2.60E-04	9.1E-01	2.5E-12	5.00E-02	1.4E-05	9.1E-06		9.1E-06			9.1E-06		
					4.50E-01	Sulfates				2.50E+01	7.1E-03	1.64E-05							
					5.00E-04	Zinc				3.50E+01	1.0E-02	1.3E-08		1.3E-08			1.3E-08		
Asphalt Paving	0.32139	3.30E-03	0.00106		1.90E-04	Naphthalene				9.00E+00	2.6E-03	3.5E-07							
Pavement Marking Paint	0.32139	1.8E+00	0.59136	5.9E-04	2.23E-02	Methanol				4.00E+03	1.1E+00							2.7E-06	
Prime Coat	0.32139	1.2E-04	0.00004	4.0E-08	6.62E-01	Isopropanol				7.00E+03	2.0E+00					3.1E-09		3.1E-09	
					1.58E-01	Propylene Glycol Methyl Ether				7.00E+03	2.0E+00						7.3E-10		
					7.60E-02	Toluene				3.00E+02	8.6E-02	8.2E-09	8.2E-09					8.2E-09	
Total									1.1E-07			4.08E-03	1.39E-05	1.64E-05	0.00E+00	1.31E-07	9.25E-06	1.77E-05	4.65E-04

Source: PCR Services, 2005.

* Key to Toxocological Endpoints

RESP	Respiratory System	Respiratory System
CNS/PNS	Central/Peripheral Nervous Sys	Central/Peripheral Nervous System
CV/BL	Cardiovascular/Blood System	Cardiovascular/Blood System
IMMUN	Immune System	Immune System
KIDN	Kidney	Kidney
GI/LV	Gastrointestinal System/Liver	Gastrointestinal System/Liver
REPRO	Reproductive System (e.g., tera	Reproductive System (e.g., teratogenic and developmental effects)
EYES	Eye irritation and/or other effec	Eye irritation and/or other effects

Note:	Exposure factors used to calcul	Exposure factors used to calculate contaminant intake	
	exposure frequency (days/year)	exposure frequency (days/year)	365
	exposure duration (years)	exposure duration (years)	1.5
	inhalation rate (m3/day)	inhalation rate (m3/day)	16.2
	average body weight (kg)	average body weight (kg)	70
	averaging time$_{(cancer)}$ (days)	averaging time$_{(cancer)}$ (days)	25550
	averaging time$_{(noncancer)}$ (days)	averaging time$_{(noncancer)}$ (days)	547.5

Table L.4-3
Quantification of Carcinogenic Risks (70 Year Exposure Duration) from Construction

Source	Mass GLC Scaler based on 1.0 g/sec	Actual Emission Rate	Mass GLC		Weight Fraction	Contaminant	Carcinogenic Hazard		
							URF	CPF	RISK
	(ug/m3)	(g/sec)	(ug/m3)	(mg/m3)			(ug/m3)	(mg/kg/day)	
Diesel Equipment	0.32136	0.06270	0.02015	2.0E-05	1.00E+00	Deisel Exhaust Particulate	3.0E-04	1.1E+00	4.9E-06
Gasoline Vehicle Exhaust - TOG (442)	0.32136	0.06350	0.02041	2.0E-05	5.86E-02	Toluene			
					3.63E-02	m-Xylene			
					3.12E-02	Propylene			
					2.63E-02	Benzene	2.9E-05	1.0E-01	1.3E-08
					1.93E-02	MTBE	2.6E-07	9.1E-04	8.3E-11
					1.69E-02	Formaldehyde	6.0E-06	2.1E-02	1.7E-09
					1.58E-02	n-Hexane			
					1.26E-02	o-Xylene			
					1.07E-02	Ethylbenzene			
					5.48E-03	1,3-Butadiene	1.7E-04	6.0E-01	1.5E-08
					4.04E-03	Methanol			
					2.40E-03	Acetaldehyde	2.70E-06	9.5E-03	1.1E-10
					1.35E-03	Acrolein			
					1.25E-03	Styrene			
					4.80E-04	Naphthalene			
					1.90E-04	Methyl Ethyl Ketone			
Gasoline Vehicle Exhaust - PM (442)	0.32136	3.5E-03	0.00112	1.1E-06	5.00E-04	Bromine			
					7.00E-02	Chlorine			
					5.00E-04	Copper			
					5.00E-04	Manganese			
					5.00E-04	Nickel	2.60E-04	9.1E-01	1.2E-10
					4.50E-01	Sulfates			
					5.00E-04	Zinc			
Asphalt Paving	0.32139	3.30E-03	0.00106		1.90E-04	Naphthalene			
Pavement Marking Paint	0.32139	1.8E+00	0.59136	5.9E-04	2.23E-02	Methanol			
Prime Coat	0.32139	1.2E-04	0.00004	4.0E-08	6.62E-01	Isopropanol			
					1.58E-01	Propylene Glycol Methyl Ether			
					7.60E-02	Toluene			
Total									4.9E-06

Source: PCR Services, 2005.

* Key to Toxocological Endpoints

RESP	Respiratory System	Respiratory System
CNS/PNS	Central/Peripheral Nervous Syst	Central/Peripheral Nervous System
CV/BL	Cardiovascular/Blood System	Cardiovascular/Blood System
IMMUN	Immune System	Immune System
KIDN	Kidney	Kidney
GI/LV	Gastrointestinal System/Liver	Gastrointestinal System/Liver
REPRO	Reproductive System (e.g., terat	Reproductive System (e.g., teratogenic and developmental effects)
EYES	Eye irritation and/or other effect	Eye irritation and/or other effects

Note:	Exposure factors used to calcula	Exposure factors used to calculate contaminant intake	
	exposure frequency (days/year)	exposure frequency (days/year)	365
	exposure duration (years)	exposure duration (years)	70.0
	inhalation rate (m3/day)	inhalation rate (m3/day)	16.2
	average body weight (kg)	average body weight (kg)	70
	averaging time$_{(cancer)}$ (days)	averaging time$_{(cancer)}$ (days)	25550
	averaging time$_{(noncancer)}$ (days)	averaging time$_{(noncancer)}$ (days)	25550

This page intentionally left blank.

Appendix M Supplemental Noise Analysis Information

M.1 Introduction

Detailed statistical data related to aircraft noise exposure patterns and impact evaluations presented in Section 4.5 of this Draft EIR are presented in this Appendix. The Appendix includes that information necessary to compute the noise exposure patterns present around the airport in 2003, as well as those forecast for Year 2005 under the South Airfield Improvement Project (SAIP) scenario (known as Project (2005) Conditions). The patterns of aircraft-related noise are defined through use of noise contours and single-site data prepared with the FAA's Integrated Noise Model (INM), Version 6.1. This was the most current version of the INM at the time the noise contours for this Draft EIR were prepared. INM is discussed below in more detail.

Section 4.5 describes the impacts associated with the aircraft noise exposure patterns for the 2003 baseline and Project (2005) conditions. The contours associated with the impacts are also presented in Section 4.5.

M.1.1 Noise Basics and Metrics

In order to understand results from a noise analysis, a foundation in the basics of sound and metrics used to measure it should be established first. The following two sections describe the physics of sound and the methods used to measure sound level and impact.

M.1.1.1 Basics of Noise Analysis

Sound is a physical phenomenon consisting of minute vibrations that travel through a medium, such as air, and are sensed by the human ear. Whether that sound is interpreted as pleasant (e.g., music) or unpleasant (e.g., jackhammers) depends largely on the listener's current activity, past experience, and attitude toward the source of that sound.

The measurement and human perception of sound involves three basic physical characteristics: intensity (loudness), frequency (high or low pitch) and duration. The loudest sounds that are detected comfortably by the human ear have intensities that are a trillion times higher than those of sounds that are barely detected. Due to this vast range, the use of a linear scale to represent the intensity of sound becomes very unwieldy. To simplify acoustical calculations, a logarithmic unit known as the decibel (abbreviated dB) is used to represent the intensity of a sound. Such a representation is called a sound level. Decibels measure the ratio of a given intensity of sound energy levels to the threshold of hearing intensity, with the threshold having the value of 0 decibels (0 dB). Sound level measurements in decibels are generally referenced to a standard threshold of hearing at 1000 Hz for the human ear, which can be stated in terms of sound intensity. This value has wide acceptance as a nominal standard threshold and corresponds to 0 decibels. The actual average threshold of hearing at 1000 Hz is more like 2.5 x 10-12 watts/cm2 or about 4 decibels, but 0 decibels is a convenient reference. Normal speech has a sound level of approximately 60 dB. Sound levels above 120 dB may cause physical discomfort, and sounds maintaining a level above 140 dB can cause permanent hearing damage.

Sound levels cannot be arithmetically added or subtracted due to the logarithmic nature of the decibel unit. However, some simple rules are useful in understanding sound levels. First, if a sound's intensity is doubled, the sound level increases by 3 dB, regardless of the initial sound level. For example:

60 dB + 60 dB = 63 dB, and
80 dB + 80 dB = 83 dB.

Second, the total sound level produced by two sounds of different levels is slightly more than the higher of the two. For example:

60.0 dB + 70.0 dB = 70.4 dB.

Adding the noise from a relatively quiet event (60 dB) to a relatively noisy event (70 dB) results in a value of 70.4 dB. The quieter event has only one-tenth the sound energy of the noisier event. As a result, the quieter noise event is “drowned out” by the noisier one. Therefore, the human ear perceives no discernible increase in the overall noise level.

Finally, when different sounds are *averaged* together, the result is dominated by the highest sound level.

Average (50 dB and 100 dB) = 97 dB

Research indicates that a person can detect a change as small as 1 dB under very carefully controlled laboratory conditions. However, the minimum change in an individual event’s sound level that an average human ear can detect under normal conditions is about 3 dB. In general, a person perceives a 10 dB change in sound level as a doubling (or halving) of the sound’s loudness. A 10 dB decrease in sound level actually represents a 90 percent decrease in sound intensity, but only a 50 percent decrease in perceived loudness. Sound energy is linear, but perceived loudness to the human ear is nonlinear.

The difference between how people perceive fluctuations in sound levels and the relative sound energy that underlies the change in levels is key to understanding both how noise is analyzed and mitigated. For example, a doubling of aircraft operations without a change in the type of aircraft flying would result in a doubling of sound energy that, as shown above, is associated with a 3 dB increase in noise level. Further, the noise exposure level near an airport is largely determined by the loudest aircraft operating, and not strongly affected by changes in operations by quieter aircraft.

Sound frequency is measured in terms of cycles per second (cps), or hertz (Hz), which is the standard unit for measuring frequency. The normal human ear can detect sounds that range in frequency from about 20 Hz to about 15,000 Hz. All sounds in this wide range of frequencies, however, are not heard equally well by the human ear. The ear is most sensitive to frequencies in the 1,000 to 4,000 Hz range. A sound tone at 2,000 Hz would seem louder than a sound at 15,000 Hz of the same intensity. Weighting curves were developed to correspond to the sensitivity and perception of the human ear to different types of sound. A-weighting accounts for frequency dependence by adjusting the high and low frequencies (below approximately 500 Hz and above approximately 10,000 Hz) to approximate the human ear’s lower sensitivities to those frequencies.

Sound levels that are measured using A-weighting, called A-weighted sound levels, are often denoted by the unit dBA. When the use of A-weighting is understood, the adjective “A-weighted” is often omitted and the measurements are expressed in dBA.

Some common sounds on the dBA scale are listed in **Table M-1**. As shown in the table, the relative perceived loudness of a sound doubles for each 10 dBA increase although a 10 dBA change corresponds to a tenfold increase in relative sound energy.

Exhibit M-1 illustrates the range of sound produced and the average sound level of several aircraft types compared with other sounds, such as sirens, motorcycles, and garbage disposals.

Table M-1

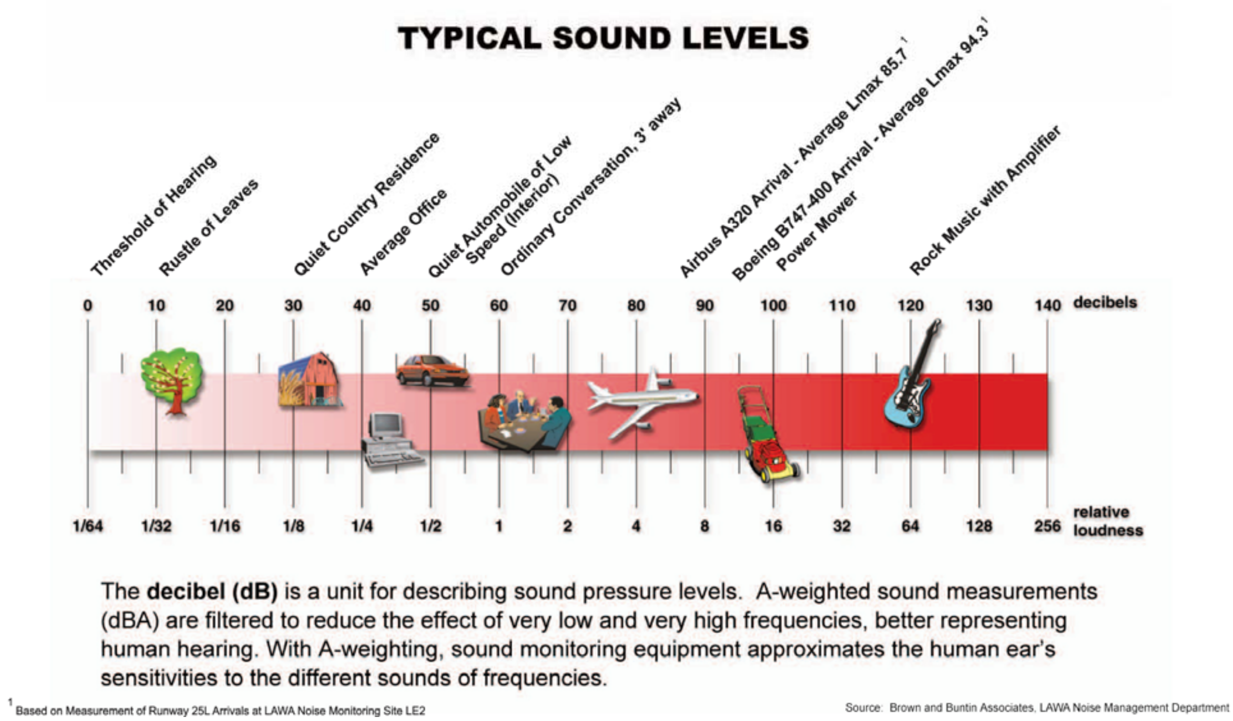
Common Sounds on the A-weighted Decibel Scale

Sound	Sound Level (dBA)	Relative Loudness (approximate)	Relative Sound Energy
Rock music, with amplifier	120	64	1,000,000
Thunder, snowmobile (operator)	110	32	100,000
Boiler shop, power mower	100	16	10,000
Orchestral crescendo at 25 feet, noisy kitchen	90	8	1,000
Busy street	80	4	100
Interior of department store	70	2	10
Ordinary conversation, 3 feet away	60	1	1
Quiet automobiles at low speed	50	1/2	.1
Average office	40	1/4	.01
City residence	30	1/8	.001
Quiet country residence	20	1/16	.0001
Rustle of leaves	10	1/32	.00001
Threshold of hearing	0	1/64	.000001

Source: U.S. Department of Housing and Urban Development, *Aircraft Noise Impact—Planning Guidelines for Local Agencies,* 1972.
Prepared by: Ricondo & Associates, Inc.

Exhibit M-1

Average Sound Levels



Source: Brown – Buntin Associates
Prepared by: Ricondo & Associates, Inc.

M.1.1.2 Noise Metrics

A metric refers to the unit used to quantitatively measure the effect of noise on the environment. Due to the wide variety of purposes for which noise is analyzed, including an evaluation of the way sound is generated by an aircraft, a wide variety of metrics exist to describe noise. While only a limited number of metrics are commonly used in discussing aircraft noise, the metrics differ in significant ways. There are two very basic categories of noise metrics: single aircraft overflight noise exposure and cumulative (average) exposure related to multiple flights over a defined period of time (e.g., 24-hour day or eight hours).

Single aircraft overflight noise events are quantified using the Maximum Sound Level (L_{max}) or Sound Exposure Level (SEL) metric, whereas cumulative exposure to many flights over a given period is expressed in terms of the Community Noise Exposure Level (CNEL) or Equivalent Sound Level (L_{eq}). In addition, supplemental noise metrics, such as Time Above (TA) and Number-of-events Above (NA), are used to augment the more traditional noise descriptors. All of the metrics listed below were used in the aircraft and construction noise analysis.

- ***A-weighted Sound Pressure Level, dBA***: dBA is a frequency-weighted sound level (in decibels) that correlates with the way sound is heard by the human ear (as discussed previously).
- ***Maximum Noise Level, Lmax***: L_{max} is the maximum sound level during a single noise event. During an aircraft overflight, the noise level starts at the ambient or background noise level, rises to the maximum level as the aircraft flies closest to the observer, and returns to the

background level as the aircraft recedes into the distance. The L_{max} metric indicates the maximum sound level occurring for a fraction of a second when measuring sounds that change rapidly. The maximum sound level is important in judging the interference caused by a noise event with speaking and listening, sleep, or other common activities. Although the metric provides some measure of the intrusiveness of the event, L_{max} does not completely describe the total event. The metric does not represent the duration that a sound is heard. An event with a relatively low L_{max} and a longer duration may be just as intrusive as a short-duration event with a higher L_{max}.

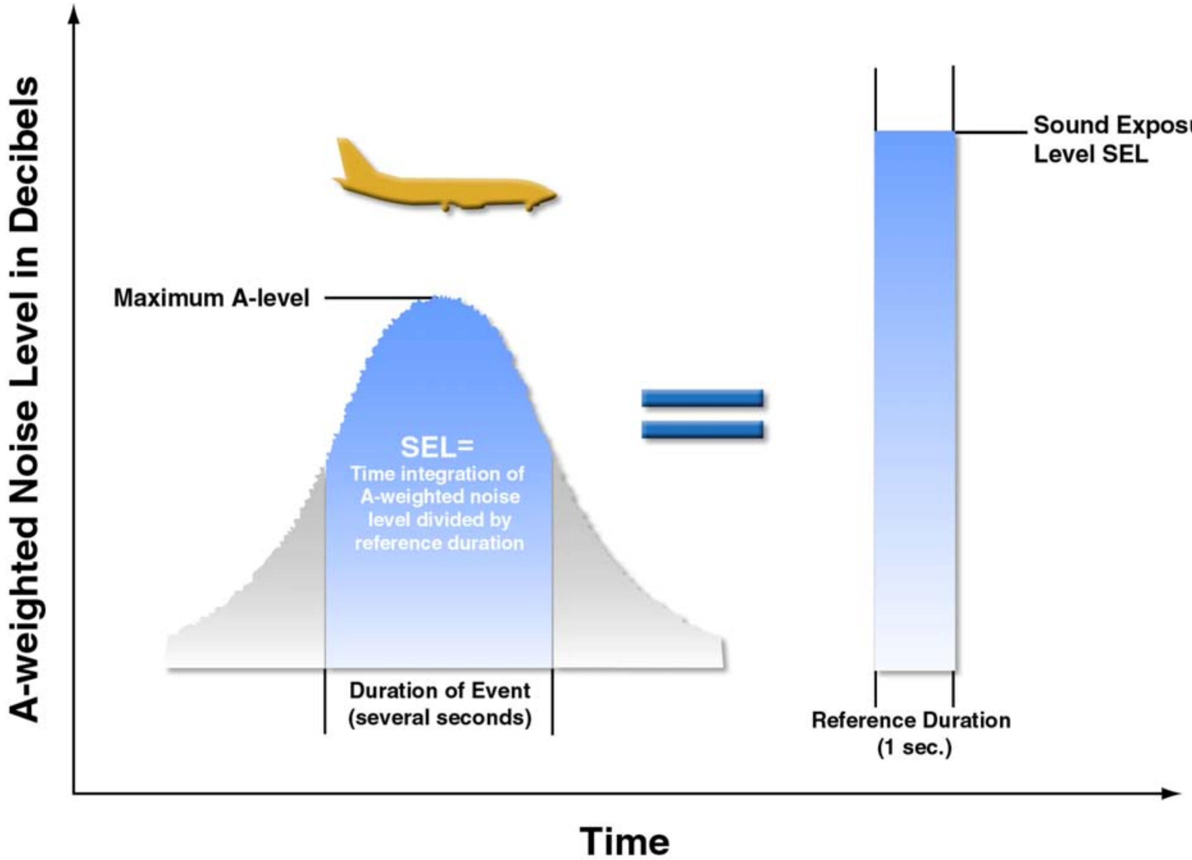
- ***Sound Exposure Level, SEL***: SEL is a single event metric that represents both the intensity of a sound and its duration. Individual time-varying noise events (e.g., aircraft overflights) have two main characteristics: (1) a sound level that changes throughout the event and (2) a period of time during which the event is heard, or duration. SEL provides a measure of the net impact of the entire acoustic event. However, the metric does not directly represent the sound level heard at any given time. During an aircraft flyover, SEL includes both the maximum noise level and the lower noise levels that occur as the sound rises and then falls. SEL is a logarithmic measure of the total acoustic energy transmitted to the listener during the event. Mathematically, the metric represents the level of a constant sound that, in one second, generates the same acoustic energy as the actual time-varying noise event for sound from aircraft overflights, which typically last more than one second. The SEL value accounts for the duration of a multi-second event, whereas L_{max} reflects only the peak level at one moment. The L_{max} versus SEL concept is depicted on **Exhibit M-2**. The principal benefit of the SEL metric is to make comparisons among noise events with varying durations. SEL is the single-event metric commonly used to compare noise levels between individual aircraft operations.

- ***A-weighted Community Noise Equivalent Level (CNEL)*****:** CNEL, expressed in dBA, is the standard metric used in California to represent cumulative noise exposure. The metric provides a single-number description of the sound energy to which a person or community is exposed over a period of 24 hours. CNEL includes penalties applied to noise events occurring after 7:00 p.m. and before 7:00 a.m., when noise is considered more intrusive. The penalized time period is further subdivided into evening (7:00 p.m. through 9:59 p.m.) and nighttime (10:00 p.m. to 6:59 a.m.). When a noise event occurs in the evening, a penalty of 4.77 dBA is added to the nominal sound level. A 10 dBA penalty is added to nighttime noise events (equivalent to a tenfold increase in aircraft operations).

  The CNEL metric used for aircraft noise analyses is based on an average annual day of aircraft operations, generally derived from data for a calendar year. An average annual day (AAD) activity profile is computed by adding all aircraft operations occurring during the course of a year and dividing the result by 365. As such, AAD does not reflect activities on any one specific day, but represents average conditions as they occur during the course of the year.

Exhibit M-2

SEL Concept



Source: Brown – Buntin Associates
Prepared by: Ricondo & Associates, Inc.

The CNEL metric is used to describe the existing and predicted cumulative noise exposure for communities within airport environs as set forth in the *L.A. CEQA Thresholds Guide*. CNEL aircraft noise exposure areas are calculated to estimate the effect of airport operations on neighboring land use compatibility. The CNEL metric is widely accepted as the best available method to describe aircraft noise exposure and quantify potential public annoyance in California.

- ***A-weighted Equivalent Sound Level (L_{eq})***: L_{eq} is similar to the CNEL metric in representing cumulative noise impacts over a period of time. However, there are key differences that make L_{eq} especially useful for certain purposes. First, L_{eq} is not restricted to assessing noise over a 24-hour day, but may be used for any period of interest such as one-hour or an eight-hour school day. Second, L_{eq} does not include any penalties for evening and nighttime occurrences.
- ***Time Above (TA)*:** TA is a measure of the total time (in minutes) that an A-weighted noise level exceeds a threshold dBA level. TA is computed using the FAA-approved aircraft noise model (discussed below). Because TA is defined in minutes, the metric offers a description

of noise exposure that many people find more meaningful than CNEL. Unlike CNEL and the single-event descriptors, there is very little research on how best to use TA. Therefore, no accepted standards exist for what the threshold setting should be and what constitutes “too much” time above the threshold. For Project (2005) conditions, TA was used to evaluate aircraft noise impacts on classroom learning. The TA metric was used to define the number of minutes during a school day that aircraft noise levels would exceed predefined thresholds for learning, as defined in the *Supplement to the LAX Master Plan Draft EIS/EIR* Appendix S-C1, *Supplemental Aircraft Noise Technical Report*.

- ***Number-of-events Above (NA)***: NA, like TA, represents a quantity above a set noise threshold. However, where TA reports time above the threshold, NA reports the number of times the threshold is exceeded by a noise event. As with TA, no generally accepted standards for setting NA thresholds exist. NA is frequently used in a single-event analysis to supplement CNEL contours. NA may be depicted as contours illustrating a predefined threshold and indicating the number of events that exceed the threshold. NA was used for the nighttime sleep disturbance assessment defined in the *Supplement to the LAX Master Plan Draft EIS/EIR* Appendix S-C1, *Supplemental Aircraft Noise Technical Report.*

M.1.2 Aircraft Noise Analysis Methodology

The aircraft noise analysis methodology for this EIR was developed using guidance provided in the *L.A. CEQA Thresholds Guide.* The methodology for analyzing noise from most transportation or community noise sources, including aircraft, follows a generally accepted process that includes the application of a computer model to estimate noise levels and compare them to those for baseline conditions and future alternatives.

M.1.2.1 Modeling Aircraft Noise

Aircraft noise is analyzed using one or more computer models. To ensure a consistent approach to aircraft noise analyses, the FAA developed the Integrated Noise Model (INM), which is regularly updated for both aircraft noise characteristics and computational algorithms. The State of California and the *L.A. CEQA Thresholds Guide* endorse the use of the FAA’s INM. Subsection M.1.2.2 below provides an overview of the INM, which is a planning tool designed to compare the relative effect of one set of theoretical conditions against those of another. The relative differences are expected to remain consistent for the two conditions reflected, regardless of the inconsistencies between measured and modeled data. Therefore, the FAA requires noise exposure patterns based on modeled rather than measured data for its evaluations (FAA Order 5050.4A, 47e(1)(d) and 85a, and FAA Order 1050.1E), which is accepted under CEQA.

Modeled aircraft CNEL noise exposure maps are used as planning tools to allow the comparison of different scenarios of operations over a broad geographical area. The principal use for the aircraft noise analysis in this EIR was to develop the 2003 Baseline condition and the Project (2005) condition, and to compare the two as a means to identify potential significant impacts related to Project (2005) conditions. Adjustments to reflect noise measurement data were not made to the 2003 Baseline contours in order to maintain the integrity of the comparison to Project (2005) conditions.

M.1.2.2 INM Model Overview

The INM is the accepted, state-of-the-art tool for determining the total effect of aircraft noise exposure at and around airports. The following sections describe the model and the inputs required for analyzing aircraft noise. The INM has been the FAA's standard tool for determining the predicted noise impact in the vicinity of airports since 1978. Statutory requirements for INM use are defined in FAA Order 1050.1E, *Policies and Procedures for Considering Environmental Impacts*; Order 5050.4A, *Airport Environmental Handbook*, and Federal Aviation Regulations (FAR) Part 150, *Airport Noise Compatibility Planning*. As specified in the *L.A. CEQA Thresholds Guide,* INM is an acceptable model for analyzing aircraft noise impacts for an EIR.

The INM uses runway and flight track information, operation levels distributed by time of day, aircraft fleet mix, and aircraft profiles as inputs. The INM produces noise exposure contours in a variety of metrics, including CNEL, DNL, L_{max}, L_{eq}, SEL, and TA. In addition, the INM computes noise at specific points on the ground that are input into the model. (e.g., homes, schools, churches, and other noise sensitive facilities).

The INM includes flight performance data for a wide variety of aircraft types. The model's aircraft database contains a representation of commercial, general aviation, and military aircraft powered by turbojet, turbofan, or propeller-driven engines. For each aircraft type in the database, INM incorporates: (1) a set of departure profiles for each applicable trip length as a surrogate for weight, (2) a set of approach parameters, and (3) noise (SEL) versus distance curves for several thrust settings.

The model computes the noise from each flight at a large number of grid points on the ground. After each operation is modeled, INM logarithmically sums all the aircraft noise values. Next, aircraft noise contours (areas) are generated by connecting grid points with equal levels of noise exposure. The model is used to produce CNEL noise contours in 5 dBA increments including, at a minimum, 65, 70, and 75 dBA. Aircraft noise exposure contours may be produced for other noise levels, but the accuracy of INM decreases at lower levels of noise exposure due to physical factors such as ground reflections and atmospheric effects that are approximated in INM.

Version 6.1 of the INM was used for the aircraft noise analysis for this EIR. INM 6.1 is the most recent release of the model for use at the time this aircraft noise analysis was conducted. The analyses conducted as part of the LAX Master Plan Final EIR used an earlier release of INM, Version 6.0c. INM 6.1 differs from INM 6.0c principally in that it uses an updated algorithm for lateral noise computation. The FAA has made available detailed information related to the updates to INM 6.1 via release notes located on its website (www.aee.faa.gov).

M.1.2.3 INM Input Data and Assumptions

In order for the INM to generate CNEL aircraft noise exposure contours that would be viable to evaluate aircraft noise impacts, the following inputs to the model are required:

- A basic description of the airfield, including altitude, average annual temperature, and runway layout.
- Aircraft activity information, including the number of aircraft operations by time of day and aircraft type.
- Flight operational data, including use of the runways, location and use of flight tracks, departure profiles, and existing noise abatement procedures.

The last two categories of data are discussed in more detail below.

M.1.2.3.1 Aircraft Activity Input

The INM requires the following input data regarding the character and timing of operations at an airport:

- The average number of flights each day by aircraft type, such as Boeing 757 (757PW), Gulfstream IV corporate jet (GIV), or Cessna 172 single-engine propeller aircraft (CNA172),
- Time of day the flights occurred, and
- Distance the aircraft is traveling ("stage length" to determine aircraft weight).

Each of these input factors is discussed below, along with the concept of average annual day (AAD).

M.1.2.3.2 Operations by Aircraft Type

Different aircraft types vary dramatically in the amount of noise they generate. Takeoff noise levels (in dBA) associated with several aircraft types that operate at LAX are shown on **Exhibit M-3**. The noise level estimates are documented in FAA Advisory Circular 36-3D, *Estimated Airplane Noise Levels in A-Weighted Decibels* (March 1986 as amended), and are based on certificated aircraft noise levels measured at 21,325 feet (6,500 meters) from the start of the takeoff roll. Aircraft noise characteristics can be classified according to Federal noise level standards specified in FAR Part 36, *Noise Standards, Aircraft Type and Airworthiness Certification*, as meeting Stage 1 (noisiest), Stage 2 (quieter), or Stage 3 (quietest) standards. FAR Part 91,[1] *General Operating and Flight Rules*, specifies that after December 31, 1999, no person may operate a Stage 2 aircraft over 75,000 pounds in the contiguous United States. As a result of this ruling, all aircraft over 75,000 pounds that operated at LAX must meet FAR Part 36 Stage 3 standards. However, FAR Part 36 Stage 2 general aviation (GA) jet aircraft that weigh less than 75,000 pounds are exempt from this requirement. This includes a number of small jets operated by businesses and individuals.

The INM aircraft database includes information for most, but not all, aircraft types. Therefore, substitutions are often necessary as a means to identify equivalent aircraft for those aircraft that are not included in the database. The FAA has developed a list of pre-approved aircraft substitutions for use in the INM. In this aircraft noise analysis, the FAA pre-approved list of substitutions was used.[2]

M.1.2.3.3 Time of Day of Flight Activity

As noted in Subsection M.1.1.2, the CNEL metric applies different weighting penalties to aircraft that operate in the evening or at night. Therefore, the number and type of aircraft operating in the evening and nighttime periods are required inputs to the INM. Due to the CNEL weighting scheme, evening and nighttime operations have a greater effect on the shape and size of the noise exposure area than their number might suggest. One operation at night is equivalent to 10 daytime operations.

M.1.2.3.4 Stage Length and Gross Aircraft Weight

Stage length (unrelated to "stage" classifications of aircraft for noise characteristics) refers to the nonstop distance an aircraft travels after departing from an airport. The stage length determines the gross takeoff weight assigned to each aircraft type. The aircraft weight serves as the basis for determining the appropriate departure altitude and thrust profiles used for modeling purposes. Aircraft noise characteristics vary depending on altitude and thrust. For example, a fully loaded

[1] FAR Part 36 Stage 1 aircraft are not permitted to operate in the United States.
[2] Based on the LAX Master Plan forecast, the A380 will not be operational in 2005. The A380 is not expected to be operational for commercial service until 2006 and for freighter service until 2008.

aircraft departing on a long flight would probably weigh more than the same aircraft departing on a shorter flight due to a higher fuel load. The heavier aircraft gains altitude at a slower rate than the lighter aircraft. The heavier aircraft also requires more thrust to climb. Thrust levels and distances from the ground are two important factors related to noise levels heard by residents. The closer the aircraft, the shorter distance there is for attenuation. The more power applied to the engines, the louder the noise from the source.

M.1.2.3.5 Average Annual Day Activity Levels

For CNEL aircraft noise exposure calculations, aircraft operations associated with the average annual day are used in the INM. To achieve the necessary level of detail and to provide an accurate noise assessment for the existing condition, a full year of operational data is normally analyzed when available. The numbers of operations by each aircraft type and time of day are divided by 365 to arrive at the average annual day numbers. This representation of airport activity does not reflect any particular day, but gives an accurate picture of the timing and character of operations throughout the year.

M.1.2.4 Flight Pattern Input

The existing and predicted future use of the runways and flight tracks to and from an airport determine where aircraft are routed. Runway and flight track use directly influence where aircraft noise events are generated.

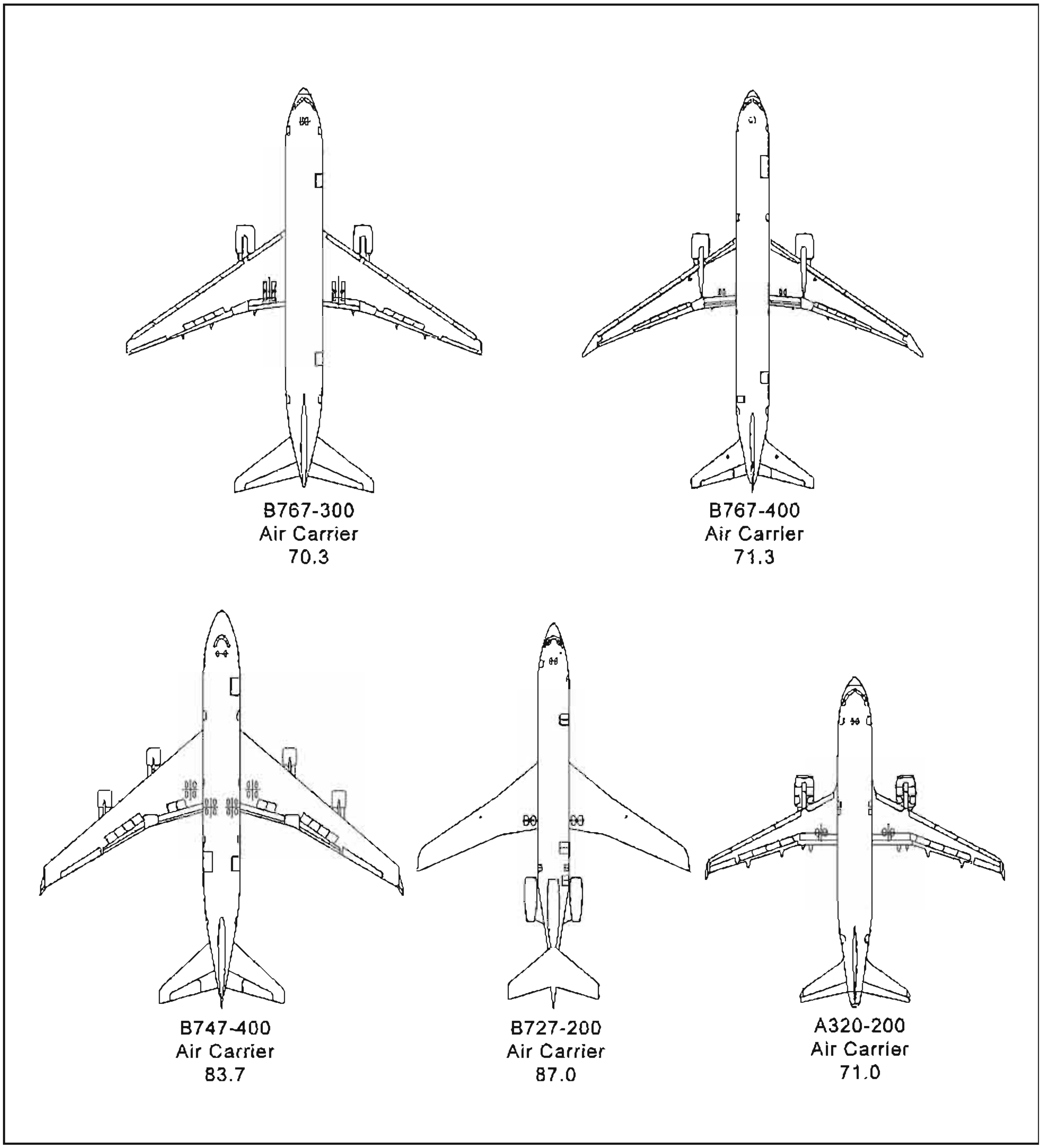
M.1.2.4.1 Runway Use

In the INM, runways are defined by runway end in terms of latitude and longitude coordinates. A runway may include a displaced take-off or landing threshold. This portion of the runway is defined to be unavailable for that type of operation for safety reasons (e.g., obstruction clearance). Displaced thresholds are identified in the INM, which uses the input to determine actual start-of-take-off or touchdown points along the runway.

Runway use for departure or arrivals is typically a function of prevailing wind and weather, lengths and widths of the runways, instrumentation, and effects of other airports or air traffic facilities in the area. Runway use may also be influenced by the direction of flight of an arriving or departing aircraft, the aircraft parking position, and/or periodic closures of runways and taxiways. Finally, noise abatement practices, such as the program of keeping nighttime departures and arrivals over the ocean when departing from or arriving at LAX, also influence the pattern of aircraft movements on a runway.

M.1.2.4.2 Aircraft Flight Tracks

Once aircraft leave a runway on departure or approach a runway on arrival, their location and altitude over surrounding communities becomes a determining factor in how much noise would be experienced on the ground. For this reason, flight track information is an important input to the INM. Most pilots fly their aircraft in predictable patterns as they follow instructions from FAA Air Traffic Control handling their movements into or away from an airport. Flight tracks are defined to represent the paths of the large majority of aircraft located throughout the study area. When using the INM, these flight tracks are specified to capture the complexity of the actual flight patterns. Flight tracks are defined in the INM before aircraft operations can be entered. The number of operations is entered for each aircraft type, runway, and flight track.



The noise level estimates are documented in FAA Advisory Circular 36-3D, *Estimated Airplane Noise Levels in A-Weighted Decibels* (March 1986 as amended), and are based on certificated aircraft noise levels measured at 21,325 feet (6,500 meters) from the start of the takeoff roll.

Source: Los Angeles World Airports
Prepared by. Ricondo & Associates, Inc

Exhibit M-3

Comparison of Takeoff Noise Values
Aircraft Operating at Los Angeles International Airport

Not to Scale

M.1.2.4.3 Flight Climb and Descent Profiles

A flight profile describes the change in altitude that an aircraft undergoes as it departs or approaches a runway. The INM specifies standard departure profiles for each aircraft type in the database, and for various gross weights of the larger aircraft. For arrivals, a three-degree descent that is typical for most flights is assumed in the INM. Where flight procedures at an airport differ substantially from the profiles available in the INM, the analyst has the option of defining a customized profile to reflect nonstandard flight procedures. Any customized profiles constructed require FAA approval before use in a federally reviewed noise analysis. Standard profiles provided in the INM were used to calculate aircraft noise exposure.

M.1.2.5 The Reliability and Utility of the INM

The validity and accuracy of the INM CNEL calculation depend on the accuracy and completeness of the basic information used in the calculations. For the 2003 Baseline, the number, character, and location of flights were taken from the airport's noise and flight track monitoring system data. Use of these data yielded a reasonably accurate depiction of noise exposure within the airport's surrounding communities for planning purposes.

For future airport activities, the reliability of CNEL calculations is affected by a number of factors:

- *Aviation activity levels* – The forecast number of aircraft operations, the types of aircraft serving the airport, the times of operation (daytime, evening, and nighttime) and aircraft flight tracks are considered estimates based on historical trends and calculated growth. Achievement of the estimated activity levels when the study time period arrives is not predictable with absolute certainty. The events of September 11, 2001, provide an example of unforeseen circumstances that may dramatically alter national flight activity patterns for an extended period of time. However, the forecasts for 2005 during construction of the SAIP (documented in the Final LAX Master Plan Appendix D, *Interim Year Activity Analysis*) were reviewed and accepted by LAWA as a reasonable forecast of future activity.
- *Aircraft acoustical and performance characteristics* are also estimates. When new aircraft designs are involved, aircraft noise data and flight characteristics must be estimated using existing INM aircraft types as substitutes. Due to the short time period between the 2003 Baseline and the Project (2005) analysis, new aircraft types are not expected to be a factor in the validity of this analysis.
- The *noise descriptors* used as the basis for calculating CNEL represent typical human response (and reaction) to aircraft noise. Individuals vary in their responses to noise. Therefore, CNEL was used only to obtain an average response to aircraft noise that might be expected from a community.
- *Single flight tracks* used in computer modeling represent what might be wider, dispersed bands of actual flight tracks in the future year.

Future CNEL contour mapping was developed as a tool to assist in the assessment of aircraft noise impacts around airports as a result of a proposed alternative. The mapping is best used for comparative purposes rather than for the production of absolute values. CNEL calculations provide valid comparisons between different projected conditions as long as consistent assumptions and basic data are used for all calculations. CNEL comparisons show anticipated changes in aircraft noise exposure over time and identify alternative impacts on anticipated aircraft noise exposure. However, a line drawn on a map does not imply that a particular noise condition exists on one side of the line and not on the other. For the purposes of this analysis, CNEL calculations are best viewed as a means for comparing noise effects, not for precisely defining them relative to specific parcels of land or mitigation boundaries.

M.1.3 2003 Baseline Aircraft Operations

In developing noise contours, extensive data are necessary to describe the operating conditions at the airport. The following sections provide a description of the data and assumptions used to develop the noise contours for 2003 baseline. The input parameters include the average daily number of aircraft operations, the aircraft fleet mix and its distribution throughout the day, the current utilization of the runways, the location of the flight paths leading to and from the runways, and the distribution of flight operations on those flight paths. The 2003 baseline conditions consider not only the noise produced by aircraft in flight, but also that noise produced by aircraft that conduct engine maintenance run-ups on the ground. Typically, flight noise affects a broader area along the paths of flight, while run-up noise of similar levels is limited to areas on or near the airport. Both types of noise exposure patterns are dependent on the level, timing and location of aircraft activity.

M.1.3.1 Baseline Aircraft Activity

The LAWA Noise Management Division (NMD) has an automated noise and operations monitoring system that captures information for aircraft flight activity at LAX. The LAX system accesses the FAA's Automated Radar Terminal System (ARTS) records and obtains information about the locations (in three dimensions) and identification of aircraft arriving to and departing from the airport. LAWA maintains records of all activity and produces monthly reports, which are released to the public through its website http://www.lawa.org/lax/ (follow the News and Airport Facts link, then the Statistics link, and then the Volume of Air Traffic link). In addition, LAWA produces a Quarterly Report, which includes the data for the preceding 12 months of that year. The 4th Quarter report contains a record of annual airfield activity. The Quarterly Report is submitted to the California Department of Transportation (Caltrans) in compliance with Title 21 of the California Airport Noise Regulations. For this EIR, NMD provided the 4th Quarter 2003 report, which was the primary data source for the 2003 Baseline aircraft noise analysis. The elements of this analysis are described below.

M.1.3.2 Operations by Aircraft Type, Time of Day and Stage Length

Arrival and departure information, including aircraft type and time of day, was available in the NMD 4th Quarter report for most flights that occurred in 2003. Historically, the LAX noise and operations monitoring system registered information for approximately 85 percent of all flights. Other information available to LAWA, such as airline landing reports and airfield user records, supplemented the automated data capture system to provide a more comprehensive picture of aviation activity at the airport. The data recorded by the system were compared with FAA traffic counts prepared independently by the FAA Airport Traffic Control Tower staff. The FAA Tower counts report the number of operations (departures plus arrivals) on an annual basis for categories of aircraft, including commercial air carrier, air taxi, general aviation, and military operations. Within each non-military category, a more detailed list of aircraft types was available from the LAWA monitoring system. Where the LAWA system underreported the number of aircraft in a particular FAA category, a correction factor was applied to all aircraft types within the category to develop the full number of operations.

Table M-2 provides the list of aircraft types that operated at LAX in 2003 with their average annual day number of operations by day, evening, and nighttime, separately for arrivals and departures.

The time of day distribution of aircraft operations is a key component in INM input for determining CNEL due to the penalties applied to evening and nighttime operations. The values reported in Table M-2 indicate that 30 percent and 28 percent of arrivals and departures, respectively, operate during the evening and nighttime hours. Air carriers, both domestic and international, operated a majority of the aircraft.

In addition to flight operations, ground run-up operations take place at LAX. Ground run-ups are conducted as a means to test aircraft engines after repairs are made. Because actual run-up activities were no longer tracked by LAWA, estimated 2005 values developed for the LAX Master Plan Final EIR were used as a conservative means to calculate run-up noise effects. Even with a conservative estimate, the average number and type of run-ups did not affect the location of CNEL exposure areas outside the airport property. The average annual number of run-up operations by aircraft type is presented in **Table M-3**, along with average duration and general location information.
Because military operations were not recorded by LAWA, assumptions based on analysis conducted for the 1996 Baseline year within the LAX Master Plan Final EIR were carried forward. Information provided by LAWA in support of the 1996 evaluation indicated that military helicopters account for approximately 90 percent of the military activity through LAX airspace, while the remaining operations were conducted with various types of aircraft. The analysis concluded that noise energy contributed by each military aircraft to the CNEL exposure results is masked by that from commercial operations.

Several additional assumptions carried over from previous LAX Master Plan Final EIR aircraft noise evaluations were used in developing the annual flight activity condition for 2003. Assumptions included the following:

- Over the course of the year, arrivals would equal departures for each aircraft type. Where the LAWA monitoring data reported an unequal number, the lower number was raised to match the higher.
- Recorded aircraft activity levels from a flight track monitoring system tend to be lower than the FAA Tower counts. To address this, operations were first adjusted so that the number of arrivals equaled the number of departures for each aircraft type. Then, the numbers for all types were increased by a correction factor to meet the Tower count number.
- Day, evening, and nighttime activity levels were assumed to be recorded with an equal degree of accuracy. That is, if there was a discrepancy between airport records and the FAA Tower count, the correction was applied to all time periods rather than assuming that one time of day was more likely to be underreported than another. Operational records indicated that approximately 71.2 percent of flights occurred during the daytime, 14.8 percent in the evening, and 14.0 percent at night.

LAWA NMD staff used the assumptions above during development of the 2003 annual average day operations input for INM.

Table M-2 (1 of 2)

Average Annual Day Aircraft Operations and Fleet Mix: 2003 Baseline Conditions

INM Aircraft Type	Arrivals			Departures			All Operations		
	Day	Evening	Night	Day	Evening	Night	Day	Evening	Night
707QN	0.4	--	--	0.4	--	--	0.7	--	--
727EM1	--	--	--	0.1	--	--	0.1	--	--
727EM2	1.5	0.4	1.4	0.8	1.4	1.0	2.3	1.9	2.4
737300	77.4	16.8	7.9	80.4	15.5	6.1	157.8	32.2	14.0
7373B2	2.2	0.2	0.1	2.4	--	--	4.6	0.2	0.1
737400	16.4	4.5	3.9	17.5	4.7	2.5	33.9	9.1	6.4
737500	15.5	7.0	1.1	17.0	4.6	2.0	32.5	11.6	3.1
737700	4.8	0.9	0.5	3.9	1.7	0.5	8.7	2.6	1.0
737800	18.1	5.3	3.0	20.0	0.7	5.8	38.1	6.0	8.8
737N17	2.9	0.1	0.1	2.8	0.1	0.1	5.7	0.1	0.2
737N9	1.6	0.5	0.2	1.7	0.4	0.1	3.3	0.9	0.3
74710Q	--	0.2	0.5	0.1	--	0.7	0.1	0.2	1.2
747200	1.0	0.3	0.2	0.4	--	1.0	1.5	0.4	1.2
74720A	--	0.1	0.1	0.1	--	0.1	0.1	0.1	0.2
74720B	1.8	0.6	0.5	0.9	0.1	1.9	2.6	0.7	2.4
747400	27.4	3.6	3.7	17.4	3.8	13.4	44.9	7.4	17.1
747SP	--	--	--	--	--	--	--	--	--
757300	3.9	2.6	0.7	5.3	--	1.7	9.3	2.6	2.3
757PW	33.3	12.8	8.9	42.4	1.8	10.8	75.6	14.6	19.7
757RR	22.6	9.7	6.4	26.9	2.4	9.6	49.5	12.1	16.0
767300	17.6	10.9	6.9	28.8	1.7	4.8	46.5	12.6	11.7
767400	3.9	2.2	3.4	6.7	0.8	1.9	10.6	3.0	5.3
767CF6	8.1	3.5	2.4	10.3	0.8	3.0	18.4	4.3	5.5
767JT9	4.0	1.8	0.2	4.6	--	1.3	8.7	1.8	1.5
777200	9.5	2.3	0.7	9.6	1.1	1.8	19.1	3.4	2.5
777300	0.1	--	--	0.1	--	--	0.2	--	--
A300	0.8	0.5	0.8	0.2	1.1	0.8	1.0	1.6	1.6
A30062	0.7	--	--	0.7	--	--	1.4	0.1	--
A310	0.8	0.1	0.1	0.7	0.2	0.1	1.5	0.3	0.2
A319	18.4	7.3	3.6	22.3	2.4	4.7	40.7	9.7	8.3
A32023	33.8	14.4	8.7	37.6	3.0	16.3	71.4	17.4	25.0
A32123	5.6	1.6	1.0	5.2	0.4	2.6	10.8	2.0	3.6
A330	0.7	--	--	0.7	--	--	1.4	--	--
A340	4.1	0.2	0.3	3.5	0.7	0.4	7.6	0.9	0.6
A7D	1.1	--	--	1.1	--	--	2.1	--	--
BAC111	--	--	--	--	--	--	--	--	--
BAE146	--	0.3	--	0.3	--	--	0.3	0.3	--
BEC58P	0.5	0.1	0.1	0.5	0.1	0.1	1.0	0.2	0.2
C130	1.9	0.2	--	2.1	--	--	4.0	0.2	--
CIT3	0.3	--	--	0.3	--	--	0.6	0.1	0.1
CL600	15.1	3.5	0.7	16.7	1.8	0.8	31.9	5.3	1.5
CL601	40.7	7.1	2.5	37.6	7.2	5.4	78.2	14.3	7.9
CNA172	0.7	0.1	--	0.6	0.2	0.1	1.3	0.3	0.1
CNA206	0.4	--	--	0.3	--	0.1	0.7	0.1	0.2
CNA441	1.3	0.2	0.2	1.2	0.2	0.2	2.5	0.4	0.4
CNA500	0.3	--	--	0.3	--	--	0.6	0.1	0.1
CNA55B	0.4	--	--	0.4	--	0.1	0.7	0.1	0.1
CNA750	0.9	0.2	0.1	1.1	0.1	0.1	2.0	0.3	0.2
CVR580	--	--	--	--	--	--	--	--	--
DC1010	3.5	0.3	2.2	1.3	2.2	2.6	4.8	2.4	4.8
DC1030	1.3	0.1	1.6	0.8	0.8	1.3	2.2	1.0	2.9
DC1040	--	--	0.9	0.9	--	--	1.0	--	0.9
DC3	--	--	--	--	--	--	--	--	--

Table M-2 (2 of 2)

Average Annual Day Operations and Fleet Mix: 2003 Baseline Conditions

INM Aircraft Type	Arrivals			Departures			All Operations		
	Day	Evening	Night	Day	Evening	Night	Day	Evening	Night
DC870	0.7	0.1	0.5	0.2	0.8	0.2	0.9	0.9	0.6
DC8QN	--	--	--	--	0.1	--	--	0.1	--
DC93LW	0.8	0.4	1.4	1.3	--	1.3	2.1	0.4	2.6
DC95HW	2.1	1.1	0.4	3.5	0.1	--	5.6	1.2	0.4
DC9Q9	--	--	--	--	--	--	--	--	--
DHC6	1.0	0.8	1.0	0.8	0.1	1.9	1.8	0.9	2.9
DHC8	--	--	--	--	--	--	0.1	--	--
EMB120	85.3	15.3	3.8	81.0	9.7	13.7	166.2	25.0	17.5
EMB14L	--	--	--	--	--	--	--	--	--
F28MK2	--	--	--	--	--	--	--	--	--
FAL20	0.2	0.1	--	0.3	--	0.1	0.5	0.1	0.1
GASEPF	0.5	0.1	--	0.4	0.1	0.1	0.9	0.1	0.1
GASEPV	1.2	0.6	0.2	1.3	0.2	0.5	2.5	0.8	0.7
GII	0.7	0.2	0.1	0.7	0.1	0.2	1.4	0.3	0.3
GIIB	1.1	0.2	0.2	1.1	0.2	0.2	2.1	0.4	0.4
GIV	1.4	0.3	0.3	1.5	0.2	0.3	2.8	0.5	0.5
GV	0.4	0.1	0.1	0.5	0.1	0.1	0.9	0.2	0.1
IA1125	0.2	--	--	0.2	--	--	0.4	--	--
L1011	0.3	--	--	0.3	--	0.1	0.6	0.1	0.1
L188	--	--	--	--	--	--	--	--	--
LEAR25	2.1	0.4	0.3	2.2	0.3	0.3	4.3	0.7	0.5
LEAR35	3.6	0.6	0.4	3.7	0.4	0.5	7.3	1.0	1.0
MD11GE	2.3	0.8	1.5	2.7	0.3	1.7	5.0	1.1	3.2
MD11PW	2.6	1.0	0.7	2.1	0.5	1.8	4.8	1.5	2.5
MD83	37.4	7.8	3.9	35.2	6.5	7.4	72.5	14.3	11.4
MD9028	0.4	0.1	0.9	0.9	--	0.5	1.3	0.1	1.4
MU3001	0.7	0.2	0.1	0.8	0.1	0.1	1.5	0.2	0.2
SD330	0.1	--	--	0.1	--	--	0.3	--	--
SF340	43.9	7.6	4.4	40.4	9.7	5.9	84.3	17.3	10.3
Total	**596.5**	**160.4**	**95.6**	**617.8**	**91.6**	**143.0**	**1,214.3**	**252.0**	**238.6**

Notes: Day: 7:00 a.m. to 6:59 p.m., Evening: 7:00 p.m. to 9:59 p.m., Night: 10:00 p.m. to 6:59 a.m.
Totals may not add to 100 percent due to rounding.
Cell values of "--" indicate less than 0.5 operation per day.

Source: Ricondo & Associates, Inc., based on LAWA 4th Quarter 2003 INM Input Files.
Prepared by: Ricondo & Associates, Inc., 2004

Table M-3

Run-Up Operations Summary: 2003 Baseline Conditions

INM Aircraft Type	Day	Evening	Night
737300	0.3	3.8	0.4
747400	1.0	--	--
757PW	4.3	--	0.8
767300	1.0	--	--
767CF6	0.7	--	3.4
A320	--	3.8	0.2
MD11GE	2.3	--	2.7
MD11PW	12.2	--	--
MD82	1.7	--	0.7
Total	**23.5**	**7.6**	**8.2**

Location:	Percent:	Duration: Average Run-up = 7.9 minutes
West Airfield Run-up Sites	47 percent	
East Airfield Run-up Site	53 percent	

Notes: Day: 7:00 a.m. to 6:59 p.m., Evening: 7:00 p.m. to 9:59 p.m., Night: 10:00 p.m. to 6:59 a.m.
Totals may not add to 100 percent due to rounding.
Cell values of "--" indicate less than 0.005 operation.

Source: Landrum & Brown, 2002; Landrum & Brown, based on interpolation of forecasted operations for Year 2005 conditions.
Prepared by: Ricondo & Associates, Inc., 2004

In order to determine the trip stage length of the departures and identify the appropriate departure profile for use in the INM, monitoring records were examined and combined by NMD with other available information about flight destinations. Airline schedules published in the Official Airline Guide (OAG) were used to verify destinations and trip lengths for each aircraft type/air carrier combination. A review of the available data showed that the standard profiles in the INM database reflect actual climb and descent patterns for departures and arrivals, respectively. This includes a three-degree approach slope and a variety of departure profiles depending on the trip length assigned to the operation. No new profiles were created for the 2003 Baseline condition.

M.1.3.3 Runway Use

The LAWA noise and operations monitoring system records departure and arrival operations on each runway on the airfield. As such, it provides a valuable resource for determining actual runway use percentages over the course of 2003.

The runway system in place in 2003 is shown in **Table M-4** and illustrated on **Exhibit M-4**. Runway use percentages, shown in tabular format in **Table M-5**, were taken from records maintained by LAWA NMD. As the table shows, about 98 percent of departures were directed to the west over the ocean during the daytime, evening, and nighttime hours. Approximately 95 percent of all arrivals landed from the east during the day and about 67 percent landed from the east during nighttime hours. As prescribed by the preferred runway use procedure, most departures (east and west flow) operated from the inboard runways (7L-25R and 6R-24L) while arrivals landed on the outboard runways (6L-24R and 7R-25L). For safety and efficiency reasons, FAA air traffic controllers operated departures on the outboard and arrivals on the inboard runways when needed. One important component of the airport's noise program that affects runway use is the over-ocean procedure between midnight and 6:30 a.m. The procedure calls for all arrivals to land from the west and departures to operate to the west. Along with the voluntary preferential runway use program, most westbound departures used the inboard Runway 25R while most arrivals during over-ocean procedures operated on Runway 6R or Runway 7L. Under certain circumstances, aircraft operated on both the north and south outboard runways, but direction of flight continued over the ocean between midnight and 6:00 a.m.

Table M-4

LAX Runway Configuration: 2003 Baseline Conditions

Runway	Length (feet)	Displaced Threshold (feet)
6R-24L	10,285	321 (Runway 6R)
6L-24R	8,925	0
7R-25L	11,096	0
7L-25R	12,091	957 (Runway 25R)

Source: Los Angeles World Airports
Prepared by: Ricondo & Associates, Inc., 2004

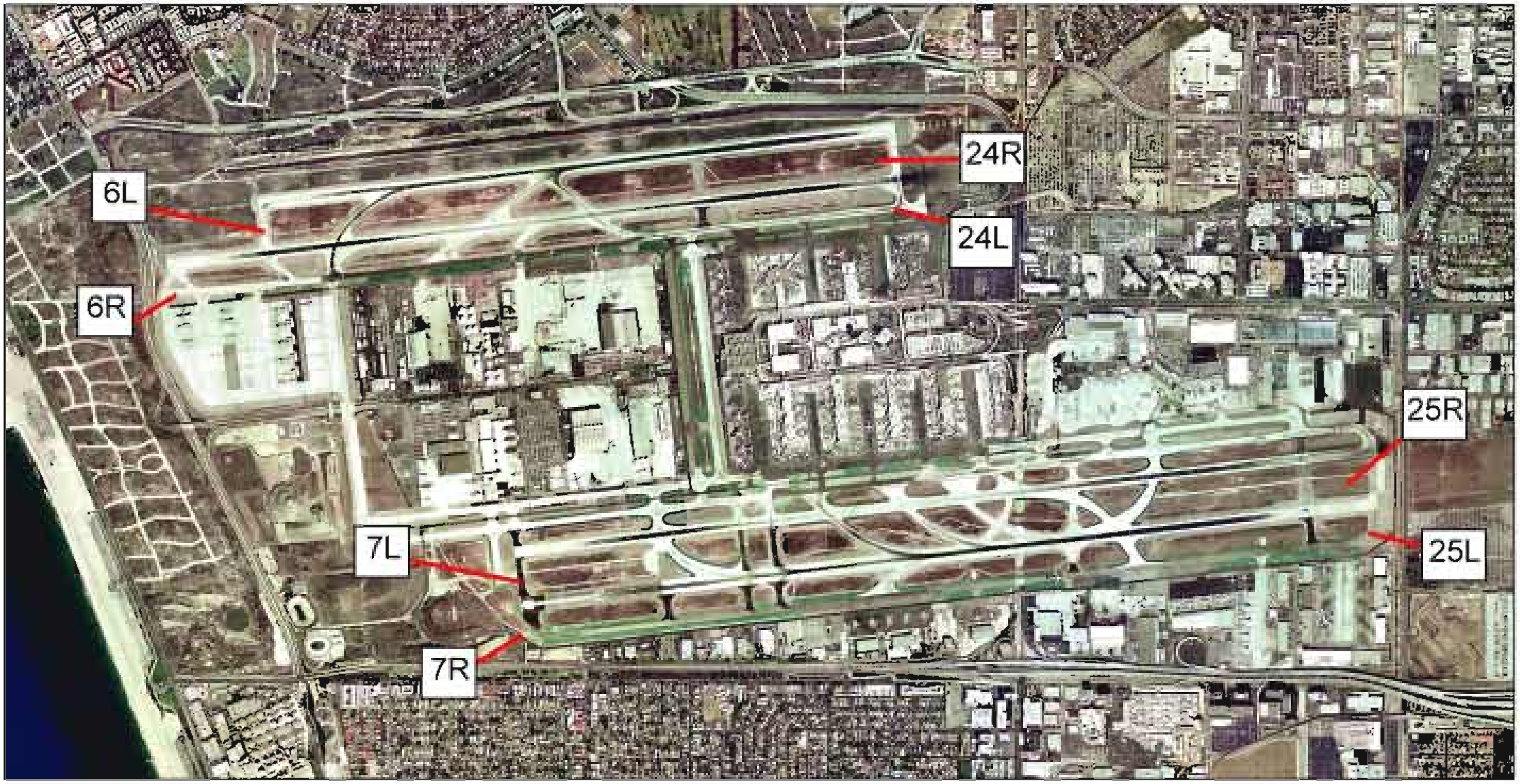
M.1.3.4 Aircraft Flight Tracks

As the LAWA noise and operations monitoring system captures FAA ARTS flight data, it assigns each aircraft arriving to or departing from the airfield to the closest predefined representative INM flight track. The system uses 52 departure and 22 approach tracks for this purpose. Most of the tracks represent west flow procedures (departures to the west and arrivals from the east), as indicated by an evaluation of traffic patterns at LAX (refer to the Draft LAX Master Plan, Chapter 2 and Appendix A of the Final LAX Master Plan . The 2003 INM flight tracks are displayed on **Exhibit M-5**. Aircraft typically follow predictable flight patterns as directed by Air Traffic Control staff, although some minor variations in practice do occur. This methodology provides adequate dispersion to accurately project the location of arrivals within the 65 dBA CNEL contour and beyond. Departures to the west, over Santa Monica Bay and the ocean, do not overfly populated areas and modeling of the track dispersion there is considered sufficient, given the reduced concern about adverse impacts over the water. By the time aircraft flying over the ocean turn back over land, their noise levels have dropped well below 65 CNEL.

The monitoring system radar data assignment to a flight track is stored with the record for each operation. The specific percentages of operations assigned to each flight tracks in the database are presented in **Table M-6**. The table shows the percentage of day, evening, and night operations assigned to each track for east/west flow arrivals and east/west flow departures. As depicted on Table M-6 and Exhibit M-5, approximately 91 percent and 88 percent of all arrivals and departures, respectively, operated on straight-in or straight-out tracks.

M.1.3.5 Aircraft Performance Variables

The INM provides aircraft performance data for arrival and departure profiles by numerous unique aircraft types. The data sets were created based on standard atmospheric conditions, but were adjusted in the INM to account for local environmental conditions, such as temperature, humidity, and elevation. The average temperature and relative humidity at LAX during 2003 was 63 degrees Fahrenheit and 70 percent, respectively. LAX airfield elevation is 126 feet above mean sea level (MSL).



Source. Eagle Aerial, 10-7-02
Prepared by: Ricondo & Associates, Inc.

Exhibit M-4

north Not to Scale

LAX Runway Layout for 2003 and 2005
South Airfield Improvement Project

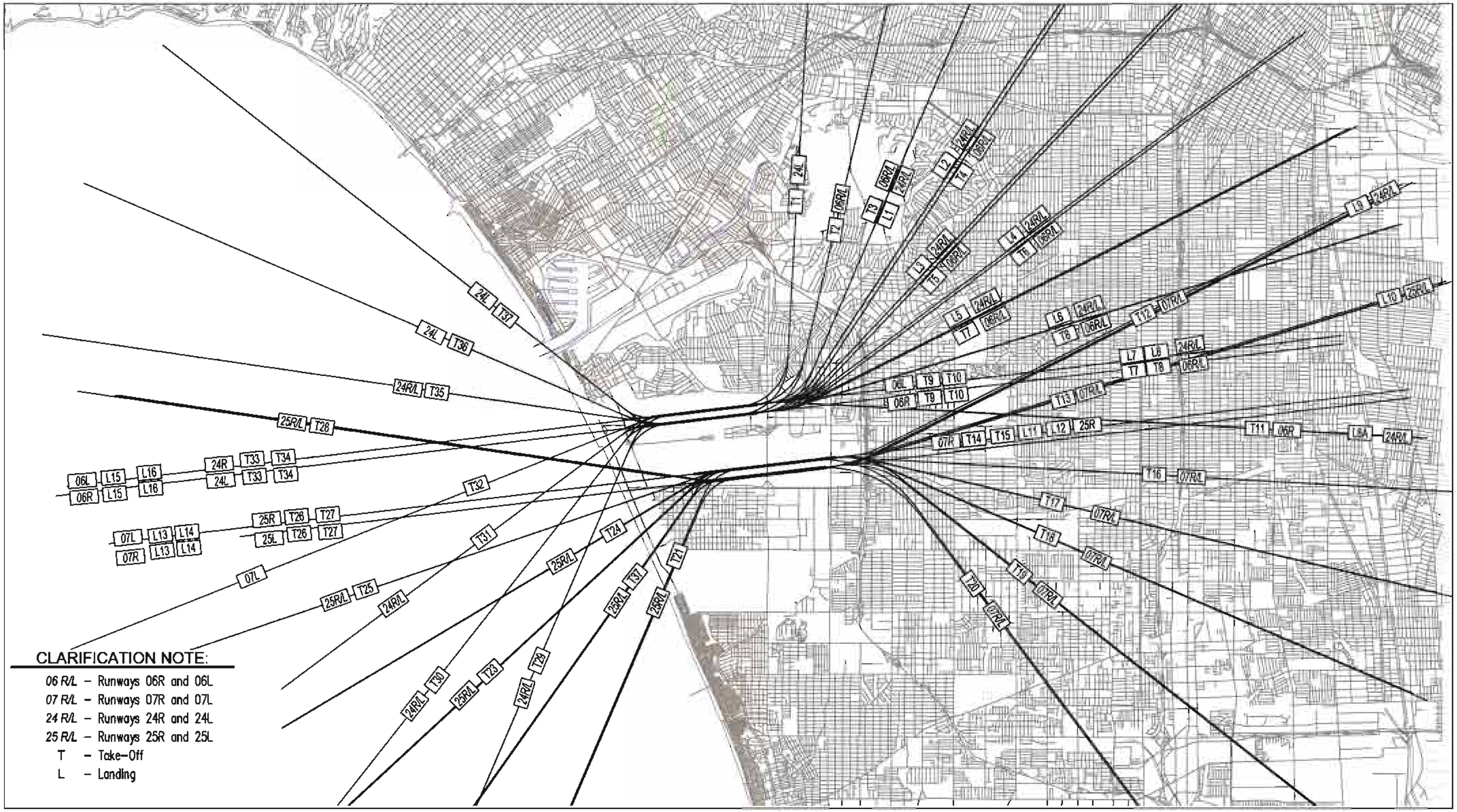
Table M-5

Annual Runway Use Percentages: 2003 Baseline Conditions

	Arrivals				Departures			
Runway	**Day**	**Evening**	**Night**	**Total**	**Day**	**Evening**	**Night**	**Total**
6L	1.0%	0.6%	1.9%	1.0%	--	--	--	--
6R	0.1%	0.1%	10.6%	1.3%	0.7%	0.5%	0.5%	0.7%
7L	0.1%	0.1%	11.3%	1.3%	0.9%	0.4%	1.2%	0.9%
7R	1.0%	0.4%	3.7%	1.2%	0.4%	0.3%	0.5%	0.4%
24L	2.8%	3.7%	1.8%	2.9%	44.2%	50.4%	25.8%	41.8%
24R	43.2%	41.6%	26.8%	41.0%	4.2%	3.3%	2.1%	3.8%
25L	48.1%	45.8%	40.7%	46.9%	6.6%	12.1%	13.3%	8.3%
25R	3.7%	7.8%	3.2%	4.4%	42.9%	33.0%	56.6%	44.1%
Total	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**

Notes: Day: 7:00 a.m. to 6:59 p.m., Evening: 7:00 p.m. to 9:59 p.m., Night: 10:00 p.m. to 6:59 a.m.
Totals may not add to 100 percent due to rounding.
Cell values of "--" indicate runway use of less than 0.05 percent.

Source: Ricondo & Associates, Inc., based on LAWA 4th Quarter 2003 INM Input files.
Prepared by: Ricondo & Associates, Inc., 2004



Source: Los Angeles International Airport Master Plan - SEIS/EIR, Landrum & Brown, October 2000
Prepared by: Ricondo & Associates, Inc.

Exhibit M-5

north Not to Scale

Flight Tracks
Baseline 2003 Conditions

Table M-6 (1 of 2)

Flight Track Utilization Percentages: 2003 Baseline Conditions

Arrivals

Runway	Track	Day	Evening	Night	Total
06L	L15	--	--	0.01%	0.01%
06L	L16	1.05%	0.56%	1.86%	1.05%
06R	L15	0.08%	0.07%	10.61%	1.26%
06R	L16	--	--	0.02%	0.01%
07L	L13	--	--	0.01%	0.01%
07L	L14	0.06%	0.07%	11.25%	1.32%
07R	L13	0.98%	0.43%	3.66%	1.18%
07R	L14	--	--	0.05%	0.01%
24L	L1	--	--	--	--
24L	L2	--	--	--	--
24L	L3	--	--	--	--
24L	L4	--	--	--	--
24L	L5	--	0.01%	--	0.01%
24L	L6	0.02%	--	0.02%	0.02%
24L	L7	0.30%	0.30%	0.15%	0.28%
24L	L8	2.48%	3.40%	1.61%	2.56%
24L	L8A	0.01%	0.02%	--	0.01%
24R	L1	--	--	--	--
24R	L2	--	--	0.01%	0.01%
24R	L3	0.01%	0.01%	0.01%	0.01%
24R	L4	0.03%	0.02%	0.06%	0.03%
24R	L5	0.06%	0.04%	0.04%	0.05%
24R	L6	0.31%	0.16%	0.19%	0.27%
24R	L7	42.71%	41.29%	26.42%	40.62%
24R	L8	0.05%	0.03%	0.04%	0.04%
24R	L8A	--	--	--	--
25L	L9	--	--	0.02%	0.01%
25L	L10	0.01%	--	0.01%	0.01%
25L	L11	0.22%	0.36%	0.17%	0.24%
25L	L12	47.90%	45.42%	40.54%	46.61%
25R	L9	--	--	0.01%	0.01%
25R	L10	0.01%	0.01%	0.02%	0.01%
25R	L11	3.11%	7.11%	2.91%	3.84%
25R	L12	0.58%	0.68%	0.28%	0.57%
Total		**100.00%**	**100.00%**	**100.00%**	**100.00%**

Departures

Runway	Track	Day	Evening	Night	Total
06L	T1	0.01%	--	--	0.01%
06L	T2	0.01%	--	0.01%	0.01%
06L	T3	0.01%	--	0.01%	0.01%
06L	T4	--	--	--	--
06L	T5	--	--	--	--
06L	T6	--	--	--	--
06L	T7	--	--	0.01%	0.01%
06L	T8	--	--	--	--
06L	T9	--	--	--	--
06L	T10	--	--	--	--
06R	T1	0.01%	0.01%	--	0.01%
06R	T2	0.02%	0.03%	--	0.02%
06R	T3	0.02%	--	0.01%	0.02%
06R	T4	0.03%	--	0.01%	0.02%
06R	T5	0.02%	0.01%	0.01%	0.01%
06R	T6	0.05%	0.04%	0.03%	0.04%
06R	T7	0.21%	0.15%	0.13%	0.19%
06R	T8	0.21%	0.13%	0.09%	0.18%
06R	T9	0.07%	0.02%	0.04%	0.06%
06R	T10	0.05%	0.04%	0.07%	0.05%
06R	T11	0.04%	0.06%	0.09%	0.05%
07L	T12	0.01%	--	0.03%	0.01%
07L	T13	0.15%	0.01%	0.16%	0.13%
07L	T14	0.38%	0.13%	0.51%	0.37%
07L	T15	0.26%	0.15%	0.34%	0.26%
07L	T16	0.06%	0.06%	0.11%	0.07%
07L	T17	0.01%	0.01%	0.04%	0.02%
07L	T18	0.01%	0.02%	0.01%	0.01%
07L	T19	--	0.01%	0.01%	0.01%
07L	T20	--	--	--	--
07R	T12	--	--	0.01%	0.01%
07R	T13	0.01%	--	0.02%	0.01%
07R	T14	0.03%	0.02%	0.07%	0.04%
07R	T15	0.13%	0.07%	0.18%	0.13%
07R	T16	0.09%	0.11%	0.12%	0.10%
07R	T17	0.03%	0.03%	0.02%	0.03%
07R	T18	0.03%	0.02%	0.02%	0.03%
07R	T19	0.03%	0.04%	0.02%	0.03%
07R	T20	0.02%	0.01%	0.01%	0.02%
24L	T29	--	--	--	--
24L	T30	0.31%	0.59%	0.09%	0.30%
24L	T31	1.18%	1.84%	0.92%	1.21%
24L	T32	2.57%	3.39%	4.22%	2.94%
24L	T33	31.99%	36.32%	16.32%	29.82%
24L	T34	7.20%	7.26%	3.68%	6.62%
24L	T35	0.96%	0.99%	0.52%	0.89%
24L	T36	0.02%	--	0.04%	0.02%
24L	T37	--	--	0.01%	0.01%
24R	T29	0.02%	0.03%	0.01%	0.02%
24R	T30	0.01%	0.05%	--	0.02%

Table M-6 (2 of 2)

Flight Track Utilization Percentages: 2003 Baseline Conditions

Arrivals						Departures					
Runway	**Track**	**Day**	**Evening**	**Night**	**Total**	**Runway**	**Track**	**Day**	**Evening**	**Night**	**Total**
						24R	T31	0.01%	0.02%	0.01%	0.02%
						24R	T32	0.05%	0.04%	0.09%	0.06%
						24R	T33	0.13%	0.18%	0.22%	0.15%
						24R	T34	2.49%	1.94%	0.98%	2.18%
						24R	T35	1.44%	1.00%	0.73%	1.27%
						24R	T36	0.06%	0.03%	0.04%	0.05%
						24R	T37	0.01%	0.01%	0.04%	0.01%
						24R	T38	0.01%	--	0.01%	0.01%
						25L	T21	--	0.03%	0.01%	0.01%
						25L	T22	--	--	--	--
						25L	T23	0.01%	0.02%	0.02%	0.01%
						25L	T24	0.09%	0.11%	0.20%	0.11%
						25L	T25	1.37%	2.34%	2.99%	1.75%
						25L	T26	4.73%	9.07%	9.38%	5.98%
						25L	T27	0.41%	0.45%	0.60%	0.45%
						25L	T28	0.02%	0.05%	0.04%	0.03%
						25R	T21	--	--	--	--
						25R	T22	0.01%	--	0.01%	0.01%
						25R	T23	0.01%	--	0.01%	0.01%
						25R	T24	0.05%	0.05%	0.10%	0.06%
						25R	T25	0.36%	0.43%	0.85%	0.45%
						25R	T26	5.76%	7.14%	10.21%	6.65%
						25R	T27	35.81%	24.63%	44.56%	36.07%
						25R	T28	0.88%	0.77%	0.88%	0.87%
						Total		**100.00%**	**100.00%**	**100.00%**	**100.00%**

Notes: Day: 7:00 a.m. to 6:59 p.m., Evening: 7:00 p.m. to 9:59 p.m., Night: 10:00 p.m. to 6:59 a.m.
Totals may not add to 100 percent due to rounding.
Cell values of "--" indicate runway use of less than 0.005 percent.

Source: Ricondo & Associates, Inc., based on LAWA 4th Quarter 2003 INM Input files.
Prepared by: Ricondo & Associates, Inc., 2004

M.1.3.6 Contour Calculation

The LAWA noise and operations monitoring system reports data in a format that is readily transferred to the INM. Once the adjustments to the number and type of operations were completed, as discussed in Subsection M.1.3.2, INM 6.1 was used to produce CNEL contours for 65, 70, and 75 dBA. The noise exposure areas include aircraft noise events caused by aircraft flight activity as well as departure noise from the start of takeoff roll and reverse thrust noise during the landing roll. The CNEL exposure areas include noise from maintenance run-up operations, but do not include aircraft movements on taxiways.

The 2003 CNEL exposure areas presented in Section 4.5 differ slightly from those published by LAWA in the 4th Quarter 2003 Report. The difference was due to an additional step NMD conducted to meet Title 21 requirements. Quarterly report noise exposure maps were adjusted based on field noise measurements. Adjusting the 2003 Baseline exposure boundaries based on measurement data would affect the integrity of comparing 2003 Baseline to Project (2005) conditions. In order to maintain an "apples-to-apples" comparison with a measurement-adjusted baseline, future year measurement values would need to be acquired, which is not possible. Because no measurements were available to adjust the Project (2005) condition, incorporating measured 2003 condition data would make a comparison between the two scenarios invalid. Therefore, the noise exposure maps were calculated and presented based on modeled noise alone without adjustments by measured data.

M.1.4 Criteria for Determination of Significant Impacts for Aircraft Noise

A number of scientific social surveys and experiments have been conducted to assess human reaction to aircraft noise. From those surveys and experiments, a set of guidelines was developed to reduce adverse impacts and improve land use compatibility around airports. A number of Federal agencies were historically involved in studying the effects of noise on people as well as establishing community noise exposure standards. While the FAA was most active in evaluating aircraft noise, agencies such as the USEPA, Department of Housing and Urban Development (HUD), and Department of Defense (DOD) also provided significant input to the criteria discussed in this section. The accepted criteria regarding significant aircraft noise impacts are reviewed in this section.

M.1.4.1 Human Response to Noise

The effect of noise on human activity is often described in terms of annoyance. For transportation-related noise, including that from aviation, hearing damage is recognized as very unlikely. A more stringent basis for evaluating acceptable noise levels is community annoyance. Noise annoyance is defined by the USEPA as any negative subjective reaction on the part of an individual or group. However, people tend to react to sound for a number of reasons. Individual reactions vary widely. It is usually said that "noise" is unwanted sound. An individual's interpretation of the source and meaning of a sound determines his or her initial reaction. Exhibit M-1 shows noise levels from typical community noise sources.

If a sound is interpreted as undesirable noise, the loudness of that sound is likely responsible for a reaction of annoyance or intrusion. Other factors also affect the intensity of that reaction, including the type of personal activity that the noise interrupted, such as talking on the telephone or sleeping. The degree of intensity or loudness of the intruding noise above more familiar sounds plays a significant role in individual annoyance. If a noise occurs occasionally (as does aircraft noise) rather than steadily (as does highway noise), an individual's reaction may vary throughout the day. During each occurrence, the individual may become highly annoyed, but would have little or no annoyance between occurrences. Predicting how a single individual reacts to noise based on his or her CNEL exposure is difficult, but research shows that groups of people tend to react to noise in measurable and predictable ways that correspond directly to CNELs.

Research into how noise interferes with specific activities continues and the Federal Interagency Committee on Aircraft Noise (FICAN) is currently considering other impact categories, such as how noise affects sleep and what effect noise might have on the ability of school children to learn.

M.1.4.2 Development of Federal Noise Regulations Based on Annoyance

As a result of the Noise Control Act of 1972, the EPA developed and published criteria with respect to environmental noise in a 1974 document entitled *Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety*, EPA Report No. 550/9-74-004, commonly referred to as the *Levels Document* (EPA 1974). The *Levels Document* prescribed that standards and regulations must account not only for the health and welfare considerations described in the criteria, but also for technical and economical feasibility. The term “health and welfare” as used in the Noise Control Act refers to the physical and mental well-being of human populations. The term also includes other indirect effects, such as annoyance, interference with communication and sleep, loss of value and utility of property, and effects on other living things (EPA 1973).

The “level of significance for assessing noise impacts” as identified by the State of California is 65 CNEL. Below this threshold, land use controls are unusual and are not eligible for Federal noise relief funds. Noise levels identified as typically compatible with various land uses, as discussed above, are based on annoyance reactions rather than on interference with specific activities such as sleep or speech.

Federal guidelines have been developed to describe the potential impact of noise levels on people. The federal standards for aircraft noise evaluation are formalized in FAA Order 5050.4A, *Airport Environmental Handbook*. Supporting these standards, the Federal Interagency Committee on Noise (FICON) has identified 65 DNL as the 24-hour day-night average sound level at which most people become highly annoyed by noise.[3] Although sensitivity to noise is highly subjective, the 65 DNL noise level has been widely adopted as a reasonable criterion for measuring noise compatibility impacts.[4] Under FAA environmental policies and procedures, the federal impact standard is exceeded if analysis shows that the proposed project will cause noise sensitive areas to experience an increase in noise of 1.5 dBA DNL or more at or above 65 dBA DNL noise exposure (when comparing the future No Action/No Project condition against the proposed action alternative). The FICON also observed that some people may be highly annoyed by noise levels below 65 DNL, and identified a 3 dBA increase in DNL, which represents a doubling of noise energy, as a change which may be perceptible to people in areas outside of the 65 DNL contour.

When 1.5 dBA increases occur within the 65 DNL contour, the FICON criteria call for the identification of noise-sensitive uses experiencing an increase of 3 dBA within the 60 to 65 DNL

[3] Federal Interagency Committee On Noise, Federal Agency Review of Selected Airport Noise Analysis Issues (August 1992).

[4] California has adopted the Community Noise Equivalent Level (CNEL), which is similar to DNL but applies an additional penalty of 4.77 decibels to operations that take place between 7 p.m. and 9:59 p.m. The use of CNEL as an alternative to DNL is accepted by the federal agencies regulating noise impacts.

contour.[5] This information is provided to the public and decision-makers for informational purposes. The FAA uses this information during its consideration of potential mitigation such as noise abatement flight procedures for these areas. FAA has adopted regulations and guidance governing airport noise compatibility planning which incorporate the FICON criteria.[6]

The 1.5 CNEL threshold is derived from FAA Order 5050.4A and FAA Order 1050.1D and is accepted here as a CEQA threshold of significance to describe significant increases of noise exposure. When there are 1.5 CNEL increases within the 65 CNEL contour of a build alternative, compared to the environmental baseline, CEQA has adopted federal standards set forth by FICON criteria to require the presentation of sensitive uses experiencing an increase of 3 CNEL when exposed to 60-65 CNEL. Additionally, increases of 5 CNEL in areas exposed to less than 60 CNEL are also to be considered for CEQA analyses.[7] This supplemental information regarding changes of exposure below 65 CNEL does not imply that there is a significant impact under state definitions. This assessment is provided to the public and decision-makers for informational purposes.

M.1.4.3 Nighttime Awakening Criteria

Sleep is not a continuous, uniform condition, but a complex series of states through which the brain progresses in a cyclical pattern. Arousal or awakening from sleep is a function of a number of factors that include age, sex, sleep stage, noise level, noise event frequency, noise quality, and pre-sleep activity. Individuals differ in their physiology, behavior, habitation, and ability to adapt to noise; therefore, few studies have attempted to establish noise criterion levels for sleep disturbance. Of the studies that have been conducted, both methodology and results varied widely. Various conclusions make the determination of a significant threshold of noise impact related to sleep disturbance difficult to establish as an unequivocal standard. However, LAWA evaluated the available guidance on sleep disturbance, including FICAN findings in its most recent report, *Effects of Aviation Noise on Awakenings from Sleep* (1997).

After careful consideration, LAWA adopted a threshold for nighttime (10 p.m. to 7 a.m.) awakenings using the A-weighted Sound Exposure Level (SEL). A “windows open” SEL threshold value at which 10 percent of the population may be awakened was determined. The threshold was further refined to specify that the noise event that awakens 10 percent of the people should not occur more often than once every 10 nights.

To determine the interior SEL, which would satisfy the LAWA awakening threshold, the FICAN report provides a predictive curve and associated formula ($Awakenings = 0.0087 \times (SEL\text{-}30)^{1.79}$), which indicates that a noise event at 81 dBA SEL would awaken 10 percent of the population. The difference between the interior noise level and the exterior noise level with the windows open is taken from Aerospace Information Report (AIR) 1081 by the Society of Automotive Engineers (SAE). The document indicates that, for bedrooms in the LAX area, the exterior-to-interior sound attenuation averages 14.3 dBA. Adding 14.3 to 81 dBA gives an exterior noise level of 95 dBA SEL. Because this is the level at which 10 percent of the population awakenings may occur and the

[5] The FICON report noted that in practice, an increase of 3 dBA or more will not occur in the 60 to 65 DNL contour unless there is at least a 1.5 dBA increase within the 65 DNL contour.

[6] U.S. Department of Transportation, Federal Aviation Administration, Land Use Compatibility Guidelines, Federal Aviation Regulation (FAR) Part 150; Federal Aviation Administration, Order 5050.4A, Airport Environmental Handbook, October 1985; Federal Aviation Administration, Order 1050.1D, Policies and Procedure for Considering Environmental Impacts, June 2001.

[7] City of Los Angeles, Draft L.A. CEQA Thresholds Guide, May 14, 1998.

goal is to stay beneath this threshold, LAWA concluded its findings and identified 94 dBA SEL as a reasonable threshold of significance.

To determine the location of the 94 dBA threshold, analysts used the Number-of-events Above (NA) metric discussed in Subsection M.1.1.2. NA was not computed directly by the INM, but rather was computed during post-processing from refined INM grid data. The process required producing a dense grid of points capturing how often any flight operation reaches or exceeds 94 dBA during the course of the nighttime period. The grids were searched for points where at least one event exceeding 94 dBA SEL every 10 nights may occur. These "0.1 number of events over 94 dBA SEL" points were connected to form an area showing the areas within jurisdictions where individuals may be awakened by aircraft noise events exceeding 94 dBA SEL.

Appendix S-C1 of the LAX Master Plan Final EIR, provides additional detail related to LAWA's sleep disturbance threshold of significance.

M.1.4.4 School Disruption Criteria

Aircraft noise interfering with speech communication is a primary cause of annoyance to individuals on the ground. The quality of speech communication is also important in classrooms, offices, and industrial settings. This type of disruption may cause fatigue and vocal strain for individuals who attempt to communicate over the noise. Depending on the setting, different noise levels can cause various levels of speech intelligibility. As a result, no accepted thresholds of significance for speech interference exist. Due to the public sensitivity to speech interference, considerable research continues to be conducted, particularly in the area of classroom acoustics and the effect of noise on learning.

In the Levels Document, the EPA (1974) identified a goal of an indoor 24-hour average level ($L_{eq(24)}$) of 45 dBA. The goal was selected based on the intelligibility of sentences during steady noise. For an average adult with normal hearing and fluency in the language, steady background sound levels indoors of up to 45 dBA were expected to allow 100 percent intelligibility of sentences. The same analysis yielded 99 percent sentence intelligibility for background levels at or below 54 dBA, and yielded less than 10 percent intelligibility for background levels above 73 dBA. The function used in the Levels Document proved to be especially sensitive to changes in sound level between 65 dBA and 75 dBA. For example, a 1 dBA increase in background sound level from 70 dBA to 71 dBA yields a 14 percent decrease in sentence intelligibility. No threshold required to preserve speech intelligibility in the classroom was established.

LAWA conducted a comprehensive review of the available speech interference research data and established a preliminary set of informational guidelines for determining noise thresholds in the classroom. As noted above, research addressed steady noise. One of LAWA's criteria was based on a steady noise approach. This approach was taken from a new standard recently published by the American National Standards Institute (ANSI) for interior classroom noise.

Because aircraft noise is intermittent, a second threshold was needed to reflect how aircraft noise events might interrupt spoken communication among small and large group instruction. Because classroom learning experience is sometimes captured by large group lectures and by one-on-one or small group discussions. The intermittent noise criteria included two different thresholds. For one of the thresholds, it was assumed that the teacher must be heard approximately 20 feet away as though in a lecture to a large group of students. The second threshold applied to small group communication where the distance the voice must carry was assumed to be approximately 6 feet.

These three thresholds were applied to the typical classroom day of 8 a.m. to 4 p.m. in the LAX environs, and incorporated two different noise metrics, each of which is defined in Subsection M.1.1.2. The steady noise threshold uses the eight-hour Equivalent Sound Level ($L_{eq(8)}$) while the two intermittent noise thresholds (for large and small group communication) use the Maximum Sound Level (L_{max}). The thresholds are defined as follows:

Steady Noise Threshold: The ANSI standard was designed to keep interfering steady-state noise at or below an hourly L_{eq} of 35 dBA in the classroom. The threshold applied to mechanical equipment installed within the classroom, such as an air conditioner. As stated in the LAX Master Plan Final EIR, LAWA concluded that arrivals frequently pass over schools located under the approach path. During arrival peak periods, aircraft noise levels can become steady occurrences. Therefore, LAWA approved the use of the ANSI standard as a preliminary threshold of significance. To convert this standard to an exterior sound level, LAWA used pre- and post-measurement data collected as part of its school sound insulation efforts. The data reflected an average 29 dBA outside-to-inside noise reduction with windows closed. Therefore, adding 29 dBA to 35 dBA yields an exterior threshold of 64 dBA hourly $L_{eq(8)}$.

Intermittent Noise Thresholds: Two thresholds were established for intermittent noise exposure in the classroom. Both were based on an August 1992 report published by FICON, a precursor to FICAN. The FICON report showed that, at a distance of 20 feet (the large group criterion), the in-classroom noise level should not exceed an L_{max} of 55 dBA. At a distance of 6 feet (the small group criterion), the threshold increases to 65 dBA L_{max}. An exterior L_{max} threshold was calculated by adding 29 dBA to the large and small group criteria. The addition of classroom attenuation with windows closed yielded an exterior L_{max} threshold of 84 dBA for large group instruction and 94 dBA L_{max} for small group instruction. Note that the 94 dBA threshold in terms of L_{max} is different than the sleep disturbance threshold of 94 dBA SEL. Because SEL captures all the energy in the sound event, the SEL for a sound event that registered a maximum level of 94 would be a larger number.

To quantify the noise impact in terms of classroom disruption during the school day, the Time Above (TA) supplemental metric was used for each threshold. TA reports the number of minutes for each school day (8 a.m. to 4 p.m.) that the threshold levels were exceeded. The analysis was conducted for each of the schools in the noise sensitive receptors list. Appendix S-C1 of the LAX Master Plan Final EIR provides additional information related to how the thresholds were derived.

For this EIR aircraft noise analysis, the guidelines described above were used to assess potential classroom speech interruptions caused by aircraft noise. As proposed in the LAX Master Plan Final EIR, the thresholds may be supplemented by the findings of a separate study programmed as LAX Master Plan EIR Mitigation Measure MM-LU-3, Conduct Study of the Relationship Between Aircraft Noise Levels and the Ability of Children to Learn. This comprehensive study to be conducted by LAWA will seek to determine what, if any, measurable relationship may be present between learning and the disruptions caused by aircraft noise at various levels. Based on the findings, an acceptable replacement threshold of significance for classroom disruption will be established for both specific and sustained aircraft noise events. Such findings will not be finalized prior to the completion of this EIR.

M.1.4.5 Land Use Compatibility

Estimates of total noise exposure, expressed in CNEL, resulting from aircraft operations are interpreted in terms of their “compatibility” with specific land uses. Suggested compatibility guidelines for evaluating land uses in aircraft noise exposure areas (A-weighted decibels only) were developed by both the FAA and the California Department of Transportation, Division of Aeronautics, and are shown in **Tables M-7a** and **M-7b,** respectively. These guidelines are well supported by scientific studies regarding how people respond to noise. However, they are advisory in nature and must be adopted (or modified and adopted) by local planning and zoning departments to have effect.

The guidelines reflect the fact that, statistically, people vary in their responses to noise. Therefore, the land use/noise level correlations in the table may not accurately assess an individual's perception of his or her actual noise environment. To use Table M-7a, compatible or incompatible land use is determined by comparing the predicted or measured CNEL at a parcel(s). Each generalized land use listed in Table M-7a includes a wide range of human activities that may be more or less sensitive to aircraft noise intrusions. CNELs in the table are interpreted only as general guidelines to indicate the effect of aircraft noise on people living and working in areas surrounding an airport. Table M-7b presents a more concise list of those land uses considered incompatible for aircraft noise impact areas by the State of California.

M.1.4.6 Aircraft Noise Mitigation Program (ANMP)

Pursuant to the land use compatibility requirements of the California Airport Noise Standards (California Code of Regulations, Title 21, subchapter 6), the City of Los Angeles has the responsibility to mitigate noise impacts or to eliminate incompatible land use within the communities surrounding the airport. The airport is currently operating under a variance, which became effective on March 21, 2001. LAWA is currently in the process of acquiring a new variance.

The variance can be extended as long as LAWA shows that every effort is being made to implement programs that are reducing noise impacts to an acceptable level during a reasonable time period. As required by the variance, LAWA requests that each local jurisdiction affected by noise prepare its own ANMP for its own affected area. LAWA is also responsible for creating a composite ANMP for the entire airport noise impact area. The composite ANMP serves as a basis for setting reasonable funding levels for each local jurisdiction. Jurisdictions included in the composite ANMP include unincorporated Los Angeles County, the City of Los Angeles, the City of Inglewood, and the City of El Segundo.

The noise impact area surrounding the airport includes existing land uses that are considered incompatible because they are exposed to 65 CNEL or higher. Incompatible land use is defined under Title 21 as residences, schools, hospitals, and churches exposed to 65 CNEL or higher. The ANMP incorporates two noise mitigation techniques to convert incompatible land uses to compatible ones:

- Sound insulate structures
- Acquisition of property followed by converting its use to compatible status

Table M-7a

FAA Suggested Land Use Compatibility Guidelines in Aircraft Noise Exposure Areas

Land Use	Yearly Day-Night Average Sound Level (DNL) in Decibels					
	Below 65	65-70	70-75	75-80	80-85	Over 85
Residential						
Residential, Other than Mobile Homes and Transient Lodgings	Y	N[1]	N[1]	N	N	N
Mobile Home Parks	Y	N	N	N	N	N
Transient Lodgings	Y	N[1]	N[1]	N[1]	N	N
Public Use						
Schools	Y	N[1]	N[1]	N	N	N
Hospitals, Nursing Homes	Y	25	30	N	N	N
Churches, Auditoriums, and Concert Halls	Y	25	30	N	N	N
Governmental Services	Y	Y	25	30	N	N
Transportation	Y	Y	Y[2]	Y[3]	Y[4]	Y[4]
Parking	Y	Y	Y[2]	Y[3]	Y[4]	N
Commercial Use						
Offices, Business and Professional	Y	Y	25	30	N	N
Wholesale and Retail - Building Materials, Hardware, and Farm Equipment	Y	Y	Y[2]	Y[3]	Y[4]	N
Retail Trade, General	Y	Y	25	30	N	N
Utilities	Y	Y	Y[2]	Y[3]	Y[4]	N
Communication	Y	Y	25	30	N	N
Manufacturing and Production						
Manufacturing, General	Y	Y	Y[2]	Y[3]	Y[4]	N
Photographic and Optical	Y	Y	25	30	N	N
Agriculture (except livestock) and Forestry	Y	Y[6]	Y[7]	Y[8]	Y[8]	Y[8]
Livestock Farming and Breeding	Y	Y[6]	Y[7]	N	N	N
Mining and Fishing, Resource Production, and Extraction	Y	Y	Y	Y	Y	Y
Recreational						
Outdoor Sports Arenas and Spectator Sports	Y	Y[5]	Y[5]	N	N	N
Outdoor Music Shells, Amphitheaters	Y	N	N	N	N	N
Nature Exhibits and Zoos	Y	Y	N	N	N	N
Amusement Parks, Resorts, and Camps	Y	Y	Y	N	N	N
Golf Courses, Riding Stables, and Water Recreation	Y	Y	25	30	N	N

Notes:

1/ Where the community determines that residential or school uses must be allowed, measures to achieve outdoor to indoor Noise Level Reduction (NLR) of at least 25 dB and 30 dB should be incorporated into building codes and be considered in individual approvals. Normal residential construction can be expected to provide a NLR of 20 dB, thus, the reduction requirements are often stated as 5, 10, or 15 dB over standard construction and normally assume mechanical ventilation and closed windows year round. However, the use of NLR criteria will not eliminate outdoor noise problems.

2/ Measures to achieve NLR of 25 dB must be incorporated into the design and construction of portions of these buildings where the public is received, office areas, noise-sensitive areas, or where the normal noise level is low.

3/ Measures to achieve NLR of 30 dB must be incorporated into the design and construction of portions of these buildings where the public is received, office areas, noise-sensitive areas, or where the normal noise level is low.

4/ Measures to achieve NLR of 35 dB must be incorporated into the design and construction of portions of these buildings where the public is received, office areas, noise-sensitive areas, or where the normal noise level is low.

5/ Land use compatible provided special sound reinforcement systems are installed.

6/ Residential buildings require a NLR of 25.

7/ Residential buildings require a NLR of 30.

8/ Residential buildings not permitted.

The designations contained in this table do not constitute a Federal determination that any use of land covered by the program is acceptable under Federal, State, or local law. The responsibility for determining the acceptable and permissible land uses and the relationship between specific properties and specific noise contours rests with the local authorities. FAA determinations under Part 150 are not intended to substitute federally determined land uses for those determined to be appropriate by local authorities in response to locally determined needs and values in achieving noise compatible land uses. Nursing Homes and Hospitals, Convalescent are used interchangeably throughout this analysis.

Y (Yes)	Land Use and related structures compatible without restrictions.
N (No)	Land Use and related structures are not compatible and should be prohibited.
NLR	Noise Level Reduction (outdoor to indoor) to be achieved through incorporation of noise attenuation into the design and construction of the structure.
25, 30, 35	Land Use and related structures generally compatible; measures to achieve or NLR of 25, 30, or 35 dB must be incorporated into design and construction of structure.

Source: U.S. Department of Transportation, Federal Aviation Administration, Federal Aviation Regulations Part 150, *Airport Noise Compatibility Planning*, Code of Federal Regulations, Title 14, Chapter I, Subchapter I, Part 150, Table 1, January 18, 1985, as amended

Prepared by: Ricondo & Associates, Inc., 2004

Table M-7b

California Incompatible Land Use Guidelines in Aircraft Noise Impact Areas

5014. Incompatible Land Uses within the Noise Impact Boundary

For the purpose of determining the size of the noise impact area, the following land uses are incompatible:
(a) Residences, including but not limited to, detached single-family dwellings, multi-family dwellings, high-rise apartments or condominiums, and mobile homes, unless:
(1) an avigation easement for aircraft noise has been acquired by the Airport proprietor, or
(2) the dwelling unit was in existence at the same location prior to January 1, 1989, and has adequate acoustic insulation to ensure an interior CNEL due to aircraft noise of 45 dBA or less in all habitable rooms. However, acoustic treatment alone does not convert residences having an exterior CNEL of 75 dBA or greater due to aircraft noise to a compatible land use if the residence has an exterior normally cognizable private habitable area such as a backyard, patio, or balcony. Or,
(3) the residence is a high rise apartment or condominium having an interior CNEL of 45 dBA or less in all habitable rooms due to aircraft noise, and an air circulation or air conditioning system as appropriate, or
(4) the Airport proprietor has made a genuine effort as determined by the department in accordance with adopted land use compatibility plans and appropriate laws and regulations to acoustically treat residences exposed to an exterior CNEL less than 80 dBA (75 dBA if the residence has an exterior normally occupiable private habitable area such as a backyard, patio, or balcony) or acquire avigation easements, or both, for the residences involved, but the property owners have refused to take part in the program, or
(5) the residence is owned by the Airport proprietor.
(b) Public and private schools of standard construction for which an avigation easement for noise has not been acquired by the Airport proprietor, or that do not have adequate acoustic performance to ensure an interior CNEL of 45 dBA or less in all classrooms due to aircraft noise;
(c) hospitals and convalescent homes for which an avigation easement for noise has not been acquired by the Airport proprietor, or that do not have adequate acoustic performance to provide an interior CNEL of 45 dBA or less due to aircraft noise in all rooms used for patient care;
(d) churches, synagogues, temples, and other places of worship for which an avigation easement for noise has not been acquired by the Airport proprietor, or that do not have adequate acoustic performance to ensure an interior CNEL of 45 dBA or less due to aircraft noise.

Source: California Department of Transportation, Division of Aeronautics, Noise Standards (Title 21, Subchapter 6, Article 1) 1990, Pages 225-226
Prepared by: Ricondo & Associates, Inc., 2004

According to the 2001 ANMP released October 2003, all incompatible land-uses encompassed by the 4th Quarter 1992 65 CNEL contour are eligible to participate in the ANMP. Further details related to the 2001 Noise Variance and the number of land uses mitigated can be found in Section 4.2 and Technical Report S-1 of the LAX Master Plan Final EIR,.

M.1.5 Project (2005) Aircraft Operations

This section describes the necessary input to compute the Project (2005) conditions noise exposure contours. The contours and associated impact compared to 2003 baseline were presented in detail in Section 4.4 of the LAX Master Plan Final EIR.

M.1.5.1 Project (2005) Forecast Aircraft Activity

The Final LAX Master Plan Appendix D and Appendix E, describe the development of the 2005 Alternative D activity and airfield/airspace movement conditions, which formed the basis for the 2005 aircraft noise exposure analyses documented in Appendix S-C1 of the LAX Master Plan Final EIR. This information served as the basis for all data assumptions and input for the Project (2005) conditions aircraft noise analysis. This section summarizes the 2005 aircraft activity forecast assumptions as developed in the LAX Master Plan. As discussed previously, the only difference between the two analyses is the INM version used for this EIR. For the previous 2005 analysis conducted for the LAX Master Plan Final EIR, INM 6.0c was used. For the purposes of this EIR analysis, INM 6.1 was used.

The Final LAX Master Plan, Appendix D, presented activity profiles developed for three interim years (2005, 2008, and 2013) in order to provide data for the LAX Master Plan Final EIR. For 2005, the following constraints were applied when determining the activity profile, airfield capacity, and input for airside simulations:

- Runway 25L is closed for reconstruction and the airfield operates in a three runway scenario
- No new gate facilities would be constructed by 2005
- Available gate facilities would be the same as in the No Action/No Project Alternative analyzed in the Draft LAX Master Plan

The simulations were used to develop source data for supplemental environmental analyses such as aircraft noise.

Appendix E of the Final LAX Master Plan documents the results of the airside simulation and analyses for Alternative D in 2005. The results of the analyses presented in the Final LAX Master Plan, Appendices D and E, as well as Appendix S-C1of the LAX Master Plan Final EIR for which they were developed, are reviewed below for Project (2005) conditions.

M.1.5.2 Operations by Aircraft Type, Time of Day, and Stage Length

Appendix D of the Final LAX Master Plan indicates that if the Alternative D scenario had four runways (instead of three), the airport capacity and resulting activity profile would be equivalent to the No Action/No Project Alternative, or 779,500 annual operations in 2005. With the airport reduced to three operating runways, it is likely that some flights may be eliminated that might otherwise have operated at LAX during that period. The reduced operations are expected to occur mainly among general aviation and commuter activities. In order to determine the actual three-runway capacity, SIMMOD was used. For the simulation, airlines were assumed to accept aircraft delays greater than the previous maximum 10 to 15 minutes due to the temporary nature of the runway closure. Based on the capacity of the three-runway airfield, Alternative D in 2005 is expected to accommodate approximately 745,000 annual operations or 2,041 operations on an average annual day.

The airfield simulation incorporated factors such as the available gates for various types of aircraft; the demand and anticipated delay factors on gates, taxiways, and runways; anticipated runway use patterns; and the airspace operating assumptions. From these elements, a design day activity profile was developed. This profile then formed the basis for forecasting average annual activity levels to be used in the INM modeling for 2005. **Table M-8** presents the forecast average annual day activity by aircraft type at LAX for Project (2005) conditions.

Aircraft maintenance ground run-up operations were also modeled. The same data used for the 2005 Alternative D noise analysis were carried over for the Project (2005) condition. The information was developed starting from the 2015 activity forecast levels, and adjusting the count of run-ups in proportion to numbers of annual operations. Fleet mix was also reviewed, and no major changes were required. Table M-3 summarizes the average annual day run-up activity for both 2003 Baseline and Project (2005) conditions.

Table M-8

Average Annual Day Operations and Fleet Mix: Project (2005) Conditions

INM Aircraft Type	Arrivals			Departures			All Operations		
	Day	Evening	Night	Day	Evening	Night	Day	Evening	Night
727EM2	5.9	1.1	1.9	7.9	--	--	13.8	1.1	1.9
737300	73.9	12.9	13.8	79.5	15.3	12.5	153.4	28.2	26.3
7373B2	20.5	7.1	4.6	19.5	3.9	4.0	40.0	10.9	8.5
737400	8.7	--	1.8	5.9	1.0	2.0	14.7	1.0	3.8
737500	23.9	12.0	3.1	26.0	7.8	6.0	49.9	19.8	9.1
737N9	--	3.6	3.6	0.2	--	2.5	0.2	3.6	6.0
747200	1.0	--	--	1.0	--	--	2.1	--	--
74720B	17.8	2.1	4.5	12.7	2.5	5.8	30.5	4.6	10.3
747400	37.4	14.5	4.6	35.8	3.5	15.3	73.2	18.0	19.9
757PW	43.8	15.8	12.8	40.7	13.6	17.3	84.4	29.5	30.2
757RR	51.0	13.1	18.0	50.5	15.6	15.6	101.4	28.7	33.6
767300	10.8	4.3	1.8	17.4	--	1.0	28.2	4.3	2.8
767CF6	17.9	2.8	4.6	21.8	1.8	4.3	39.6	4.6	8.9
767JT9	6.8	3.7	6.0	9.7	--	2.7	16.4	3.7	8.7
777200	12.8	1.9	6.2	17.9	0.8	1.9	30.7	2.7	8.1
A300	8.0	5.3	12.0	22.3	3.1	3.8	30.3	8.4	15.9
A310	7.8	1.8	--	4.6	1.2	2.0	12.4	3.0	2.0
A319	1.0	--	1.0	2.8	--	--	3.8	--	1.0
A320	15.1	9.2	4.8	21.9	2.4	6.2	37.0	11.6	10.9
A330	6.4	1.0	--	3.1	1.0	3.7	9.5	2.1	3.7
A340	5.8	3.6	--	5.1	--	4.9	10.9	3.6	4.9
CL601	7.5	2.6	--	8.3	2.0	--	15.9	4.6	--
CNA441	37.9	8.5	7.1	28.2	8.3	5.0	66.1	16.7	12.1
DC1010	13.1	4.8	5.7	21.9	0.7	4.0	35.0	5.5	9.7
DC1030	2.7	--	4.7	--	--	1.0	2.7	--	5.8
DC95HW	9.7	1.0	1.0	10.1	1.6	--	19.8	2.6	1.0
DHC6	45.2	8.5	7.6	48.1	12.8	2.4	93.3	21.4	10.1
DHC7	5.8	0.2	0.8	7.7	1.0	--	13.5	1.2	0.8
DHC8	1.0	--	0.2	1.0	1.0	0.2	2.0	1.0	0.4
DHC830	2.0	--	--	1.0	--	--	2.9	--	--
EMB120	20.2	5.3	2.5	21.9	6.9	0.1	42.1	12.1	2.6
F10062	2.6	1.4	--	1.0	2.4	1.6	3.6	3.7	1.6
F10065	3.8	--	--	3.9	--	--	7.7	--	--
HS748A	12.4	2.5	2.0	12.7	3.1	0.1	25.2	5.7	2.1
L1011	5.0	1.9	2.6	5.0	1.7	1.0	10.0	3.6	3.6
LEAR35	6.2	1.0	1.0	5.2	--	--	11.4	1.0	1.0
MD11GE	10.2	2.9	0.9	11.5	1.0	2.8	21.7	3.9	3.6
MD11PW	17.1	3.8	1.0	16.1	3.0	--	33.2	6.8	1.0
MD81	3.8	--	--	3.9	--	--	7.7	--	0.0
MD82	36.1	9.8	9.2	35.9	12.1	6.6	72.1	21.9	15.8
MD83	7.2	0.8	4.1	10.2	--	2.1	17.4	0.8	6.1
MD9028	18.3	2.0	1.0	18.7	0.8	3.8	37.1	2.7	4.8
SD330	3.0	1.6	1.9	5.1	3.1	--	8.1	4.7	1.9
SF340	38.6	6.6	5.5	36.3	6.3	7.2	74.9	12.8	12.7
Total	**685.9**	**180.9**	**163.8**	**720.1**	**141.0**	**149.5**	**1,405.9**	**321.9**	**313.3**

Notes: Day: 7:00 a.m. to 6:59 p.m., Evening: 7:00 p.m. to 9:59 p.m., Night: 10:00 p.m. to 6:59 a.m.
Totals may not add to 100 percent due to rounding.
Cell values of "--" indicate less than 0.05 operations per day.

Source: Ricondo & Associates, Inc., based on Landrum & Brown 2005 INM analysis, 2002 – Supplement to the Draft EIS/EIR App. SC-1.
Prepared by: Ricondo & Associates, Inc., 2004

M.1.5.3 Runway Use

Runway 7R-25L would be closed to all aviation activity during the construction period. The Final LAX Master Plan Appendix E describes simulation analyses of three primary runway configurations for 2005, including:

- West flow visual approaches: Visual
- West flow visual flight rules (VFR) instrument approaches: ILS/LDA
- West flow instrument meteorological conditions (IMC) approaches: IFR

East flow operations, which account for a very small proportion of total operations at LAX, were estimated by LAX Master Plan staff based on previous simulations. Airspace routes associated with these configurations were analyzed as a means to understand the effect of operating with three runways for Project (2005) construction conditions. The Final LAX Master Plan Appendix E reports that, overall, west flow procedures accounted for 94 percent of all operations in 2005 (Final LAX Master Plan, Appendix E, Table E-5) for all airfield configurations. The use of “over ocean” procedures at night is expected to continue in 2005 as it has in the 2003 Baseline condition. Airspace routes for 2005 Alternative D would be the same as the 2005 No Action/No Project Alternative and baseline conditions. Airspace arrival routes were defined from each arrival fix to the runway ends, and departure routes were defined from each runway end to each departure fix (refer to the Final LAX Master Plan Appendix E for further information).

While during normal conditions, the inboard runways are preferred for departures and the outboard runways for arrivals, during the Project (2005) construction period, Runway 7L-25R may be used for both arrivals and departures. The north airfield is expected to maintain the preferred inboard/outboard scenario such that Runway 6L-24R was assumed to be primarily an arrival runway and Runway 6R-24L a departure runway. Most heavy aircraft would be directed to land on Runway 7L-25R while narrow body aircraft arrivals would be directed to Runway 6L-24R. The spacing of heavy aircraft arrivals would enable controllers to launch departures from Runway 25R during west flow and still maintain a required five-mile separation between heavy aircraft arrivals. As illustrated by Figure E-16 in the Final LAX Master Plan Appendix E, KRAUZ and PARADISE fix traffic was split between the north and south complexes and Ontario fix traffic was assigned to the north complex to help off-load Runway 7L-25R traffic, serving as a mixed operation runway. Each of the three operating runways may be used for arrivals and departures in the VFR visual west flow configuration especially during peak departure and arrival hours. Delays that may be encountered as a result of using only three runways are expected to make flow control necessary during VFR visual conditions as well as for the lower capacity VFR instrument landing system (ILS) west flow, instrument flight rules (IFR) west flow, and east flow conditions. Runway use percentages for the Project (2005) conditions are reported in **Table M-9**.

Table M-9

Runway Use Percentages: Project (2005) Conditions

	Arrivals				Departures			
Runway	**Day**	**Evening**	**Night**	**Total**	**Day**	**Evening**	**Night**	**Total**
06L	2.8%	2.7%	0.6%	2.4%	0.3%	0.1%	--	0.2%
06R	--	--	24.8%	4.0%	2.8%	2.7%	3.1%	2.8%
07L	1.9%	1.8%	4.6%	2.3%	1.8%	1.0%	1.8%	1.7%
07R	-n/a-	-n/a-	-n/a-	-n/a-	-n/a-	-n/a-	-n/a-	-n/a-
24L	8.2%	12.7%	24.6%	11.6%	52.6%	55.9%	35.9%	50.6%
24R	51.7%	48.7%	14.0%	45.2%	5.0%	10.1%	0.1%	5.0%
25R	35.4%	34.1%	31.4%	34.5%	37.5%	30.3%	59.0%	39.7%
25L	-n/a-	-n/a-	-n/a-	-n/a-	-n/a-	-n/a-	-n/a-	-n/a-
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Notes: Day: 7:00 a.m. to 6:59 p.m., Evening: 7:00 p.m. to 9:59 p.m., Night: 10:00 p.m. to 6:59 a.m.
Totals may not add to 100 percent due to rounding.
Cell values of "--" indicate runway utilization of less than 0.05 percent.
n/a = not applicable

Source: Ricondo & Associates, Inc., based on Landrum & Brown, 2002 – Supplement to the Draft EIS/EIR App. SC-1.
Prepared by: Ricondo & Associates, Inc., 2004

M.1.5.4 Aircraft Flight Tracks and Profiles

The flight tracks provided in the LAX Master Plan Final EIR 2005 Alternative D aircraft noise study were maintained in this EIR. Based on conversations with FAA Air Traffic Control personnel, LAWA confirmed that no major air traffic changes are expected to occur prior to or after 2005[8]. Therefore, the existing 2005 SIMMOD and INM flight track geometry and use results remain applicable for this EIR. Further details related to the development and results of the 2005 SIMMOD analysis are available in Appendix E of the Final LAX Master Plan. **Table M-10** indicates the proportion of operations assigned to each INM flight track. **Exhibit M-6** illustrates the generalized INM flight tracks modeled for the Project (2005) condition.

M.1.6 Location Impact Analysis

The INM can be used to calculate noise characteristics for specific locations in the airport environs. As a supplement to the contour analyses presented in Section IV of the Draft LAX South Airfield EIR, this appendix presents an evaluation of aircraft noise levels at 586 separate sites located on and off Airport property. Consistent with the LAX Master Plan Final EIR, this number is less than the number of grid points evaluated in the LAX Master Plan Draft EIS/EIR through the elimination of duplications of multiple points on the same site. The grid point locations evaluated in this EIR consisted of the following:

[8] Letter from Mr. Tom Clancy, Federal Aviation Administration, Area Director of Western Terminal Operations. February 8, 2005.

Table M-10

Flight Track Use Percentages: Project (2005) Conditions

Arrivals						Departures					
Runway	**Track**	**Day**	**Evening**	**Night**	**Total**	**Runway**	**Track**	**Day**	**Evening**	**Night**	**Total**
06L	A6L1	0.10%	0.03%	--	0.07%	06L	D6L0	0.12%	--	0.03%	0.09%
06L	A6L2	0.16%	0.08%	--	0.12%	06L	D6L1	0.08%	--	--	0.05%
06L	A6L4	0.20%	0.22%	0.09%	0.19%	06L	D6LX	0.12%	0.10%	--	0.10%
06L	A6L6	0.83%	0.79%	0.12%	0.71%	06R	D6R0	0.27%	0.70%	0.17%	0.32%
06L	A6L7	1.52%	1.60%	0.36%	1.35%	06R	D6R1	0.55%	0.63%	0.50%	0.55%
06R	A6R1	--	--	24.01%	3.82%	06R	D6R4	0.09%	0.11%	0.00%	0.08%
06R	A6R2	0.01%	--	0.12%	0.03%	06R	D6R5	0.07%	0.07%	1.55%	0.29%
06R	A6R6	--	--	0.03%	--	06R	D6R6	1.42%	0.70%	0.76%	1.22%
06R	A6R7	--	--	0.30%	0.05%	06R	D6RW	0.19%	0.21%	0.03%	0.17%
06R	A6R8	--	--	0.36%	0.06%	06R	D6RX	0.22%	0.28%	0.07%	0.21%
07L	A7L1	--	--	2.67%	0.42%	07L	D7L0	0.05%	0.07%	0.03%	0.05%
07L	A7L2	0.07%	0.03%	0.03%	0.06%	07L	D7L1	0.23%	0.03%	0.16%	0.19%
07L	A7L3	0.10%	--	--	0.07%	07L	D7L4	0.61%	0.53%	0.27%	0.55%
07L	A7L4	0.52%	0.50%	0.58%	0.53%	07L	D7L5	0.70%	0.14%	1.30%	0.71%
07L	A7L5	0.04%	0.05%	--	0.03%	07L	D7LY	0.05%	0.10%	0.03%	0.05%
07L	A7L6	0.10%	0.08%	0.08%	0.09%	07L	D7LZ	0.16%	0.10%	0.03%	0.13%
07L	A7L7	0.33%	0.61%	0.27%	0.37%	24L	D4L0	4.55%	8.12%	0.83%	4.50%
07L	A7L8	0.72%	0.51%	0.95%	0.72%	24L	D4L1	14.62%	15.00%	12.64%	14.38%
24L	A4L2	0.11%	--	3.41%	0.62%	24L	D4L4	1.71%	1.97%	--	1.50%
24L	A4L4	3.53%	3.53%	0.44%	3.04%	24L	D4L5	5.12%	7.21%	8.60%	5.93%
24L	A4L6	0.01%	--	0.57%	0.10%	24L	D4L6	17.73%	10.36%	5.67%	14.92%
24L	A4L7	4.44%	9.19%	8.07%	5.85%	24L	D4LN	--	--	4.18%	0.62%
24L	A4L8	0.14%	--	12.10%	2.02%	24L	D4LW	3.18%	6.53%	1.74%	3.44%
24R	A4R2	3.98%	2.35%	0.06%	3.07%	24L	D4LX	5.66%	6.67%	2.29%	5.31%
24R	A4R4	3.99%	3.09%	1.28%	3.40%	24R	D4R0	2.69%	5.40%	0.10%	2.69%
24R	A4R5	0.20%	0.38%	--	0.20%	24R	D4R1	0.23%	--	--	0.16%
24R	A4R6	1.73%	1.33%	0.06%	1.40%	24R	D4RW	0.76%	0.97%	--	0.68%
24R	A4R7	21.36%	22.55%	6.73%	19.25%	24R	D4RX	1.30%	3.72%	--	1.44%
24R	A4R8	20.41%	18.97%	5.86%	17.85%	25R	D5R0	0.88%	1.24%	0.56%	0.88%
25R	A5R2	1.35%	0.56%	0.56%	1.08%	25R	D5R1	1.00%	0.09%	1.80%	0.99%
25R	A5R3	1.81%	--	--	1.21%	25R	D5R4	12.29%	14.80%	4.82%	11.53%
25R	A5R4	7.56%	9.43%	9.80%	8.25%	25R	D5R5	17.21%	6.75%	11.36%	14.89%
25R	A5R5	0.59%	1.84%	--	0.72%	25R	D5RN	--	--	37.63%	5.57%
25R	A5R6	2.14%	1.10%	2.02%	1.94%	25R	D5RV	0.19%	--	--	0.13%
25R	A5R7	11.46%	14.45%	11.03%	11.92%	25R	D5RX	0.84%	0.95%	--	0.73%
25R	A5R8	10.45%	6.72%	8.03%	9.41%	25R	D5RY	0.90%	2.47%	1.15%	1.16%
Total		**100.00%**	**100.00%**	**100.00%**	**100.00%**	25R	D5RZ	4.20%	3.97%	1.73%	3.80%
						Total		**100.00%**	**100.00%**	**100.00%**	**100.00%**

Notes: Day: 7:00 a.m. to 6:59 p.m., Evening: 7:00 p.m. to 9:59 p.m., Night: 10:00 p.m. to 6:59 a.m.
Totals may not add to 100 percent due to rounding.
Cell values of "--" indicate runway use of less than 0.005 percent.

Source: Ricondo & Associates, Inc., based on Landrum & Brown, 2002 – Supplement to the Draft EIS/EIR App. SC-1.
Prepared by: Ricondo & Associates, Inc., 2004

Source: Los Angeles International Airport Master Plan - SEIS/EIR, Landrum & Brown, October 2000
Prepared by: Ricondo & Associates, Inc.

Exhibit M-6

north Not to Scale

Flight Tracks
South Airfield Improvement Project

- 412 noise-sensitive facilities (churches, schools, nursing homes, parks, etc.) in the vicinity of the Airport and further detailed in the report on existing land use conditions.
- 180 sites located on a regular grid of points having spacing intervals of 3,000 feet along both north-south and east-west axes, generally patterned to include the area within the anticipated 60 CNEL exposure level associated with the project. The grid was also used in the estimation of various supplemental noise metrics. Although noise was computed at all locations on the regular grid, only sites that are located over land and off Airport property are reported in the following tables.

A listing and description of the noise sensitive facilities and regular grid points is provided in **Table M-11**. X and Y coordinates (in feet) for the sites are centered on the Tom Bradley International Terminal. In Section 4.5 of this Draft EIR, Exhibit 4.5-1 depicts the locations of the regularly spaced grid points, Exhibit 4.5-2 shows the location of the 118 public and private schools in the Project area, Exhibit 4.5-3 indicates the location of 218 churches in the Project area, and Exhibit 4.5-4 depicts the location of 11 hospitals, 10 libraries, 27 nursing homes, and 29 parks in the Project area at which noise levels were computed.

Several noise metrics were computed for each grid point or noise-sensitive facility location. **Table M-12** lists and compares the 2003 Baseline Conditions and Project (2005) CNEL values for each noise-sensitive facility and grid point location. Although the variety of metrics provide interesting information, only CNEL has a regulatory significance in terms of decision making for environmental projects under both NEPA and CEQA.

Using the information in Table M-12, a determination may be made of which grid point locations are significantly impacted under the standard thresholds of compatibility used for environmental considerations of aircraft noise. Locations where the Project (2005) CNEL value is 1.5 decibels or greater than the 2003 Baseline Conditions CNEL value, are highlighted if the Project (2005) CNEL value is at least 65 decibels. Fifty-seven project area grid point locations meet the above criteria for significant noise increases. For this EIR, the primary method for identifying significant changes in CNEL was the use of the 1.5 CNEL difference contour and GIS parcel data. Those parcels that intersected the 1.5 CNEL difference contour were selected and reported as significantly impacted noise-sensitive uses. The information provided in Table M-12 provides noise levels associated with a specific location within each noise-sensitive parcel. The data in Table M-12 provides supplemental information to the public and decision-makers.

Tables M-13 through M-16 list and compare the 2003 Baseline Conditions and Project (2005) time above (TA) 65, 75, 85 and 95 decibels (in minutes per day) respectively, for each noise-sensitive facility and grid point location.

Tables M-17 and M-18 list and compare the 2003 Baseline Conditions and Project (2005) L_{eq} and L_{max} values, respectively, for each noise-sensitive facility and grid point location.

Table M-11 (1 of 12)

Location Points Description: Baseline 2003 Conditions

Grid Cell ID	Use	X Dist. (feet)[1]	Y Dist. (feet)[1]	Owner of Record per County Assessor
C08	Regular Grid	-15,000	9,000	Not Applicable
C09	Regular Grid	-15,000	12,000	Not Applicable
D06	Regular Grid	-12,000	3,000	Not Applicable
D07	Regular Grid	-12,000	6,000	Not Applicable
D08	Regular Grid	-12,000	9,000	Not Applicable
D09	Regular Grid	-12,000	12,000	Not Applicable
E07	Regular Grid	-9,000	6,000	Not Applicable
E08	Regular Grid	-9,000	9,000	Not Applicable
E09	Regular Grid	-9,000	12,000	Not Applicable
F02	Regular Grid	-6,000	-9,000	Not Applicable
F03	Regular Grid	-6,000	-6,000	Not Applicable
F07	Regular Grid	-6,000	6,000	Not Applicable
F08	Regular Grid	-6,000	9,000	Not Applicable
F09	Regular Grid	-6,000	12,000	Not Applicable
G01	Regular Grid	-3,000	-12,000	Not Applicable
G02	Regular Grid	-3,000	-9,000	Not Applicable
G03	Regular Grid	-3,000	-6,000	Not Applicable
G07	Regular Grid	-3,000	6,000	Not Applicable
G08	Regular Grid	-3,000	9,000	Not Applicable
G09	Regular Grid	-3,000	12,000	Not Applicable
H01	Regular Grid	0	-12,000	Not Applicable
H02	Regular Grid	0	-9,000	Not Applicable
H03	Regular Grid	0	-6,000	Not Applicable
H07	Regular Grid	0	6,000	Not Applicable
H08	Regular Grid	0	9,000	Not Applicable
H09	Regular Grid	0	12,000	Not Applicable
I01	Regular Grid	3,000	-12,000	Not Applicable
I02	Regular Grid	3,000	-9,000	Not Applicable
I03	Regular Grid	3,000	-6,000	Not Applicable
I07	Regular Grid	3,000	6,000	Not Applicable
I08	Regular Grid	3,000	9,000	Not Applicable
I09	Regular Grid	3,000	12,000	Not Applicable
J01	Regular Grid	6,000	-12,000	Not Applicable
J02	Regular Grid	6,000	-9,000	Not Applicable
J03	Regular Grid	6,000	-6,000	Not Applicable
J07	Regular Grid	6,000	6,000	Not Applicable
J08	Regular Grid	6,000	9,000	Not Applicable
J09	Regular Grid	6,000	12,000	Not Applicable
K01	Regular Grid	9,000	-12,000	Not Applicable
K02	Regular Grid	9,000	-9,000	Not Applicable
K03	Regular Grid	9,000	-6,000	Not Applicable
K05	Regular Grid	9,000	0	Not Applicable
K07	Regular Grid	9,000	6,000	Not Applicable
K08	Regular Grid	9,000	9,000	Not Applicable
K09	Regular Grid	9,000	12,000	Not Applicable
L01	Regular Grid	12,000	-12,000	Not Applicable
L02	Regular Grid	12,000	-9,000	Not Applicable
L03	Regular Grid	12,000	-6,000	Not Applicable
L04	Regular Grid	12,000	-3,000	Not Applicable
L05	Regular Grid	12,000	0	Not Applicable
L06	Regular Grid	12,000	3,000	Not Applicable
L07	Regular Grid	12,000	6,000	Not Applicable
L08	Regular Grid	12,000	9,000	Not Applicable

Table M-11 (2 of 12)

Location Points Description: Baseline 2003 Conditions

Grid Cell ID	Use	X Dist. (feet)[1]	Y Dist. (feet)[1]	Owner of Record per County Assessor
L09	Regular Grid	12,000	12,000	Not Applicable
M01	Regular Grid	15,000	-12,000	Not Applicable
M02	Regular Grid	15,000	-9,000	Not Applicable
M03	Regular Grid	15,000	-6,000	Not Applicable
M04	Regular Grid	15,000	-3,000	Not Applicable
M05	Regular Grid	15,000	0	Not Applicable
M06	Regular Grid	15,000	3,000	Not Applicable
M07	Regular Grid	15,000	6,000	Not Applicable
M08	Regular Grid	15,000	9,000	Not Applicable
M09	Regular Grid	15,000	12,000	Not Applicable
N01	Regular Grid	18,000	-12,000	Not Applicable
N02	Regular Grid	18,000	-9,000	Not Applicable
N03	Regular Grid	18,000	-6,000	Not Applicable
N04	Regular Grid	18,000	-3,000	Not Applicable
N05	Regular Grid	18,000	0	Not Applicable
N06	Regular Grid	18,000	3,000	Not Applicable
N07	Regular Grid	18,000	6,000	Not Applicable
N08	Regular Grid	18,000	9,000	Not Applicable
N09	Regular Grid	18,000	12,000	Not Applicable
O01	Regular Grid	21,000	-12,000	Not Applicable
O02	Regular Grid	21,000	-9,000	Not Applicable
O03	Regular Grid	21,000	-6,000	Not Applicable
O04	Regular Grid	21,000	-3,000	Not Applicable
O05	Regular Grid	21,000	0	Not Applicable
O06	Regular Grid	21,000	3,000	Not Applicable
O07	Regular Grid	21,000	6,000	Not Applicable
O08	Regular Grid	21,000	9,000	Not Applicable
O09	Regular Grid	21,000	12,000	Not Applicable
P01	Regular Grid	24,000	-12,000	Not Applicable
P02	Regular Grid	24,000	-9,000	Not Applicable
P03	Regular Grid	24,000	-6,000	Not Applicable
P04	Regular Grid	24,000	-3,000	Not Applicable
P05	Regular Grid	24,000	0	Not Applicable
P06	Regular Grid	24,000	3,000	Not Applicable
P07	Regular Grid	24,000	6,000	Not Applicable
P08	Regular Grid	24,000	9,000	Not Applicable
P09	Regular Grid	24,000	12,000	Not Applicable
Q01	Regular Grid	27,000	-12,000	Not Applicable
Q02	Regular Grid	27,000	-9,000	Not Applicable
Q03	Regular Grid	27,000	-6,000	Not Applicable
Q04	Regular Grid	27,000	-3,000	Not Applicable
Q05	Regular Grid	27,000	0	Not Applicable
Q06	Regular Grid	27,000	3,000	Not Applicable
Q07	Regular Grid	27,000	6,000	Not Applicable
Q08	Regular Grid	27,000	9,000	Not Applicable
Q09	Regular Grid	27,000	12,000	Not Applicable
R01	Regular Grid	30,000	-12,000	Not Applicable
R02	Regular Grid	30,000	-9,000	Not Applicable
R03	Regular Grid	30,000	-6,000	Not Applicable
R04	Regular Grid	30,000	-3,000	Not Applicable
R05	Regular Grid	30,000	0	Not Applicable
R06	Regular Grid	30,000	3,000	Not Applicable
R07	Regular Grid	30,000	6,000	Not Applicable

Table M-11 (3 of 12)

Location Points Description: Baseline 2003 Conditions

Grid Cell ID	Use	X Dist. (feet)[1]	Y Dist. (feet)[1]	Owner of Record per County Assessor
R08	Regular Grid	30,000	9,000	Not Applicable
R09	Regular Grid	30,000	12,000	Not Applicable
S01	Regular Grid	33,000	-12,000	Not Applicable
S02	Regular Grid	33,000	-9,000	Not Applicable
S03	Regular Grid	33,000	-6,000	Not Applicable
S04	Regular Grid	33,000	-3,000	Not Applicable
S05	Regular Grid	33,000	0	Not Applicable
S06	Regular Grid	33,000	3,000	Not Applicable
S07	Regular Grid	33,000	6,000	Not Applicable
S08	Regular Grid	33,000	9,000	Not Applicable
S09	Regular Grid	33,000	12,000	Not Applicable
T01	Regular Grid	36,000	-12,000	Not Applicable
T02	Regular Grid	36,000	-9,000	Not Applicable
T03	Regular Grid	36,000	-6,000	Not Applicable
T04	Regular Grid	36,000	-3,000	Not Applicable
T05	Regular Grid	36,000	0	Not Applicable
T06	Regular Grid	36,000	3,000	Not Applicable
T07	Regular Grid	36,000	6,000	Not Applicable
T08	Regular Grid	36,000	9,000	Not Applicable
T09	Regular Grid	36,000	12,000	Not Applicable
U01	Regular Grid	39,000	-12,000	Not Applicable
U02	Regular Grid	39,000	-9,000	Not Applicable
U03	Regular Grid	39,000	-6,000	Not Applicable
U04	Regular Grid	39,000	-3,000	Not Applicable
U05	Regular Grid	39,000	0	Not Applicable
U06	Regular Grid	39,000	3,000	Not Applicable
U07	Regular Grid	39,000	6,000	Not Applicable
U08	Regular Grid	39,000	9,000	Not Applicable
U09	Regular Grid	39,000	12,000	Not Applicable
V01	Regular Grid	42,000	-12,000	Not Applicable
V02	Regular Grid	42,000	-9,000	Not Applicable
V03	Regular Grid	42,000	-6,000	Not Applicable
V04	Regular Grid	42,000	-3,000	Not Applicable
V05	Regular Grid	42,000	0	Not Applicable
V06	Regular Grid	42,000	3,000	Not Applicable
V07	Regular Grid	42,000	6,000	Not Applicable
V08	Regular Grid	42,000	9,000	Not Applicable
V09	Regular Grid	42,000	12,000	Not Applicable
W01	Regular Grid	45,000	-12,000	Not Applicable
W02	Regular Grid	45,000	-9,000	Not Applicable
W03	Regular Grid	45,000	-6,000	Not Applicable
W04	Regular Grid	45,000	-3,000	Not Applicable
W05	Regular Grid	45,000	0	Not Applicable
W06	Regular Grid	45,000	3,000	Not Applicable
W07	Regular Grid	45,000	6,000	Not Applicable
W08	Regular Grid	45,000	9,000	Not Applicable
W09	Regular Grid	45,000	12,000	Not Applicable
X01	Regular Grid	48,000	-12,000	Not Applicable
X02	Regular Grid	48,000	-9,000	Not Applicable
X03	Regular Grid	48,000	-6,000	Not Applicable
X04	Regular Grid	48,000	-3,000	Not Applicable
X05	Regular Grid	48,000	0	Not Applicable
X06	Regular Grid	48,000	3,000	Not Applicable

Table M-11 (4 of 12)

Location Points Description: Baseline 2003 Conditions

Grid Cell ID	Use	X Dist. (feet)[1]	Y Dist. (feet)[1]	Owner of Record per County Assessor
X07	Regular Grid	48,000	6,000	Not Applicable
X08	Regular Grid	48,000	9,000	Not Applicable
X09	Regular Grid	48,000	12,000	Not Applicable
Y01	Regular Grid	51,000	-12,000	Not Applicable
Y02	Regular Grid	51,000	-9,000	Not Applicable
Y03	Regular Grid	51,000	-6,000	Not Applicable
Y04	Regular Grid	51,000	-3,000	Not Applicable
Y05	Regular Grid	51,000	0	Not Applicable
Y06	Regular Grid	51,000	3,000	Not Applicable
Y07	Regular Grid	51,000	6,000	Not Applicable
Y08	Regular Grid	51,000	9,000	Not Applicable
Y09	Regular Grid	51,000	12,000	Not Applicable
Z01	Regular Grid	54,000	-12,000	Not Applicable
Z02	Regular Grid	54,000	-9,000	Not Applicable
Z03	Regular Grid	54,000	-6,000	Not Applicable
Z04	Regular Grid	54,000	-3,000	Not Applicable
Z05	Regular Grid	54,000	0	Not Applicable
Z06	Regular Grid	54,000	3,000	Not Applicable
Z07	Regular Grid	54,000	6,000	Not Applicable
Z08	Regular Grid	54,000	9,000	Not Applicable
Z09	Regular Grid	54,000	12,000	Not Applicable
CH006	Church	18,362	851	Alfredo Figueroa
CH008	Church	-1,056	-6,191	American Baptist Churches of The
CH011	Church	33,776	-3,732	Amos Temple Christian Methodist
CH012	Church	34,672	611	Andrew & Carol Hammitt
CH019	Church	16,609	-6,394	Archdiocese of LA Educ & Welfare Corp
CH020	Church	16,609	-5,892	Archdiocese of LA Educ & Welfare Corp
CH022	Church	18,259	9,542	Archdiocese of LA Educ & Welfare Corp
CH025	Church	16,984	-6,155	Archdiocese of LA Educ & Welfare Corp
CH026	Church	772	5,897	Archdiocese of LA Educ & Welfare Corp
CH030	Church	37,397	-3,562	Archdiocese of LA Educ & Welfare Corp
CH031	Church	29,694	4,531	Arthur McGlothen
CH032	Church	34,999	-2,528	Assembly of Christian
CH037	Church	12,173	2,634	Bay-West LA Southern Crescent
CH044	Church	29,459	441	Beth Ezel Baptist Church
CH047	Church	36,169	6,797	Bethany Apostolic Church Inc
CH048	Church	36,695	2,519	Bethany Prayer Temple Church
CH049	Church	29,734	8,749	Bethel African Methodist
CH052	Church	28,386	11,458	Bethel Missionary Baptist Church
CH053	Church	32,138	10,827	Bethlehem Missionary Baptist Church
CH056	Church	29,496	10,032	Bill & Lillie English
CH058	Church	37,445	-3,804	Bobby Sheffield
CH060	Church	37,453	1,503	Bright Throne Missionary Baptist Church
CH062	Church	18,436	-9,362	Calvary Baptist Ch of Hawthorne
CH067	Church	24,220	9,999	Cedar Grove Baptist Church
CH069	Church	24,032	-1,953	Central Baptist Church
CH072	Church	36,144	10,802	Christ Centered Pentecostal Church
CH075	Church	36,127	-1,223	Christian Reformed Board Of
CH076	Church	36,351	8,763	Christian Tabernacle Inc
CH078	Church	30,942	225	Christ's Community Church LA
CH082	Church	15,556	4,179	Church of God Pentecostal INC
CH083	Church	-5,007	6,170	Church of Messiah Congregational
CH087	Church	15,502	10,235	Church of Religious Science of Inglewood

Table M-11 (5 of 12)

Location Points Description: Baseline 2003 Conditions

Grid Cell ID	Use	X Dist. (feet)[1]	Y Dist. (feet)[1]	Owner of Record per County Assessor
CH094	Church	37,402	4,700	Compton Ave Church of the
CH096	Church	33,100	4,191	Corinthian Baptist Church of Los Angeles
CH097	Church	922	-6,751	Corp of the Presiding Bishop
CH098	Church	3,426	10,997	Corp of the Presiding Bishop
CH099	Church	15,214	-4,708	Corp of the Presiding Bishop
CH100	Church	16,819	5,275	Council of Rehoboth Christian
CH101	Church	3,028	9,100	Covenant Presbyterian Church
CH102	Church	29,435	-3,393	Creative Investment Group
CH103	Church	33,060	9,231	Crenshaw Christian Center Church
CH107	Church	12,493	-6,171	Del Aire Assembly of God Inc
CH108	Church	12,557	-6,505	Del Aire Baptist Church
CH109	Church	-7,997	6,637	Del Rey Hills Evangelical Free Church
CH116	Church	26,573	11,459	Edmund Bussey Foundation
CH118	Church	34,682	5,288	Eighty-Eighth Street Temple Church of God
CH119	Church	-3,523	-8,901	El Segundo Christian Church
CH120	Church	-3,133	-5,122	El Segundo City
CH121	Church	-1,025	-8,528	El Segundo Congregation Of
CH122	Church	-2,777	-7,154	El Segundo Masonic Temple Assn
CH129	Church	20,742	-3,140	Emmanuel Missionary Bay Greater
CH132	Church	15,736	5,775	Ernesto & Elsa Ballesteros
CH133	Church	27,851	1,067	Eternal Promise Baptist Church
CH135	Church	33,627	6,388	Evangelical Lutheran Messiah
CH137	Church	34,656	-3,968	Evangelistic World Outreach Inc
CH139	Church	36,337	10,957	Faith Church of God In Christ
CH140	Church	34,661	-513	Faith Missionary Greater
CH144	Church	30,061	-1,582	Faith United Methodist Church
CH145	Church	37,669	-1,182	Faith Way Missionary Baptist Ch
CH146	Church	13,494	8,321	Faithful Central Missionary Baptist Church
CH150	Church	16,056	6,214	First Apostolic Church of Inglewood
CH151	Church	16,044	5,617	First Apostolic Church of Inglewood
CH156	Church	34,981	1,468	First Baptist Church
CH157	Church	4,879	6,462	First Baptist Church Westchester
CH158	Church	24,437	2,639	First Church of God of Los Angeles
CH160	Church	12,198	7,451	First Evangelical Lutheran
CH162	Church	18,585	-9,335	First Hungarian Reformed Church of Los A
CH163	Church	36,352	7,585	First Love Ch of God In Christ
CH164	Church	17,219	5,679	First Methodist Ch of Inglewood
CH165	Church	31,191	-1,517	First New Christian Fellowship
CH166	Church	17,839	7,360	First Presbyterian Church of Inglewood
CH168	Church	2,715	9,777	Fortieth Ch of Christ Scientist
CH172	Church	16,888	11,345	Freddie Blackshear
CH173	Church	20,347	-4,191	Free Wesleyan Church Tonga of Am
CH174	Church	37,440	7,189	Freewill Missionary Baptist Church
CH175	Church	-4,960	6,402	Frieda Rentie
CH177	Church	29,502	11,020	Full Christian Fellowship Center
CH180	Church	37,667	5,420	Full Gospel Community Prayer Center
CH182	Church	37,462	-1,152	General Assembly Church of The
CH183	Church	35,808	6,815	George & Lula Clark
CH185	Church	32,290	4,655	Girls Club of Los Angeles Inc
CH186	Church	37,662	-2,735	Gods House of Deliverance
CH188	Church	29,706	9,678	Good News Prayer Center Cogic
CH189	Church	37,456	8,316	Good Shepherd Church God In Christ Inc
CH190	Church	15,769	-1,744	Good Shepherd Church Assembly of God

Table M-11 (6 of 12)

Location Points Description: Baseline 2003 Conditions

Grid Cell ID	Use	X Dist. (feet)[1]	Y Dist. (feet)[1]	Owner of Record per County Assessor
CH191	Church	37,440	3,115	Good Shepherd Church God Chris
CH193	Church	16,098	3,516	Good Shepherd Lutheran Church
CH197	Church	36,141	-622	Gospel Temple Baptist Church
CH199	Church	32,312	-2,517	Grace Church of the Nazarene
CH201	Church	30,178	11,450	Granville Winstead
CH205	Church	36,034	6,388	Greater Bethany Comm Church
CH206	Church	32,298	-1,373	Greater Circle Mission Inc
CH208	Church	34,964	-345	Greater Faith Missionary Baptist Church
CH211	Church	36,174	2,481	Greater Mt Olive Baptist Ch Inc
CH213	Church	18,281	1,520	Greater New Bethel Baptist Church Inc
CH216	Church	32,313	1,911	Greater True Vine Temple Christ Corp
CH218	Church	15,869	-951	Grevillea Ave Church of Christ
CH219	Church	22,848	11,338	Guidance Church of Religious Science Inc
CH221	Church	23,975	6,427	Hart Evangelistic Musical
CH222	Church	15,086	-9,405	Hawthorne Church of Christ
CH225	Church	13,793	-7,039	Hawthorne United Methodist Church
CH230	Church	32,151	4,322	Hazel Kornegay
CH231	Church	36,143	9,975	Henry & Maxine Wagoner
CH234	Church	36,895	6,381	Holy Deliverance House Prayer Inc
CH235	Church	32,127	2,022	Holy Light Baptist Church of Los Angeles
CH239	Church	29,501	6,867	Holy Pilgrim Temple Church Of
CH240	Church	37,448	-2,742	Holy Rock Baptist Church Inc
CH241	Church	24,439	3,466	Holy Trinity Lutheran Church
CH244	Church	37,681	8,609	Hosanan Comm Church
CH247	Church	34,958	2,144	Iglesia Cristiana Juan 16 Inc
CH250	Church	28,704	-4,168	Imperial Heights Church of the Brethren
CH251	Church	13,890	6,115	Inglewood Church of Christ
CH254	Church	17,430	10,595	Inglewood Congregation Of
CH255	Church	12,359	3,858	Inglewood Friends Church
CH256	Church	16,578	3,534	International Ch of Foursquare Gospel
CH257	Church	15,548	-8,178	International Ch of Foursquare Gospel
CH259	Church	14,539	12,155	International Church Of
CH260	Church	23,953	-3,330	International Church of The
CH261	Church	19,150	-3,057	Intl Ch of Foursquare Gospel
CH262	Church	-3,362	-7,566	Intl Church of the Foursquare Gospel Inc
CH266	Church	16,872	3,711	Jamat-E-Masjidul Islam Inc
CH267	Church	35,011	8,122	James & Audrey Thompson
CH270	Church	31,466	6,365	James Gardner
CH273	Church	31,581	550	John & Nettie Glover
CH275	Church	34,643	11,454	Joseph Freeman
CH276	Church	29,696	3,909	Kerry Brooks
CH281	Church	33,441	3,079	LA Baptist City Mission Soc
CH282	Church	17,872	-2,898	LA Baptist Cy Mission Society
CH284	Church	8,877	10,121	La Tijera United Methodist
CH285	Church	6,222	7,425	LACO Elec Inc
CH289	Church	15,218	-1,808	Lennox Blvd Community Methodist Church
CH290	Church	16,538	-2,345	Lennox Congregation Of
CH294	Church	32,328	7,233	Live Oak Missionary Baptist Church
CH300	Church	33,630	2,854	Los Angeles Baptist City
CH303	Church	29,690	5,046	Los Angeles Christian Center
CH304	Church	6,157	8,380	Los Angeles Church Property
CH308	Church	26,723	11,459	Love of God Baptist Church of LA
CH311	Church	29,706	9,728	Mack & Geneva Washington

Table M-11 (7 of 12)

Location Points Description: Baseline 2003 Conditions

Grid Cell ID	Use	X Dist. (feet)[1]	Y Dist. (feet)[1]	Owner of Record per County Assessor
CH313	Church	34,942	2,884	Margaret Halleck
CH316	Church	33,455	6,366	Messiah Evangelical Lutheran Church of LA
CH321	Church	26,844	6,592	Morningside Congregation Of
CH322	Church	24,378	5,651	Morningside United Ch of Christ
CH323	Church	32,144	3,499	Mount Gilead Missionary Baptist Church
CH329	Church	33,816	6,120	Mt Horeb Missionary Baptist Ch
CH332	Church	29,987	1,050	Nathaniel Campbell
CH334	Church	-3,362	-8,211	Neva Renfro
CH335	Church	35,032	9,135	New Antioch Church of God In Christ
CH338	Church	34,658	-3,718	New Congregational Baptist Church
CH340	Church	37,438	6,936	New Life Institutional Baptist
CH343	Church	15,571	5,631	New Mount Pleasant Baptist Church
CH346	Church	34,683	2,176	New Pleasant Hill Baptist Church
CH350	Church	36,465	11,455	New Vision Church of God In Christ Corp
CH351	Church	37,457	8,790	New Zion Missionary Greater
CH352	Church	36,665	11,456	Nicolas Davilla
CH354	Church	35,029	10,381	Norman Pomeranz
CH359	Church	34,660	-759	Opportunity Baptist Church
CH361	Church	-297	10,928	Our Savior Lutheran
CH364	Church	-3,000	-5,050	Pacific Baptist Church of El Segundo
CH366	Church	34,663	-2,477	Pacifica Natl Mtg
CH368	Church	29,105	-1,896	Park Windsor Baptist Church
CH375	Church	17,910	-9,299	Pentecostal Church Resurrection
CH378	Church	32,154	5,163	Philippians Missionary Greater
CH383	Church	23,176	6,146	Prairie Congregation Of
CH388	Church	29,674	7,848	Prayer Tower Church of God In Christ
CH390	Church	32,137	10,569	Presbytery of the Pacific
CH392	Church	33,524	-107	Raymond & Cleopatra Anderson
CH393	Church	29,454	197	Raymond & Jean Branch/Rainbow Baptist
CH395	Church	20	7,468	Rector Wardens & Vestrymen Of
CH396	Church	-3,363	-7,999	Rector Wardens & Vestrymen Of
CH397	Church	-3,153	6,521	Religious of the Sacred Heart of Mary
CH402	Church	33,574	-393	Richard Phillips
CH405	Church	26,436	-4,141	Robert III Thrash
CH408	Church	16,609	-6,117	Roman Catholic Archbishop of LA
CH411	Church	-5,649	6,168	Roman Catholic Archbishop of LA
CH413	Church	955	5,447	Roman Catholic Archbishop of LA
CH415	Church	-574	-8,529	Roman Catholic Archbishop of LA
CH416	Church	-3,520	-6,950	Roman Catholic Archbishop of LA
CH423	Church	34,438	6,123	Roman Catholic Archbishop of LA
CH427	Church	27,099	2,637	Roman Catholic Archbishop of LA
CH430	Church	29,435	-3,530	Ruth Rockwell
CH431	Church	26,113	11,458	Saint Andrews Missionary Holy
CH432	Church	32,135	10,287	Saint Hillrie Church of God In Christ
CH433	Church	34,981	4,271	Saint John Institutional Baptist Church
CH434	Church	29,486	4,620	Saint John Missionary Little
CH436	Church	36,665	6,526	Saint Rest Baptist Church of LA
CH438	Church	16,883	7,283	Salvation Army
CH440	Church	21,860	-3,132	Second Mount Nebo Baptist Church
CH453	Church	30,531	6,362	Southside Church of Christ
CH457	Church	37,682	5,673	St Augustine Missionary Baptist Church
CH459	Church	34,981	4,311	St John Institutional Baptist Church
CH461	Church	2,474	-5,106	St Johns Lutheran Ch of El Segundo

Table M-11 (8 of 12)

Location Points Description: Baseline 2003 Conditions

Grid Cell ID	Use	X Dist. (feet)[1]	Y Dist. (feet)[1]	Owner of Record per County Assessor
CH462	Church	37,658	2,565	St Mark Missionary Faithful
CH463	Church	28,157	7,476	St Marks United Methodist Church
CH465	Church	29,437	-2,633	St Thomas Baptist Church
CH469	Church	36,307	9,187	Steven Shaw
CH470	Church	15,830	5,944	Strait-Way Apostolic Church Inc
CH471	Church	34,666	3,437	Strangers Rest Missionary Baptist Church
CH472	Church	34,478	360	Sweet Hill Baptist Church Inc
CH479	Church	29,687	3,172	Thompson Memorial Chapel Church Inc
CH480	Church	36,132	8,126	Three Oaks Baptist Church
CH481	Church	6,983	6,070	Tikvah Congregation Bnai
CH482	Church	35,540	2,955	Tolutasi United Methodist Church
CH485	Church	37,466	9,880	Trinity C M E Church
CH493	Church	36,143	9,513	True Gospel Missionary Baptist Church
CH497	Church	12,760	12,329	Truevine Baptist Church
CH500	Church	29,680	2,945	Twenty Third Church of Christ Scientist
CH503	Church	-2,777	-7,028	United Methodist Church of El Segundo
CH507	Church	38,086	-1,785	Upper Room Church God
CH509	Church	34,671	8,932	Vermont Ave Church of Christ
CH513	Church	17,184	8,722	Wardens & Vestrymen Rector
CH518	Church	5,989	6,176	Westchester Assembly of God
CH519	Church	-4,691	6,400	Westchester Ch of the Nazarene
CH520	Church	3,327	10,191	Westchester Lutheran Church
CH521	Church	427	8,681	Westchester United Methodist Church
CH522	Church	13,607	1,267	Westside Christian Fellowship of Los An
CH524	Church	34,683	4,171	Wiley & Gloria Sapp Jr.
CH529	Church	37,462	-1,270	Woodcrest Congregation Of
CH532	Church	23,813	9,141	Zion Hill Baptist Church
CH533	Church	29,674	1,811	Juan & Irma Aquilar
HOS05	Hospital	15,713	-5,495	Burton Russell Co
HOS07	Hospital	15,334	-5,123	Catholic Healthcare West Southern Calif
HOS09	Hospital	23,095	8,420	Crippled Children's Society Of
HOS10	Hospital	18,684	3,896	Desco Health Care Inc
HOS11	Hospital	18,500	8,884	Freeman Med Towers Lp
HOS12	Hospital	13,791	-5,987	Golden West Convalescent Hospital Investm
HOS13	Hospital	29,985	5,901	Grp Bedford
HOS15	Hospital	17,190	1,285	Robert & Richard Binkert
HOS16	Hospital	13,553	7,081	Samuel & Kathryn Dixon
HOS18	Hospital	13,797	-3,917	State of Calif
HOS19	Hospital	17,676	2,790	Washington Mut Bk
LIB01	Library	15,816	-9,101	Hawthorne City
LIB02	Library	15,450	7,185	Inglewood City
LIB03	Library	24,178	-3,305	Inglewood City
LIB04	Library	23,842	6,513	Inglewood City Library
LIB05	Library	3,672	4,468	LA City
LIB06	Library	32,350	-1,151	LA County
LIB07	Library	16,622	-1,444	Lennox Branch
LIB10	Library	37,424	2,049	Mark Twain Branch
LIB11	Library	-3,147	-6,769	El Segundo Library
LIB13	Library	-3,179	6,210	Loyola Village Branch
NH003	Hospital, Convalescent	29,488	7,434	American Philanthropy Assn Inc
NH004	Hospital, Convalescent	34,331	5,967	Archdiocese of LA Educ & Welfare Corp
NH007	Hospital, Convalescent	17,108	11,062	C & H Health Care
NH008	Hospital, Convalescent	20,727	-198	Charles Perkins

Table M-11 (9 of 12)

Location Points Description: Baseline 2003 Conditions

Grid Cell ID	Use	X Dist. (feet)[1]	Y Dist. (feet)[1]	Owner of Record per County Assessor
NH009	Hospital, Convalescent	13,755	-5,511	Curtis & Faye Melton
NH010	Hospital, Convalescent	34,543	11,454	Delores Allen
NH012	Hospital, Convalescent	23,851	6,390	Edward Gauthier Sr.
NH013	Hospital, Convalescent	16,922	7,743	Eugenia Durdall
NH015	Hospital, Convalescent	34,661	-443	Greater Faith Baptist Church
NH017	Hospital, Convalescent	34,326	6,502	Home Elderly Pp
NH018	Hospital, Convalescent	17,706	7,119	Howard & Dorothy Bush
NH019	Hospital, Convalescent	14,640	6,647	Klokke Corp
NH022	Hospital, Convalescent	35,884	6,388	Manor Convalescent Hospital Manchester
NH023	Hospital, Convalescent	13,941	-7,834	Mark & Emerita Mannarelli
NH025	Hospital, Convalescent	15,569	12,004	Mount Zion Baptist Church of Los Angeles
NH026	Hospital, Convalescent	26,823	2,036	Ollie Miller
NH027	Hospital, Convalescent	18,773	-9,296	Ramon Duran
NH028	Hospital, Convalescent	14,396	6,645	Rebecca Conti
NH033	Hospital, Convalescent	12,509	8,161	Saint Erne Healthcare Center
NH037	Hospital, Convalescent	34,990	-3,870	Skangel Inc
NH038	Hospital, Convalescent	17,775	10,041	Terrace Inglewood Brierwood
NH040	Hospital, Convalescent	22,738	6,430	Urban Healthcare Project Inc
NH041	Hospital, Convalescent	37,456	8,531	Watts Health Foundation
NH042	Hospital, Convalescent	34,661	7,463	Wells Fargo Bank NA
NH043	Hospital, Convalescent	-7,595	6,080	Carewest Nursing Center
NH044	Hospital, Convalescent	18,202	2,864	Centinela Valley Care Center
NH045	Hospital, Convalescent	15,756	-5,107	Hawthorne Convalescent Center
PBS006	Public School	27,281	10,743	74th Street Elementary School
PBS009	Public School	34,094	2,313	95th Street Preparatory School
PBS011	Public School	-2,515	-6,204	Arena High School
PBS017	Public School	14,818	3,297	Boulah Payne Elementary School
PBS018	Public School	35,904	3,121	Bret Harte Junior High School
PBS019	Public School	12,212	-1,924	Buford Elementary School
PBS021	Public School	911	-6,459	Center Street Elementary School
PBS022	Public School	13,419	10,800	Centinela Elementary School
PBS023	Public School	15,909	-7,797	Centinela Valley Union High School Dist
PBS024	Public School	26,296	-2,314	Century park Elementary School
PBS026	Public School	23,650	-1,034	Clyde Woodworth Elementary
PBS027	Public School	172	11,002	Cowan Avenue Elementary School
PBS028	Public School	15,282	7,661	Crozier Middle School
PBS029	Public School	25,282	8,750	Daniel Freeman Elementary School
PBS031	Public School	-1,003	-8,864	El Segundo Jr. High School
PBS032	Public School	-3,780	-6,609	El Segundo Middle School
PBS033	Public School	14,499	-7,413	Eucalyptus School
PBS035	Public School	12,046	-585	Felton Elementary School
PBS036	Public School	37,216	-3,113	Figueroa Street Elementary School
PBS040	Public School	31,524	-2,029	George Washington H.S. and Magnet Center
PBS041	Public School	32,406	-2,584	Grace Church of the Nazarene Of
PBS042	Public School	12,992	-8,938	Hawthorne High School
PBS047	Public School	13,295	5,451	Hillcrest Continuation School
PBS048	Public School	13,951	6,710	Hudnall Elementary School
PBS049	Public School	-1,068	-4,601	Imperial Ave. School Special Education Facility
PBS050	Public School	14,856	6,115	Inglewood High School
PBS054	Public School	16,704	9,736	Inglewood Unified School Dist
PBS055	Public School	14,713	3	Jefferson Elementary School
PBS058	Public School	10,708	-7,313	Juan de Anza Elementary School
PBS059	Public School	18,679	5,302	Kelso Elementary School

Table M-11 (10 of 12)

Location Points Description: Baseline 2003 Conditions

Grid Cell ID	Use	X Dist. (feet)[1]	Y Dist. (feet)[1]	Owner of Record per County Assessor
PBS061	Public School	419	7,093	Kentwood Elementary School
PBS062	Public School	968	5,128	LA Unified School Dist
PBS086	Public School	38,040	1,964	LA Unified School Dist
PBS090	Public School	30,414	5,411	La Salle Avenue Elementary School
PBS091	Public School	11,903	-2,672	Lennox Middle School
PBS098	Public School	35,517	9,615	Loren Miller Elementary School
PBS099	Public School	-4,391	5,512	Loyola Village Elementary School
PBS100	Public School	36,630	5,989	Manchester Avenue Elementary School
PBS101	Public School	29,058	2,028	Manhattan Place Elementary School
PBS102	Public School	17,390	-2,628	Moffet Elementary School
PBS105	Public School	11,840	4,627	Oak Street Elementary School
PBS106	Public School	808	9,178	Orville Wright Junior High School
PBS107	Public School	-8,294	5,322	Paseo del Rey Magnet School
PBS111	Public School	32,576	10,502	Raymond Avenue Elementary School
PBS113	Public School	34,981	4,193	Sung & Keum Kim
PBS117	Public School	24,929	3,265	Warren Lane Elementary School
PBS120	Public School	-6,877	5,485	Westchester High School and Magnet Center
PBS121	Public School	-6,871	5,484	Westchester High School and Magnet Center
PBS122	Public School	5,515	8,945	Westpoint Heights Elementary School
PBS123	Public School	18,043	-527	Whelan Elementary School
PBS125	Public School	33,837	-1,843	Woodcrest Elementary School
PBS127	Public School	21,457	-3,062	Worthington Elementary School
PBS128	Public School	18,588	-5,939	York School
PBS140	Public School	22,487	-1,032	Morningside High School
PBS201	Public School	23,648	-1,395	Monroe Middle School
PRK01	Park	11,566	6,133	Ashwood Park
PRK02	Park	5,414	4,921	Carl E. Nielson Youth Park
PRK03	Park	21,160	-3,063	Center Park
PRK05	Park	9,350	-9,074	Del Aire Park
PRK07	Park	-13,479	6,711	Del Rey Lagoon
PRK10	Park	-5,023	-4,415	El Segundo City
PRK11	Park	-1,802	-8,136	El Segundo City
PRK13	Park	-225	-8,037	El Segundo City
PRK15	Park	1,472	-5,400	El Segundo City
PRK16	Park	1,719	-7,830	El Segundo City
PRK18	Park	13,866	-7,408	Eucalyptus Park
PRK201	Park	-2,921	5,657	Westchester Recreation Center/Golf Course
PRK32	Park	25,609	7,591	Inglewood City
PRK41	Park	15,768	6,307	Inglewood City
PRK42	Park	13,359	1,894	Inglewood City
PRK43	Park	23,171	4,140	Inglewood City
PRK45	Park	28,752	5,597	LA City
PRK46	Park	36,620	5,021	LA City
PRK52	Park	14,558	-1,937	LA County
PRK56	Park	28,407	1,919	LA County
PRK59	Park	18,760	7,140	Queen Park
PRK60	Park	13,470	9,437	Redevelopment Agency of Inglewood City
PRK62	Park	2,383	-6,026	Robert Mork
PRK65	Park	-6,967	-8,394	State of Calif
PRK67	Park	-10,639	716	Vista Del Mar Park
PRK68	Park	-761	5,208	Westchester Municipal Golf Course
PRK70	Park	34,964	-416	Little Green Acres Park
PRK71	Park	-4,883	-7,930	Holly Valley Park

Table M-11 (11 of 12)

Location Points Description: Baseline 2003 Conditions

Grid Cell ID	Use	X Dist. (feet)[1]	Y Dist. (feet)[1]	Owner of Record per County Assessor
PRK72	Park	-3,078	-6,614	Library Park
PVS001	Private School	37,733	11,384	Angeles Urban League Los
PVS002	Private School	37,336	-3,455	Archdiocese of Los Angeles Educ
PVS003	Private School	34,483	5,967	Archdiocese of LA Educ
PVS004	Private School	27,097	2,468	Archdiocese of LA Educ
PVS007	Private School	-7,778	4,626	Archdiocese of LA Educ & Welfare Corp
PVS011	Private School	833	5,679	Archdiocese of LA Educ & Welfare Corp
PVS012	Private School	771	5,989	Archdiocese of LA Educ & Welfare Corp
PVS017	Private School	34,119	6,123	Archdiocese of LA Educ & Welfare Corp
PVS025	Private School	12,977	12,319	Australia Johnson
PVS026	Private School	36,140	6,964	Bethany Apostolic Church
PVS028	Private School	24,379	5,761	Brady & Margaret Johnson
PVS029	Private School	23,982	7,178	Brady & Margaret Johnson Jr.
PVS030	Private School	28,850	11,455	Carolyn & Stacey Carol Jenkins
PVS031	Private School	-12,447	6,370	Chabad of the Marina
PVS033	Private School	34,984	5,635	Community Build Inc
PVS034	Private School	29,461	-1,469	Constance Tucker
PVS035	Private School	34,140	9,211	Crenshaw Christian Center Church
PVS036	Private School	25,423	11,457	Dorothy Moore
PVS037	Private School	29,435	-516	Edgar Palmer
PVS044	Private School	13,506	6,729	Gary & Linda Dunn
PVS046	Private School	29,009	-4,204	Glen & Marjorie McKnight
PVS048	Private School	-501	-8,326	Hilltop Christian School
PVS049	Private School	34,967	2,020	Iglesia Cristiana Juan 3:16
PVS051	Private School	16,298	5,790	Inglewood Christian School
PVS054	Private School	32,159	8,982	James McGregory
PVS055	Private School	18,415	5,475	Jeff D & Baasha K Johnson Jr.
PVS056	Private School	34,709	4,608	Jessie Jackson
PVS060	Private School	6,258	8,224	Keith & Maria Crisp
PVS062	Private School	19,294	-197	LA Southside Christian Church
PVS064	Private School	13,310	7,076	Lindgren Ptnrshp 1
PVS065	Private School	33,672	6,369	Lou-Ann Inv
PVS066	Private School	14,716	11,128	Lucian & Desirine Bingham
PVS067	Private School	32,753	-466	Manor Hale-Morris-Lewis
PVS069	Private School	13,205	6,854	Michael & Sherry Baker
PVS070	Private School	15,369	3,722	Michael Hale
PVS071	Private School	2,864	13,792	Milton Raymond
PVS073	Private School	24,503	5,600	Morningside United Ch of Christ
PVS074	Private School	24,091	6,749	Musical Hart Evangelistic Assn Inc
PVS077	Private School	12,602	-226	Paul & Willa Devan
PVS081	Private School	29,676	2,047	Providence Missionary Baptist
PVS082	Private School	32,177	6,695	R Marie Fegan
PVS083	Private School	17,478	5,970	Raymond & Carolyn Wilder
PVS084	Private School	16,261	-881	Raymond Vanyek
PVS085	Private School	32,138	10,688	Riley & Faye Washington
PVS086	Private School	36,351	8,881	Ruth Cooper
PVS087	Private School	32,298	-1,596	Samuel Amerson
PVS091	Private School	27,180	2,649	St Eugene's Catholic School
PVS092	Private School	18,568	9,623	St Marys Academy of LA
PVS093	Private School	-5,793	5,899	St. Anastasia School
PVS099	Private School	22,860	11,024	Twyla Lang
PVS101	Private School	29,432	-911	Verna Nelson
PVS103	Private School	3,278	9,736	Westchester Lutheran Church

Table M-11 (12 of 12)

Location Points Description: Baseline 2003 Conditions

Grid Cell ID	Use	X Dist. (feet)[1]	Y Dist. (feet)[1]	Owner of Record per County Assessor
PVS104	Private School	9,240	3,525	Westchester Neighborhood School
PVS105	Private School	14,468	-9,493	Acacia Baptist School
PVS106	Private School	26,663	6,419	Calvary Christian School
PVS107	Private School	3,658	5,088	Escuela de Montessori
PVS108	Private School	23,359	6,499	Faith Lutheran Church School
PVS109	Private School	18,639	3,216	K-Anthony's Middle School
PVS110	Private School	-573	-8,780	Saint Anthony's Catholic School
PVS111	Private School	16,874	-6,105	St Joseph's Catholic Church School
PBS114	Private School	9,739	3,976	University of West Los Angeles
PBS116	Private School	8,575	4,739	University of West Los Angeles
PVS138	Private School	-2,901	10,004	Loyola Marymount University

Note:
1/ X and Y distances are measured in feet from the airport reference point.

Source: Landrum & Brown, Inc., 2002
Prepared by: Ricondo and Associates, 2004

Table M-12 (1of 12)

Location Points CNEL Values and Comparison: Baseline 2003 and Project (2005) Conditions[2/]

Grid Cell ID	Use	X Dist. (feet)[1]	Y Dist. (feet)[1]	2003 CNEL	Project (2005) CNEL	Difference
C08	Regular Grid	-15,000	9,000	51.5	52.7	1.2
C09	Regular Grid	-15,000	12,000	47.9	48.7	0.8
D06	Regular Grid	-12,000	3,000	67.3	69.8	2.5
D07	Regular Grid	-12,000	6,000	57.7	59.4	1.7
D08	Regular Grid	-12,000	9,000	52.2	53.4	1.2
D09	Regular Grid	-12,000	12,000	48.4	49.2	0.8
E07	Regular Grid	-9,000	6,000	58.7	60.3	1.6
E08	Regular Grid	-9,000	9,000	52.8	54.0	1.2
E09	Regular Grid	-9,000	12,000	48.9	49.7	0.8
F02	Regular Grid	-6,000	-9,000	58.9	57.6	-1.3
F03	Regular Grid	-6,000	-6,000	67.5	65.6	-1.9
F07	Regular Grid	-6,000	6,000	58.9	60.8	1.9
F08	Regular Grid	-6,000	9,000	53.0	54.3	1.3
F09	Regular Grid	-6,000	12,000	49.1	50.1	1.0
G01	Regular Grid	-3,000	-12,000	52.9	52.2	-0.7
G02	Regular Grid	-3,000	-9,000	57.9	56.9	-1.0
G03	Regular Grid	-3,000	-6,000	65.9	64.4	-1.5
G07	Regular Grid	-3,000	6,000	58.3	60.6	2.3
G08	Regular Grid	-3,000	9,000	53.2	54.7	1.5
G09	Regular Grid	-3,000	12,000	49.4	50.6	1.2
H01	Regular Grid	0	-12,000	52.2	51.5	-0.7
H02	Regular Grid	0	-9,000	56.8	55.9	-0.9
H03	Regular Grid	0	-6,000	64.0	62.8	-1.2
H07	Regular Grid	0	6,000	60.1	62.6	2.5
H08	Regular Grid	0	9,000	54.1	56.0	1.9
H09	Regular Grid	0	12,000	50.1	51.6	1.5
I01	Regular Grid	3,000	-12,000	51.6	50.8	-0.8
I02	Regular Grid	3,000	-9,000	55.6	54.7	-0.9
I03	Regular Grid	3,000	-6,000	61.3	60.2	-1.1
I07	Regular Grid	3,000	6,000	60.7	63.2	2.5
I08	Regular Grid	3,000	9,000	54.6	56.4	1.8
I09	Regular Grid	3,000	12,000	50.5	51.9	1.4
J01	Regular Grid	6,000	-12,000	51.3	50.2	-1.1
J02	Regular Grid	6,000	-9,000	55.3	53.9	-1.4
J03	Regular Grid	6,000	-6,000	60.9	59.0	-1.9
J07	Regular Grid	6,000	6,000	59.2	60.6	1.4
J08	Regular Grid	6,000	9,000	54.1	55.2	1.1
J09	Regular Grid	6,000	12,000	50.6	51.4	0.8
K01	Regular Grid	9,000	-12,000	51.6	50.0	-1.6
K02	Regular Grid	9,000	-9,000	55.7	53.9	-1.8
K03	Regular Grid	9,000	-6,000	61.3	59.4	-1.9
K05	Regular Grid	9,000	0	76.7	76.3	-0.4
K07	Regular Grid	9,000	6,000	60.4	61.4	1.0
K08	Regular Grid	9,000	9,000	53.8	54.2	0.4
K09	Regular Grid	9,000	12,000	50.4	50.6	0.2
L01	Regular Grid	12,000	-12,000	50.9	49.2	-1.7
L02	Regular Grid	12,000	-9,000	54.2	52.5	-1.7
L03	Regular Grid	12,000	-6,000	58.4	56.8	-1.6
L04	Regular Grid	12,000	-3,000	63.5	61.7	-1.8
L05	Regular Grid	12,000	0	65.5	71.3	5.8
L06	Regular Grid	12,000	3,000	62.7	66.8	4.1

Table M-12 (2 of 12)

Location Points CNEL Values and Comparison: Baseline 2003 and Project (2005) Conditions[2/]

Grid Cell ID	Use	X Dist. (feet)[1]	Y Dist. (feet)[1]	2003 CNEL	Project (2005) CNEL	Difference
L07	Regular Grid	12,000	6,000	62.3	63.5	1.2
L08	Regular Grid	12,000	9,000	53.2	53.5	0.3
L09	Regular Grid	12,000	12,000	49.6	49.7	0.1
M01	Regular Grid	15,000	-12,000	49.4	47.7	-1.7
M02	Regular Grid	15,000	-9,000	52.0	50.4	-1.6
M03	Regular Grid	15,000	-6,000	54.9	53.4	-1.5
M04	Regular Grid	15,000	-3,000	60.1	57.6	-2.5
M05	Regular Grid	15,000	0	67.9	73.7	5.8
M06	Regular Grid	15,000	3,000	60.0	64.5	4.5
M07	Regular Grid	15,000	6,000	64.2	65.6	1.4
M08	Regular Grid	15,000	9,000	52.9	53.5	0.6
M09	Regular Grid	15,000	12,000	48.9	48.9	0.0
N01	Regular Grid	18,000	-12,000	47.7	46.1	-1.6
N02	Regular Grid	18,000	-9,000	49.8	48.2	-1.6
N03	Regular Grid	18,000	-6,000	52.2	50.8	-1.4
N04	Regular Grid	18,000	-3,000	58.5	56.0	-2.5
N05	Regular Grid	18,000	0	69.6	72.6	3.0
N06	Regular Grid	18,000	3,000	58.8	63.1	4.3
N07	Regular Grid	18,000	6,000	65.0	66.7	1.7
N08	Regular Grid	18,000	9,000	52.8	54.2	1.4
N09	Regular Grid	18,000	12,000	48.4	48.8	0.4
O01	Regular Grid	21,000	-12,000	46.1	44.5	-1.6
O02	Regular Grid	21,000	-9,000	47.9	46.4	-1.5
O03	Regular Grid	21,000	-6,000	50.5	49.0	-1.5
O04	Regular Grid	21,000	-3,000	57.2	55.0	-2.2
O05	Regular Grid	21,000	0	69.8	69.8	0.0
O06	Regular Grid	21,000	3,000	58.4	62.5	4.1
O07	Regular Grid	21,000	6,000	65.0	66.9	1.9
O08	Regular Grid	21,000	9,000	53.2	54.9	1.7
O09	Regular Grid	21,000	12,000	48.2	49.1	0.9
P01	Regular Grid	24,000	-12,000	44.7	43.1	-1.6
P02	Regular Grid	24,000	-9,000	46.4	45.1	-1.3
P03	Regular Grid	24,000	-6,000	49.5	48.0	-1.5
P04	Regular Grid	24,000	-3,000	56.0	54.2	-1.8
P05	Regular Grid	24,000	0	68.9	67.3	-1.6
P06	Regular Grid	24,000	3,000	58.6	62.6	4.0
P07	Regular Grid	24,000	6,000	64.0	66.1	2.1
P08	Regular Grid	24,000	9,000	54.3	55.9	1.6
P09	Regular Grid	24,000	12,000	48.0	48.8	0.8
Q01	Regular Grid	27,000	-12,000	43.5	42.0	-1.5
Q02	Regular Grid	27,000	-9,000	45.3	44.0	-1.3
Q03	Regular Grid	27,000	-6,000	48.8	47.3	-1.5
Q04	Regular Grid	27,000	-3,000	55.0	53.4	-1.6
Q05	Regular Grid	27,000	0	67.0	65.2	-1.8
Q06	Regular Grid	27,000	3,000	59.4	63.5	4.1
Q07	Regular Grid	27,000	6,000	62.6	65.0	2.4
Q08	Regular Grid	27,000	9,000	55.8	57.2	1.4
Q09	Regular Grid	27,000	12,000	48.0	49.0	1.0
R01	Regular Grid	30,000	-12,000	42.4	41.1	-1.3
R02	Regular Grid	30,000	-9,000	44.5	43.2	-1.3
R03	Regular Grid	30,000	-6,000	48.2	46.5	-1.7
R04	Regular Grid	30,000	-3,000	53.9	52.5	-1.4
R05	Regular Grid	30,000	0	64.9	63.2	-1.7

Table M-12 (3 of 12)

Location Points CNEL Values and Comparison: Baseline 2003 and Project (2005) Conditions[2/]

Grid Cell ID	Use	X Dist. (feet)[1]	Y Dist. (feet)[1]	2003 CNEL	Project (2005) CNEL	Difference
R06	Regular Grid	30,000	3,000	60.7	63.7	3.0
R07	Regular Grid	30,000	6,000	61.1	63.8	2.7
R08	Regular Grid	30,000	9,000	56.8	58.3	1.5
R09	Regular Grid	30,000	12,000	48.2	49.5	1.3
S01	Regular Grid	33,000	-12,000	41.4	40.4	-1.0
S02	Regular Grid	33,000	-9,000	43.7	42.4	-1.3
S03	Regular Grid	33,000	-6,000	47.3	45.8	-1.5
S04	Regular Grid	33,000	-3,000	52.8	51.6	-1.2
S05	Regular Grid	33,000	0	63.0	61.3	-1.7
S06	Regular Grid	33,000	3,000	61.2	63.7	2.5
S07	Regular Grid	33,000	6,000	59.8	62.6	2.8
S08	Regular Grid	33,000	9,000	57.2	58.9	1.7
S09	Regular Grid	33,000	12,000	48.8	50.3	1.5
T01	Regular Grid	36,000	-12,000	40.6	39.7	-0.9
T02	Regular Grid	36,000	-9,000	43.1	41.7	-1.4
T03	Regular Grid	36,000	-6,000	46.4	45.2	-1.2
T04	Regular Grid	36,000	-3,000	51.7	50.8	-0.9
T05	Regular Grid	36,000	0	61.2	59.8	-1.4
T06	Regular Grid	36,000	3,000	61.5	63.6	2.1
T07	Regular Grid	36,000	6,000	58.6	61.4	2.8
T08	Regular Grid	36,000	9,000	57.5	59.3	1.8
T09	Regular Grid	36,000	12,000	49.5	51.2	1.7
U01	Regular Grid	39,000	-12,000	40.1	39.0	-1.1
U02	Regular Grid	39,000	-9,000	42.7	41.1	-1.6
U03	Regular Grid	39,000	-6,000	45.7	44.7	-1.0
U04	Regular Grid	39,000	-3,000	50.8	50.0	-0.8
U05	Regular Grid	39,000	0	59.6	58.5	-1.1
U06	Regular Grid	39,000	3,000	61.7	63.3	1.6
U07	Regular Grid	39,000	6,000	57.8	60.6	2.8
U08	Regular Grid	39,000	9,000	57.7	59.6	1.9
U09	Regular Grid	39,000	12,000	50.4	52.4	2.0
V01	Regular Grid	42,000	-12,000	39.7	38.5	-1.2
V02	Regular Grid	42,000	-9,000	42.4	40.7	-1.7
V03	Regular Grid	42,000	-6,000	45.2	44.2	-1.0
V04	Regular Grid	42,000	-3,000	50.1	49.2	-0.9
V05	Regular Grid	42,000	0	58.2	57.2	-1.0
V06	Regular Grid	42,000	3,000	61.5	62.6	1.1
V07	Regular Grid	42,000	6,000	57.4	60.1	2.7
V08	Regular Grid	42,000	9,000	57.6	59.5	1.9
V09	Regular Grid	42,000	12,000	51.6	53.9	2.3
W01	Regular Grid	45,000	-12,000	39.4	38.0	-1.4
W02	Regular Grid	45,000	-9,000	42.0	40.2	-1.8
W03	Regular Grid	45,000	-6,000	44.7	43.6	-1.1
W04	Regular Grid	45,000	-3,000	49.3	48.5	-0.8
W05	Regular Grid	45,000	0	56.9	56.1	-0.8
W06	Regular Grid	45,000	3,000	61.2	61.7	0.5
W07	Regular Grid	45,000	6,000	57.4	59.8	2.4
W08	Regular Grid	45,000	9,000	57.3	59.2	1.9
W09	Regular Grid	45,000	12,000	52.0	54.5	2.5
X01	Regular Grid	48,000	-12,000	39.2	37.5	-1.7
X02	Regular Grid	48,000	-9,000	41.5	39.7	-1.8
X03	Regular Grid	48,000	-6,000	44.2	43.1	-1.1
X04	Regular Grid	48,000	-3,000	48.5	47.6	-0.9

Table M-12 (4 of 12)

Location Points CNEL Values and Comparison: Baseline 2003 and Project (2005) Conditions[2/]

Grid Cell ID	Use	X Dist. (feet)[1]	Y Dist. (feet)[1]	2003 CNEL	Project (2005) CNEL	Difference
X05	Regular Grid	48,000	0	55.8	54.8	-1.0
X06	Regular Grid	48,000	3,000	60.5	60.5	0.0
X07	Regular Grid	48,000	6,000	57.2	59.5	2.3
X08	Regular Grid	48,000	9,000	56.9	58.9	2.0
X09	Regular Grid	48,000	12,000	52.3	55.0	2.7
Y01	Regular Grid	51,000	-12,000	39.0	37.1	-1.9
Y02	Regular Grid	51,000	-9,000	40.9	39.3	-1.6
Y03	Regular Grid	51,000	-6,000	43.7	42.5	-1.2
Y04	Regular Grid	51,000	-3,000	47.8	46.9	-0.9
Y05	Regular Grid	51,000	0	54.7	53.6	-1.1
Y06	Regular Grid	51,000	3,000	59.7	59.2	-0.5
Y07	Regular Grid	51,000	6,000	57.1	59.1	2.0
Y08	Regular Grid	51,000	9,000	56.3	58.7	2.4
Y09	Regular Grid	51,000	12,000	52.5	55.5	3.0
Z01	Regular Grid	54,000	-12,000	38.8	36.7	-2.1
Z02	Regular Grid	54,000	-9,000	40.4	38.8	-1.6
Z03	Regular Grid	54,000	-6,000	43.2	41.9	-1.3
Z04	Regular Grid	54,000	-3,000	47.1	46.1	-1.0
Z05	Regular Grid	54,000	0	53.6	52.3	-1.3
Z06	Regular Grid	54,000	3,000	58.7	57.8	-0.9
Z07	Regular Grid	54,000	6,000	57.0	58.7	1.7
Z08	Regular Grid	54,000	9,000	55.8	58.1	2.3
Z09	Regular Grid	54,000	12,000	52.7	55.6	2.9
CH006	Church	18,362	851	65.2	69.7	4.5
CH008	Church	-1,056	-6,191	63.6	62.4	-1.2
CH011	Church	33,776	-3,732	50.5	49.5	-1.0
CH012	Church	34,672	611	63.2	61.8	-1.4
CH019	Church	16,609	-6,394	52.5	51.1	-1.4
CH020	Church	16,609	-5,892	53.0	51.6	-1.4
CH022	Church	18,259	9,542	51.9	53.2	1.3
CH025	Church	16,984	-6,155	52.4	51.0	-1.4
CH026	Church	772	5,897	61.4	64.0	2.6
CH030	Church	37,397	-3,562	49.8	49.0	-0.8
CH031	Church	29,694	4,531	58.7	61.7	3.0
CH032	Church	34,999	-2,528	53.1	52.0	-1.1
CH037	Church	12,173	2,634	60.9	64.1	3.2
CH044	Church	29,459	441	65.9	64.5	-1.4
CH047	Church	36,169	6,797	59.4	61.9	2.5
CH048	Church	36,695	2,519	62.7	64.0	1.3
CH049	Church	29,734	8,749	57.6	59.3	1.7
CH052	Church	28,386	11,458	49.1	50.5	1.4
CH053	Church	32,138	10,827	51.7	53.3	1.6
CH056	Church	29,496	10,032	53.3	54.8	1.5
CH058	Church	37,445	-3,804	49.3	48.5	-0.8
CH060	Church	37,453	1,503	63.2	62.6	-0.6
CH062	Church	18,436	-9,362	48.9	47.4	-1.5
CH067	Church	24,220	9,999	51.6	53.1	1.5
CH069	Church	24,032	-1,953	60.2	57.5	-2.7
CH072	Church	36,144	10,802	53.5	55.0	1.5
CH075	Church	36,127	-1,223	57.1	55.2	-1.9
CH076	Church	36,351	8,763	58.2	60.0	1.8
CH078	Church	30,942	225	64.5	62.9	-1.6
CH082	Church	15,556	4,179	64.8	68.8	4.0

Table M-12 (5 of 12)

Location Points CNEL Values and Comparison: Baseline 2003 and Project (2005) Conditions[2/]

Grid Cell ID	Use	X Dist. (feet)[1]	Y Dist. (feet)[1]	2003 CNEL	Project (2005) CNEL	Difference
CH083	Church	-5,007	6,170	58.2	60.4	2.2
CH087	Church	15,502	10,235	50.9	51.3	0.4
CH094	Church	37,402	4,700	58.5	61.1	2.6
CH096	Church	33,100	4,191	58.6	61.8	3.2
CH097	Church	922	-6,751	60.7	59.6	-1.1
CH098	Church	3,426	10,997	51.8	53.1	1.3
CH099	Church	15,214	-4,708	55.5	54.1	-1.4
CH100	Church	16,819	5,275	67.0	69.1	2.1
CH101	Church	3,028	9,100	54.4	56.2	1.8
CH102	Church	29,435	-3,393	52.8	51.5	-1.3
CH103	Church	33,060	9,231	56.8	58.5	1.7
CH107	Church	12,493	-6,171	57.0	55.4	-1.6
CH108	Church	12,557	-6,505	56.5	54.9	-1.6
CH109	Church	-7,997	6,637	57.5	59.1	1.6
CH116	Church	26,573	11,459	48.9	50.1	1.2
CH118	Church	34,682	5,288	58.1	61.0	2.9
CH119	Church	-3,523	-8,901	58.1	57.0	-1.1
CH120	Church	-3,133	-5,122	69.2	67.4	-1.8
CH121	Church	-1,025	-8,528	57.9	56.9	-1.0
CH122	Church	-2,777	-7,154	61.8	60.6	-1.2
CH129	Church	20,742	-3,140	56.4	54.4	-2.0
CH132	Church	15,736	5,775	65.9	67.5	1.6
CH133	Church	27,851	1,067	66.4	67.2	0.8
CH135	Church	33,627	6,388	59.9	62.5	2.6
CH137	Church	34,656	-3,968	49.8	48.8	-1.0
CH139	Church	36,337	10,957	53.1	54.6	1.5
CH140	Church	34,661	-513	60.1	58.6	-1.5
CH144	Church	30,061	-1,582	58.7	56.5	-2.2
CH145	Church	37,669	-1,182	56.6	54.8	-1.8
CH146	Church	13,494	8,321	54.3	55.0	0.7
CH150	Church	16,056	6,214	63.9	65.4	1.5
CH151	Church	16,044	5,617	66.5	68.2	1.7
CH156	Church	34,981	1,468	64.1	63.8	-0.3
CH157	Church	4,879	6,462	58.3	60.0	1.7
CH158	Church	24,437	2,639	60.0	64.3	4.3
CH160	Church	12,198	7,451	56.3	57.2	0.9
CH162	Church	18,585	-9,335	48.8	47.3	-1.5
CH163	Church	36,352	7,585	59.7	61.8	2.1
CH164	Church	17,219	5,679	66.3	68.1	1.8
CH165	Church	31,191	-1,517	58.4	56.2	-2.2
CH166	Church	17,839	7,360	59.0	60.5	1.5
CH168	Church	2,715	9,777	53.4	55.1	1.7
CH172	Church	16,888	11,345	49.3	49.7	0.4
CH173	Church	20,347	-4,191	53.7	51.9	-1.8
CH174	Church	37,440	7,189	59.3	61.7	2.4
CH175	Church	-4,960	6,402	57.6	59.7	2.1
CH177	Church	29,502	11,020	50.3	51.8	1.5
CH180	Church	37,667	5,420	57.8	60.8	3.0
CH182	Church	37,462	-1,152	56.8	55.0	-1.8
CH183	Church	35,808	6,815	59.6	62.0	2.4
CH185	Church	32,290	4,655	58.3	61.3	3.0
CH186	Church	37,662	-2,735	51.6	50.7	-0.9
CH188	Church	29,706	9,678	54.7	56.1	1.4

Table M-12 (6 of 12)

Location Points CNEL Values and Comparison: Baseline 2003 and Project (2005) Conditions[2/]

Grid Cell ID	Use	X Dist. (feet)[1]	Y Dist. (feet)[1]	2003 CNEL	Project (2005) CNEL	Difference
CH189	Church	37,456	8,316	59.0	60.9	1.9
CH190	Church	15,769	-1,744	67.9	62.5	-5.4
CH191	Church	37,440	3,115	61.4	63.4	2.0
CH193	Church	16,098	3,516	61.2	65.6	4.4
CH197	Church	36,141	-622	59.0	57.3	-1.7
CH199	Church	32,312	-2,517	54.2	52.9	-1.3
CH201	Church	30,178	11,450	49.5	51.0	1.5
CH205	Church	36,034	6,388	58.9	61.6	2.7
CH206	Church	32,298	-1,373	58.5	56.2	-2.3
CH208	Church	34,964	-345	60.4	59.1	-1.3
CH211	Church	36,174	2,481	62.8	64.2	1.4
CH213	Church	18,281	1,520	61.3	65.6	4.3
CH216	Church	32,313	1,911	64.2	65.6	1.4
CH218	Church	15,869	-951	72.7	68.9	-3.8
CH219	Church	22,848	11,338	48.9	50.0	1.1
CH221	Church	23,975	6,427	63.5	65.5	2.0
CH222	Church	15,086	-9,405	51.2	49.6	-1.6
CH225	Church	13,793	-7,039	54.6	53.0	-1.6
CH230	Church	32,151	4,322	58.4	61.6	3.2
CH231	Church	36,143	9,975	55.3	57.1	1.8
CH234	Church	36,895	6,381	58.6	61.3	2.7
CH235	Church	32,127	2,022	63.9	65.6	1.7
CH239	Church	29,501	6,867	61.7	63.7	2.0
CH240	Church	37,448	-2,742	51.7	50.7	-1.0
CH241	Church	24,439	3,466	58.6	62.4	3.8
CH244	Church	37,681	8,609	58.5	60.4	1.9
CH247	Church	34,958	2,144	63.5	64.6	1.1
CH250	Church	28,704	-4,168	51.3	49.9	-1.4
CH251	Church	13,890	6,115	63.7	64.9	1.2
CH254	Church	17,430	10,595	50.2	50.9	0.7
CH255	Church	12,359	3,858	66.1	70.4	4.3
CH256	Church	16,578	3,534	61.0	65.4	4.4
CH257	Church	15,548	-8,178	51.9	50.3	-1.6
CH259	Church	14,539	12,155	48.8	48.8	0.0
CH260	Church	23,953	-3,330	54.8	53.1	-1.7
CH261	Church	19,150	-3,057	57.4	55.1	-2.3
CH262	Church	-3,362	-7,566	61.0	59.8	-1.2
CH266	Church	16,872	3,711	61.7	66.0	4.3
CH267	Church	35,011	8,122	59.5	61.3	1.8
CH270	Church	31,466	6,365	60.7	63.3	2.6
CH273	Church	31,581	550	64.8	63.5	-1.3
CH275	Church	34,643	11,454	50.8	52.4	1.6
CH276	Church	29,696	3,909	58.6	62.0	3.4
CH281	Church	33,441	3,079	61.2	63.6	2.4
CH282	Church	17,872	-2,898	58.6	56.1	-2.5
CH284	Church	8,877	10,121	52.4	52.7	0.3
CH285	Church	6,222	7,425	56.4	57.4	1.0
CH289	Church	15,218	-1,808	67.8	62.5	-5.3
CH290	Church	16,538	-2,345	62.3	58.9	-3.4
CH294	Church	32,328	7,233	60.8	62.8	2.0
CH300	Church	33,630	2,854	61.8	64.1	2.3
CH303	Church	29,690	5,046	59.3	62.3	3.0
CH304	Church	6,157	8,380	55.0	56.0	1.0

Table M-12 (7 of 12)

Location Points CNEL Values and Comparison: Baseline 2003 and Project (2005) Conditions[2/]

Grid Cell ID	Use	X Dist. (feet)[1]	Y Dist. (feet)[1]	2003 CNEL	Project (2005) CNEL	Difference
CH308	Church	26,723	11,459	48.9	50.1	1.2
CH311	Church	29,706	9,728	54.5	55.9	1.4
CH313	Church	34,942	2,884	61.9	64.0	2.1
CH316	Church	33,455	6,366	59.9	62.6	2.7
CH321	Church	26,844	6,592	62.6	64.6	2.0
CH322	Church	24,378	5,651	63.2	65.9	2.7
CH323	Church	32,144	3,499	60.1	62.7	2.6
CH329	Church	33,816	6,120	59.4	62.2	2.8
CH332	Church	29,987	1,050	65.9	65.9	0.0
CH334	Church	-3,362	-8,211	59.5	58.3	-1.2
CH335	Church	35,032	9,135	57.2	59.0	1.8
CH338	Church	34,658	-3,718	50.3	49.4	-0.9
CH340	Church	37,438	6,936	59.1	61.6	2.5
CH343	Church	15,571	5,631	66.5	68.1	1.6
CH346	Church	34,683	2,176	63.4	64.7	1.3
CH350	Church	36,465	11,455	51.4	53.1	1.7
CH351	Church	37,457	8,790	58.2	60.0	1.8
CH352	Church	36,665	11,456	51.5	53.2	1.7
CH354	Church	35,029	10,381	54.3	55.8	1.5
CH359	Church	34,660	-759	59.4	57.5	-1.9
CH361	Church	-297	10,928	51.5	53.1	1.6
CH364	Church	-3,000	-5,050	69.5	67.6	-1.9
CH366	Church	34,663	-2,477	53.4	52.2	-1.2
CH368	Church	29,105	-1,896	57.8	55.8	-2.0
CH375	Church	17,910	-9,299	49.3	47.7	-1.6
CH378	Church	32,154	5,163	58.6	61.5	2.9
CH383	Church	23,176	6,146	64.1	66.1	2.0
CH388	Church	29,674	7,848	60.1	61.8	1.7
CH390	Church	32,137	10,569	52.6	54.1	1.5
CH392	Church	33,524	-107	62.0	60.4	-1.6
CH393	Church	29,454	197	65.4	63.7	-1.7
CH395	Church	20	7,468	57.1	59.3	2.2
CH396	Church	-3,363	-7,999	60.0	58.8	-1.2
CH397	Church	-3,153	6,521	57.4	59.5	2.1
CH402	Church	33,574	-393	61.1	59.6	-1.5
CH405	Church	26,436	-4,141	52.1	50.5	-1.6
CH408	Church	16,609	-6,117	52.8	51.4	-1.4
CH411	Church	-5,649	6,168	58.4	60.5	2.1
CH413	Church	955	5,447	63.1	65.8	2.7
CH415	Church	-574	-8,529	57.7	56.7	-1.0
CH416	Church	-3,520	-6,950	62.7	61.4	-1.3
CH423	Church	34,438	6,123	59.2	61.9	2.7
CH427	Church	27,099	2,637	61.1	64.5	3.4
CH430	Church	29,435	-3,530	52.4	51.1	-1.3
CH431	Church	26,113	11,458	48.8	50.0	1.2
CH432	Church	32,135	10,287	53.6	55.0	1.4
CH433	Church	34,981	4,271	58.8	61.6	2.8
CH434	Church	29,486	4,620	58.8	61.8	3.0
CH436	Church	36,665	6,526	58.9	61.5	2.6
CH438	Church	16,883	7,283	58.7	60.2	1.5
CH440	Church	21,860	-3,132	56.0	54.1	-1.9
CH453	Church	30,531	6,362	61.1	63.6	2.5
CH457	Church	37,682	5,673	57.8	60.6	2.8

Table M-12 (8 of 12)

Location Points CNEL Values and Comparison: Baseline 2003 and Project (2005) Conditions[2/]

Grid Cell ID	Use	X Dist. (feet)[1]	Y Dist. (feet)[1]	2003 CNEL	Project (2005) CNEL	Difference
CH459	Church	34,981	4,311	58.8	61.6	2.8
CH461	Church	2,474	-5,106	63.7	62.4	-1.3
CH462	Church	37,658	2,565	62.6	63.7	1.1
CH463	Church	28,157	7,476	61.0	62.7	1.7
CH465	Church	29,437	-2,633	54.9	53.5	-1.4
CH469	Church	36,307	9,187	57.2	59.0	1.8
CH470	Church	15,830	5,944	65.1	66.7	1.6
CH471	Church	34,666	3,437	60.5	62.9	2.4
CH472	Church	34,478	360	62.7	61.2	-1.5
CH479	Church	29,687	3,172	60.3	63.4	3.1
CH480	Church	36,132	8,126	59.3	61.2	1.9
CH481	Church	6,983	6,070	59.6	60.6	1.0
CH482	Church	35,540	2,955	61.7	63.8	2.1
CH485	Church	37,466	9,880	55.7	57.6	1.9
CH493	Church	36,143	9,513	56.4	58.2	1.8
CH497	Church	12,760	12,329	49.1	49.1	0.0
CH500	Church	29,680	2,945	61.2	63.9	2.7
CH503	Church	-2,777	-7,028	62.1	60.9	-1.2
CH507	Church	38,086	-1,785	54.2	52.9	-1.3
CH509	Church	34,671	8,932	57.7	59.4	1.7
CH513	Church	17,184	8,722	53.5	54.9	1.4
CH518	Church	5,989	6,176	58.8	60.1	1.3
CH519	Church	-4,691	6,400	57.6	59.7	2.1
CH520	Church	3,327	10,191	52.8	54.3	1.5
CH521	Church	427	8,681	55.2	57.2	2.0
CH522	Church	13,607	1,267	60.3	63.4	3.1
CH524	Church	34,683	4,171	59.0	61.7	2.7
CH529	Church	37,462	-1,270	56.3	54.6	-1.7
CH532	Church	23,813	9,141	54.0	55.6	1.6
HOS05	Hospital	15,713	-5,495	54.2	52.8	-1.4
HOS07	Hospital	15,334	-5,123	54.9	53.5	-1.4
HOS09	Hospital	23,095	8,420	56.7	58.2	1.5
HOS10	Hospital	18,684	3,896	61.7	65.7	4.0
HOS11	Hospital	18,500	8,884	53.3	54.9	1.6
HOS12	Hospital	13,791	-5,987	55.7	54.2	-1.5
HOS13	Hospital	29,985	5,901	60.7	63.5	2.8
HOS15	Hospital	17,190	1,285	61.8	66.2	4.4
HOS16	Hospital	13,553	7,081	57.9	59.2	1.3
HOS18	Hospital	13,797	-3,917	58.1	56.7	-1.4
HOS19	Hospital	17,676	2,790	58.4	62.3	3.9
LIB01	Library	15,816	-9,101	50.9	49.3	-1.6
LIB02	Library	15,450	7,185	58.3	59.8	1.5
LIB03	Library	24,178	-3,305	54.8	53.1	-1.7
LIB04	Library	23,842	6,513	63.4	65.3	1.9
LIB05	Library	3,672	4,468	66.7	68.1	1.4
LIB06	Library	32,350	-1,151	59.4	57.0	-2.4
LIB07	Library	16,622	-1,444	69.1	63.9	-5.2
LIB10	Library	37,424	2,049	63.2	63.5	0.3
LIB11	Library	-3,147	-6,769	63.1	61.8	-1.3
LIB13	Library	-3,179	6,210	58.0	60.2	2.2
NH003	Hospital, Convalescent	29,488	7,434	61.0	62.8	1.8
NH004	Hospital, Convalescent	34,331	5,967	59.0	61.8	2.8

Table M-12 (9 of 12)

Location Points CNEL Values and Comparison: Baseline 2003 and Project (2005) Conditions[2/]

Grid Cell ID	Use	X Dist. (feet)[1]	Y Dist. (feet)[1]	2003 CNEL	Project (2005) CNEL	Difference
NH007	Hospital, Convalescent	17,108	11,062	49.6	50.1	0.5
NH008	Hospital, Convalescent	20,727	-198	70.1	68.6	-1.5
NH009	Hospital, Convalescent	13,755	-5,511	56.3	54.8	-1.5
NH010	Hospital, Convalescent	34,543	11,454	50.7	52.4	1.7
NH012	Hospital, Convalescent	23,851	6,390	63.6	65.5	1.9
NH013	Hospital, Convalescent	16,922	7,743	56.5	58.1	1.6
NH015	Hospital, Convalescent	34,661	-443	60.3	58.9	-1.4
NH017	Hospital, Convalescent	34,326	6,502	59.8	62.4	2.6
NH018	Hospital, Convalescent	17,706	7,119	60.3	61.7	1.4
NH019	Hospital, Convalescent	14,640	6,647	60.8	62.2	1.4
NH022	Hospital, Convalescent	35,884	6,388	59.0	61.7	2.7
NH023	Hospital, Convalescent	13,941	-7,834	53.6	52.0	-1.6
NH025	Hospital, Convalescent	15,569	12,004	48.7	48.9	0.2
NH026	Hospital, Convalescent	26,823	2,036	63.4	66.4	3.0
NH027	Hospital, Convalescent	18,773	-9,296	48.7	47.2	-1.5
NH028	Hospital, Convalescent	14,396	6,645	60.6	62.0	1.4
NH033	Hospital, Convalescent	12,509	8,161	54.6	55.3	0.7
NH037	Hospital, Convalescent	34,990	-3,870	49.9	49.0	-0.9
NH038	Hospital, Convalescent	17,775	10,041	51.0	52.0	1.0
NH040	Hospital, Convalescent	22,738	6,430	63.7	65.6	1.9
NH041	Hospital, Convalescent	37,456	8,531	58.6	60.5	1.9
NH042	Hospital, Convalescent	34,661	7,463	60.1	62.2	2.1
NH043	Hospital, Convalescent	-7,595	6,080	58.9	60.6	1.7
NH044	Hospital, Convalescent	18,202	2,864	58.4	62.4	4.0
NH045	Hospital, Convalescent	15,756	-5,107	54.5	53.1	-1.4
PBS006	Public School	27,281	10,743	50.5	51.9	1.4
PBS009	Public School	34,094	2,313	63.2	64.8	1.6
PBS011	Public School	-2,515	-6,204	64.5	63.2	-1.3
PBS017	Public School	14,818	3,297	60.9	65.5	4.6
PBS018	Public School	35,904	3,121	61.3	63.5	2.2
PBS019	Public School	12,212	-1,924	70.0	63.9	-6.1
PBS021	Public School	911	-6,459	61.5	60.3	-1.2
PBS022	Public School	13,419	10,800	50.5	50.6	0.1
PBS023	Public School	15,909	-7,797	51.9	50.4	-1.5
PBS024	Public School	26,296	-2,314	57.4	55.5	-1.9
PBS026	Public School	23,650	-1,034	65.2	62.1	-3.1
PBS027	Public School	172	11,002	51.7	53.3	1.6
PBS028	Public School	15,282	7,661	56.2	57.6	1.4
PBS029	Public School	25,282	8,750	56.4	57.8	1.4
PBS031	Public School	-1,003	-8,864	57.2	56.3	-0.9
PBS032	Public School	-3,780	-6,609	63.9	62.4	-1.5
PBS033	Public School	14,499	-7,413	53.5	52.0	-1.5
PBS035	Public School	12,046	-585	71.0	77.2	6.2
PBS036	Public School	37,216	-3,113	50.9	50.0	-0.9
PBS040	Public School	31,524	-2,029	56.1	54.5	-1.6
PBS041	Public School	32,406	-2,584	54.0	52.6	-1.4
PBS042	Public School	12,992	-8,938	53.3	51.6	-1.7
PBS047	Public School	13,295	5,451	66.9	68.3	1.4
PBS048	Public School	13,951	6,710	59.9	61.4	1.5
PBS049	Public School	-1,068	-4,601	70.2	68.3	-1.9
PBS050	Public School	14,856	6,115	64.0	65.4	1.4
PBS054	Public School	16,704	9,736	51.5	52.4	0.9
PBS055	Public School	14,713	3	68.4	74.0	5.6

Table M-12 (10 of 12)

Location Points CNEL Values and Comparison: Baseline 2003 and Project (2005) Conditions[2/]

Grid Cell ID	Use	X Dist. (feet)[1]	Y Dist. (feet)[1]	2003 CNEL	Project (2005) CNEL	Difference
PBS058	Public School	10,708	-7,313	57.2	55.4	-1.8
PBS059	Public School	18,679	5,302	66.1	68.5	2.4
PBS061	Public School	419	7,093	58.1	60.5	2.4
PBS062	Public School	968	5,128	64.6	67.4	2.8
PBS086	Public School	38,040	1,964	63.1	63.2	0.1
PBS090	Public School	30,414	5,411	59.6	62.6	3.0
PBS091	Public School	11,903	-2,672	63.9	61.3	-2.6
PBS098	Public School	35,517	9,615	56.1	57.9	1.8
PBS099	Public School	-4,391	5,512	59.6	62.1	2.5
PBS100	Public School	36,630	5,989	58.2	61.0	2.8
PBS101	Public School	29,058	2,028	63.8	66.3	2.5
PBS102	Public School	17,390	-2,628	60.2	57.3	-2.9
PBS105	Public School	11,840	4,627	69.7	71.5	1.8
PBS106	Public School	808	9,178	54.4	56.4	2.0
PBS107	Public School	-8,294	5,322	61.0	62.7	1.7
PBS111	Public School	32,576	10,502	53.0	54.5	1.5
PBS113	Public School	34,981	4,193	59.0	61.7	2.7
PBS117	Public School	24,929	3,265	58.6	62.5	3.9
PBS120	Public School	-6,877	5,485	60.6	62.5	1.9
PBS121	Public School	-6,871	5,484	60.6	62.5	1.9
PBS122	Public School	5,515	8,945	54.3	55.4	1.1
PBS123	Public School	18,043	-527	71.6	69.3	-2.3
PBS125	Public School	33,837	-1,843	55.7	54.2	-1.5
PBS127	Public School	21,457	-3,062	56.4	54.4	-2.0
PBS128	Public School	18,588	-5,939	51.5	50.1	-1.4
PBS140	Public School	22,487	-1,032	66.1	62.8	-3.3
PBS201	Public School	23,648	-1,395	63.7	60.1	-3.6
PRK01	Park	11,566	6,133	61.7	62.9	1.2
PRK02	Park	5,414	4,921	64.6	65.8	1.2
PRK03	Park	21,160	-3,063	56.5	54.5	-2.0
PRK05	Park	9,350	-9,074	55.4	53.6	-1.8
PRK07	Park	-13,479	6,711	55.9	57.5	1.6
PRK10	Park	-5,023	-4,415	73.8	71.4	-2.4
PRK11	Park	-1,802	-8,136	59.0	58.0	-1.0
PRK13	Park	-225	-8,037	58.5	57.5	-1.0
PRK15	Park	1,472	-5,400	63.9	62.7	-1.2
PRK16	Park	1,719	-7,830	57.9	56.9	-1.0
PRK18	Park	13,866	-7,408	54.1	52.5	-1.6
PRK201	Park	-2,921	5,657	59.3	61.7	2.4
PRK32	Park	25,609	7,591	60.5	62.2	1.7
PRK41	Park	15,768	6,307	63.4	64.8	1.4
PRK42	Park	13,359	1,894	58.9	61.8	2.9
PRK43	Park	23,171	4,140	60.1	63.7	3.6
PRK45	Park	28,752	5,597	60.7	63.6	2.9
PRK46	Park	36,620	5,021	58.0	60.9	2.9
PRK52	Park	14,558	-1,937	67.2	62.2	-5.0
PRK56	Park	28,407	1,919	64.0	66.6	2.6
PRK59	Park	18,760	7,140	61.0	62.4	1.4
PRK60	Park	13,470	9,437	52.3	52.7	0.4
PRK62	Park	2,383	-6,026	61.3	60.2	-1.1
PRK65	Park	-6,967	-8,394	60.4	58.9	-1.5
PRK67	Park	-10,639	716	73.8	77.5	3.7
PRK68	Park	-761	5,208	62.4	65.1	2.7

Table M-12 (11 of 12)

Location Points CNEL Values and Comparison: Baseline 2003 and Project (2005) Conditions[2/]

Grid Cell ID	Use	X Dist. (feet)[1]	Y Dist. (feet)[1]	2003 CNEL	Project (2005) CNEL	Difference
PRK70	Park	34,964	-416	60.2	58.9	-1.3
PRK71	Park	-4,883	-7,930	60.7	59.3	-1.4
PRK72	Park	-3,078	-6,614	63.5	62.2	-1.3
PVS001	Private School	37,733	11,384	52.1	53.9	1.8
PVS002	Private School	37,336	-3,455	50.1	49.2	-0.9
PVS003	Private School	34,483	5,967	58.9	61.7	2.8
PVS004	Private School	27,097	2,468	61.9	65.0	3.1
PVS007	Private School	-7,778	4,626	63.5	65.4	1.9
PVS011	Private School	833	5,679	62.1	64.8	2.7
PVS012	Private School	771	5,989	61.1	63.7	2.6
PVS017	Private School	34,119	6,123	59.3	62.0	2.7
PVS025	Private School	12,977	12,319	49.0	49.1	0.1
PVS026	Private School	36,140	6,964	59.6	62.0	2.4
PVS028	Private School	24,379	5,761	63.3	65.9	2.6
PVS029	Private School	23,982	7,178	61.6	63.4	1.8
PVS030	Private School	28,850	11,455	49.2	50.6	1.4
PVS031	Private School	-12,447	6,370	57.0	58.6	1.6
PVS033	Private School	34,984	5,635	58.3	61.2	2.9
PVS034	Private School	29,461	-1,469	59.6	57.1	-2.5
PVS035	Private School	34,140	9,211	57.0	58.7	1.7
PVS036	Private School	25,423	11,457	48.7	49.9	1.2
PVS037	Private School	29,435	-516	63.2	61.4	-1.8
PVS044	Private School	13,506	6,729	59.6	60.9	1.3
PVS046	Private School	29,009	-4,204	51.1	49.8	-1.3
PVS048	Private School	-501	-8,326	58.0	57.1	-0.9
PVS049	Private School	34,967	2,020	63.7	64.5	0.8
PVS051	Private School	16,298	5,790	65.9	67.6	1.7
PVS054	Private School	32,159	8,982	57.3	59.0	1.7
PVS055	Private School	18,415	5,475	66.3	68.4	2.1
PVS056	Private School	34,709	4,608	58.3	61.4	3.1
PVS060	Private School	6,258	8,224	55.3	56.2	0.9
PVS062	Private School	19,294	-197	70.6	69.9	-0.7
PVS064	Private School	13,310	7,076	57.8	59.1	1.3
PVS065	Private School	33,672	6,369	59.9	62.5	2.6
PVS066	Private School	14,716	11,128	49.9	50.0	0.1
PVS067	Private School	32,753	-466	61.3	59.8	-1.5
PVS069	Private School	13,205	6,854	58.8	60.1	1.3
PVS070	Private School	15,369	3,722	62.8	67.1	4.3
PVS071	Private School	2,864	13,792	48.7	49.8	1.1
PVS073	Private School	24,503	5,600	63.0	65.8	2.8
PVS074	Private School	24,091	6,749	62.9	64.7	1.8
PVS077	Private School	12,602	-226	68.5	75.4	6.9
PVS081	Private School	29,676	2,047	63.8	66.1	2.3
PVS082	Private School	32,177	6,695	60.8	63.1	2.3
PVS083	Private School	17,478	5,970	65.3	67.0	1.7
PVS084	Private School	16,261	-881	72.6	69.0	-3.6
PVS085	Private School	32,138	10,688	52.2	53.7	1.5
PVS086	Private School	36,351	8,881	57.9	59.7	1.8
PVS087	Private School	32,298	-1,596	57.5	55.5	-2.0
PVS091	Private School	27,180	2,649	61.1	64.5	3.4
PVS092	Private School	18,568	9,623	51.8	53.1	1.3
PVS093	Private School	-5,793	5,899	59.1	61.2	2.1
PVS099	Private School	22,860	11,024	49.3	50.6	1.3

Table M-12 (12 of 12)

Location Points CNEL Values and Comparison: Baseline 2003 and Project (2005) Conditions[2/]

Grid Cell ID	Use	X Dist. (feet)[1]	Y Dist. (feet)[1]	2003 CNEL	Project (2005) CNEL	Difference
PVS101	Private School	29,432	-911	61.9	59.5	-2.4
PVS103	Private School	3,278	9,736	53.4	55.0	1.6
PVS104	Private School	9,240	3,525	67.5	72.2	4.7
PVS105	Private School	14,468	-9,493	51.6	49.9	-1.7
PVS106	Private School	26,663	6,419	62.7	64.9	2.2
PVS107	Private School	3,658	5,088	62.7	64.8	2.1
PVS108	Private School	23,359	6,499	63.5	65.4	1.9
PVS109	Private School	18,639	3,216	59.0	63.4	4.4
PVS110	Private School	-573	-8,780	57.2	56.3	-0.9
PVS111	Private School	16,874	-6,105	52.6	51.2	-1.4
PBS114	Private School	9,738	3,976	69.4	72.6	3.2
PBS116	Private School	8,575	4,739	69.8	70.8	1.0
PVS138	Private School	-2,901	10,004	51.9	53.4	1.5

Note: Shaded cells represent grid points with an increase of 1.5 decibels or greater in 2005 (compared to 2003) if the 2005 CNEL value is greater than or equal to 65.0 decibels.

1/ The sites are located by X and Y coordinates in feet. Each X and Y value is a distance measured in feet from the airport reference point on the airport (near the Tom Bradley International Terminal. This type of coordinate system is called the Cartesian or rectangular coordinate system. This system is commonly defined by two axes at right angles (two lines that form a 90-degree angle to each other and are perpendicular) forming a plane (xy plane). The horizontal (moving left or right along the plane) axis is called the x-axis. The opposite is called the vertical (moving up or down along the plane) axis, which is called the y-axis. The point of intersection (where both the x and y axes meet) is called the origin point (depicted as 0,0 point). A unit of length is used to mark along the x and y axes, which forms a grid. To specify a particular point on a two dimensional coordinate system, you indicate the x unit first, followed by the y unit in the form (x,y), an ordered pair. The intersection of the two x-y axes creates four quadrants-northeast, southeast, southwest and northwest. In the northeast quadrant, values are (x,y), and southeast:(-x,y), southwest:(-x,-y) and northwest:(x,-y).

2/ Calculated CNEL levels represent levels at the specific grid point location. This data provides supplemental information for specific noise-sensitive locations. Determination of significance is conducted via noise-sensitive parcel selection using calculated CNEL contours.

Source: Ricondo & Associates, Inc., 2004; Based on Landrum and Brown, 2002 Grids – Final LAX Master Plan EIS/EIR
Prepared by: Ricondo & Associates, Inc.

Table M-13 (1of 12)

Location Points TA-65 Values and Comparison: Baseline 2003 Conditions and Project (2005) Conditions

Grid Cell ID	Use	X Dist. (feet)[1]	Y Dist. (feet)[1]	2003 TA-65	Project (2005) TA-65	Difference
C08	Regular Grid	-15,000	9,000	0.3	0.9	0.6
C09	Regular Grid	-15,000	12,000	0.0	0.0	0.0
D06	Regular Grid	-12,000	3,000	128.3	191.8	63.5
D07	Regular Grid	-12,000	6,000	18.0	32.2	14.2
D08	Regular Grid	-12,000	9,000	0.5	1.2	0.7
D09	Regular Grid	-12,000	12,000	0.0	0.0	0.0
E07	Regular Grid	-9,000	6,000	23.4	38.6	15.2
E08	Regular Grid	-9,000	9,000	0.7	0.8	0.1
E09	Regular Grid	-9,000	12,000	0.0	0.0	0.0
F02	Regular Grid	-6,000	-9,000	14.8	9.1	-5.7
F03	Regular Grid	-6,000	-6,000	97.3	87.7	-9.6
F07	Regular Grid	-6,000	6,000	22.2	44.9	22.7
F08	Regular Grid	-6,000	9,000	0.5	0.2	-0.3
F09	Regular Grid	-6,000	12,000	0.0	0.0	0.0
G01	Regular Grid	-3,000	-12,000	0.4	0.4	0.0
G02	Regular Grid	-3,000	-9,000	9.5	7.0	-2.5
G03	Regular Grid	-3,000	-6,000	87.9	77.6	-10.3
G07	Regular Grid	-3,000	6,000	14.4	35.8	21.4
G08	Regular Grid	-3,000	9,000	0.0	0.0	0.0
G09	Regular Grid	-3,000	12,000	0.0	0.0	0.0
H01	Regular Grid	0	-12,000	0.0	0.1	0.1
H02	Regular Grid	0	-9,000	6.6	3.7	-2.9
H03	Regular Grid	0	-6,000	70.2	52.4	-17.8
H07	Regular Grid	0	6,000	32.8	60.7	27.9
H08	Regular Grid	0	9,000	0.2	1.8	1.6
H09	Regular Grid	0	12,000	0.0	0.0	0.0
I01	Regular Grid	3,000	-12,000	0.0	0.0	0.0
I02	Regular Grid	3,000	-9,000	0.7	0.2	-0.5
I03	Regular Grid	3,000	-6,000	31.0	17.5	-13.5
I07	Regular Grid	3,000	6,000	39.3	70.2	30.9
I08	Regular Grid	3,000	9,000	0.3	2.8	2.5
I09	Regular Grid	3,000	12,000	0.0	0.0	0.0
J01	Regular Grid	6,000	-12,000	0.0	0.0	0.0
J02	Regular Grid	6,000	-9,000	0.7	0.0	-0.7
J03	Regular Grid	6,000	-6,000	24.0	10.4	-13.6
J07	Regular Grid	6,000	6,000	10.6	21.6	11.0
J08	Regular Grid	6,000	9,000	0.3	1.2	0.9
J09	Regular Grid	6,000	12,000	0.0	0.0	0.0
K01	Regular Grid	9,000	-12,000	0.0	0.0	0.0
K02	Regular Grid	9,000	-9,000	0.9	0.0	-0.9
K03	Regular Grid	9,000	-6,000	28.0	14.4	-13.6
K05	Regular Grid	9,000	0	364.6	372.6	8.0
K07	Regular Grid	9,000	6,000	34.9	53.9	19.0
K08	Regular Grid	9,000	9,000	0.6	1.5	0.9
K09	Regular Grid	9,000	12,000	0.1	0.2	0.1
L01	Regular Grid	12,000	-12,000	0.0	0.0	0.0
L02	Regular Grid	12,000	-9,000	0.3	0.1	-0.2
L03	Regular Grid	12,000	-6,000	7.2	3.4	-3.8
L04	Regular Grid	12,000	-3,000	72.8	33.1	-39.7
L05	Regular Grid	12,000	0	74.5	101.9	27.4
L06	Regular Grid	12,000	3,000	64.3	116.1	51.8

Table M-13 (2 of 12)

Location Points TA-65 Values and Comparison: Baseline 2003 Conditions and Project (2005) Conditions

Grid Cell ID	Use	X Dist. (feet)[1]	Y Dist. (feet)[1]	2003 TA-65	Project (2005) TA-65	Difference
L07	Regular Grid	12,000	6,000	65.0	106.6	41.6
L08	Regular Grid	12,000	9,000	0.9	1.6	0.7
L09	Regular Grid	12,000	12,000	0.2	0.4	0.2
M01	Regular Grid	15,000	-12,000	0.0	0.0	0.0
M02	Regular Grid	15,000	-9,000	0.0	0.0	0.0
M03	Regular Grid	15,000	-6,000	1.0	0.9	-0.1
M04	Regular Grid	15,000	-3,000	28.5	13.6	-14.9
M05	Regular Grid	15,000	0	107.9	100.7	-7.2
M06	Regular Grid	15,000	3,000	38.6	80.6	42.0
M07	Regular Grid	15,000	6,000	84.9	140.4	55.5
M08	Regular Grid	15,000	9,000	1.2	1.8	0.6
M09	Regular Grid	15,000	12,000	0.4	0.2	-0.2
N01	Regular Grid	18,000	-12,000	0.0	0.0	0.0
N02	Regular Grid	18,000	-9,000	0.0	0.0	0.0
N03	Regular Grid	18,000	-6,000	0.6	0.6	0.0
N04	Regular Grid	18,000	-3,000	14.9	10.8	-4.1
N05	Regular Grid	18,000	0	120.0	100.4	-19.6
N06	Regular Grid	18,000	3,000	22.9	53.4	30.5
N07	Regular Grid	18,000	6,000	91.7	154.2	62.5
N08	Regular Grid	18,000	9,000	2.3	2.6	0.3
N09	Regular Grid	18,000	12,000	0.5	0.6	0.1
O01	Regular Grid	21,000	-12,000	0.0	0.0	0.0
O02	Regular Grid	21,000	-9,000	0.0	0.0	0.0
O03	Regular Grid	21,000	-6,000	0.5	0.4	-0.1
O04	Regular Grid	21,000	-3,000	9.7	5.6	-4.1
O05	Regular Grid	21,000	0	120.2	100.2	-20.0
O06	Regular Grid	21,000	3,000	14.5	48.0	33.5
O07	Regular Grid	21,000	6,000	92.5	157.3	64.8
O08	Regular Grid	21,000	9,000	4.0	3.0	-1.0
O09	Regular Grid	21,000	12,000	0.6	0.9	0.3
P01	Regular Grid	24,000	-12,000	0.0	0.0	0.0
P02	Regular Grid	24,000	-9,000	0.0	0.0	0.0
P03	Regular Grid	24,000	-6,000	0.4	0.3	-0.1
P04	Regular Grid	24,000	-3,000	5.9	4.3	-1.6
P05	Regular Grid	24,000	0	124.5	99.9	-24.6
P06	Regular Grid	24,000	3,000	15.5	56.8	41.3
P07	Regular Grid	24,000	6,000	82.6	141.2	58.6
P08	Regular Grid	24,000	9,000	6.1	4.6	-1.5
P09	Regular Grid	24,000	12,000	0.5	0.7	0.2
Q01	Regular Grid	27,000	-12,000	0.0	0.0	0.0
Q02	Regular Grid	27,000	-9,000	0.1	0.0	-0.1
Q03	Regular Grid	27,000	-6,000	0.4	0.3	-0.1
Q04	Regular Grid	27,000	-3,000	4.4	2.5	-1.9
Q05	Regular Grid	27,000	0	116.7	87.9	-28.8
Q06	Regular Grid	27,000	3,000	23.9	72.0	48.1
Q07	Regular Grid	27,000	6,000	73.1	125.8	52.7
Q08	Regular Grid	27,000	9,000	11.7	10.1	-1.6
Q09	Regular Grid	27,000	12,000	0.5	0.7	0.2
R01	Regular Grid	30,000	-12,000	0.0	0.0	0.0
R02	Regular Grid	30,000	-9,000	0.1	0.0	-0.1
R03	Regular Grid	30,000	-6,000	0.3	0.2	-0.1
R04	Regular Grid	30,000	-3,000	3.2	2.3	-0.9
R05	Regular Grid	30,000	0	96.2	71.0	-25.2

Table M-13 (3 of 12)

Location Points TA-65 Values and Comparison: Baseline 2003 Conditions and Project (2005) Conditions

Grid Cell ID	Use	X Dist. (feet)[1]	Y Dist. (feet)[1]	2003 TA-65	Project (2005) TA-65	Difference
R06	Regular Grid	30,000	3,000	45.7	74.1	28.4
R07	Regular Grid	30,000	6,000	60.5	110.7	50.2
R08	Regular Grid	30,000	9,000	23.3	27.6	4.3
R09	Regular Grid	30,000	12,000	0.4	0.8	0.4
S01	Regular Grid	33,000	-12,000	0.0	0.0	0.0
S02	Regular Grid	33,000	-9,000	0.1	0.0	-0.1
S03	Regular Grid	33,000	-6,000	0.3	0.0	-0.3
S04	Regular Grid	33,000	-3,000	1.1	2.0	0.9
S05	Regular Grid	33,000	0	78.8	55.0	-23.8
S06	Regular Grid	33,000	3,000	54.2	74.9	20.7
S07	Regular Grid	33,000	6,000	47.6	89.4	41.8
S08	Regular Grid	33,000	9,000	27.0	37.3	10.3
S09	Regular Grid	33,000	12,000	0.5	0.8	0.3
T01	Regular Grid	36,000	-12,000	0.0	0.0	0.0
T02	Regular Grid	36,000	-9,000	0.1	0.0	-0.1
T03	Regular Grid	36,000	-6,000	0.2	0.0	-0.2
T04	Regular Grid	36,000	-3,000	0.8	1.6	0.8
T05	Regular Grid	36,000	0	60.5	40.8	-19.7
T06	Regular Grid	36,000	3,000	61.7	74.1	12.4
T07	Regular Grid	36,000	6,000	33.2	67.3	34.1
T08	Regular Grid	36,000	9,000	29.8	42.9	13.1
T09	Regular Grid	36,000	12,000	0.5	0.8	0.3
U01	Regular Grid	39,000	-12,000	0.0	0.0	0.0
U02	Regular Grid	39,000	-9,000	0.1	0.0	-0.1
U03	Regular Grid	39,000	-6,000	0.2	0.0	-0.2
U04	Regular Grid	39,000	-3,000	0.6	1.2	0.6
U05	Regular Grid	39,000	0	40.7	27.7	-13.0
U06	Regular Grid	39,000	3,000	62.2	68.8	6.6
U07	Regular Grid	39,000	6,000	22.7	45.7	23.0
U08	Regular Grid	39,000	9,000	29.9	48.8	18.9
U09	Regular Grid	39,000	12,000	2.1	0.8	-1.3
V01	Regular Grid	42,000	-12,000	0.0	0.0	0.0
V02	Regular Grid	42,000	-9,000	0.1	0.0	-0.1
V03	Regular Grid	42,000	-6,000	0.2	0.0	-0.2
V04	Regular Grid	42,000	-3,000	0.5	0.8	0.3
V05	Regular Grid	42,000	0	25.2	21.6	-3.6
V06	Regular Grid	42,000	3,000	62.0	63.6	1.6
V07	Regular Grid	42,000	6,000	13.1	36.0	22.9
V08	Regular Grid	42,000	9,000	29.0	45.7	16.7
V09	Regular Grid	42,000	12,000	3.3	3.0	-0.3
W01	Regular Grid	45,000	-12,000	0.0	0.0	0.0
W02	Regular Grid	45,000	-9,000	0.1	0.0	-0.1
W03	Regular Grid	45,000	-6,000	0.2	0.0	-0.2
W04	Regular Grid	45,000	-3,000	0.4	0.5	0.1
W05	Regular Grid	45,000	0	13.7	17.2	3.5
W06	Regular Grid	45,000	3,000	56.7	57.9	1.2
W07	Regular Grid	45,000	6,000	12.5	30.7	18.2
W08	Regular Grid	45,000	9,000	27.2	38.5	11.3
W09	Regular Grid	45,000	12,000	3.9	2.0	-1.9
X01	Regular Grid	48,000	-12,000	0.0	0.0	0.0
X02	Regular Grid	48,000	-9,000	0.1	0.0	-0.1
X03	Regular Grid	48,000	-6,000	0.1	0.0	-0.1
X04	Regular Grid	48,000	-3,000	0.3	0.3	0.0

Table M-13 (4 of 12)

Location Points TA-65 Values and Comparison: Baseline 2003 Conditions and Project (2005) Conditions

Grid Cell ID	Use	X Dist. (feet)[1]	Y Dist. (feet)[1]	2003 TA-65	Project (2005) TA-65	Difference
X05	Regular Grid	48,000	0	8.7	12.2	3.5
X06	Regular Grid	48,000	3,000	49.8	46.1	-3.7
X07	Regular Grid	48,000	6,000	11.4	28.8	17.4
X08	Regular Grid	48,000	9,000	23.1	31.9	8.8
X09	Regular Grid	48,000	12,000	4.2	4.8	0.6
Y01	Regular Grid	51,000	-12,000	0.0	0.0	0.0
Y02	Regular Grid	51,000	-9,000	0.1	0.0	-0.1
Y03	Regular Grid	51,000	-6,000	0.1	0.0	-0.1
Y04	Regular Grid	51,000	-3,000	0.2	0.2	0.0
Y05	Regular Grid	51,000	0	5.5	7.9	2.4
Y06	Regular Grid	51,000	3,000	40.4	34.1	-6.3
Y07	Regular Grid	51,000	6,000	12.2	28.5	16.3
Y08	Regular Grid	51,000	9,000	14.9	21.2	6.3
Y09	Regular Grid	51,000	12,000	4.5	5.6	1.1
Z01	Regular Grid	54,000	-12,000	0.0	0.0	0.0
Z02	Regular Grid	54,000	-9,000	0.1	0.0	-0.1
Z03	Regular Grid	54,000	-6,000	0.1	0.0	-0.1
Z04	Regular Grid	54,000	-3,000	0.2	0.1	-0.1
Z05	Regular Grid	54,000	0	4.3	2.9	-1.4
Z06	Regular Grid	54,000	3,000	29.9	22.1	-7.8
Z07	Regular Grid	54,000	6,000	12.9	26.5	13.6
Z08	Regular Grid	54,000	9,000	8.2	20.0	11.8
Z09	Regular Grid	54,000	12,000	4.6	7.3	2.7
CH006	Church	18,362	851	91.8	101.8	10.0
CH008	Church	-1,056	-6,191	63.0	47.7	-15.3
CH011	Church	33,776	-3,732	0.6	1.1	0.5
CH012	Church	34,672	611	79.5	59.7	-19.8
CH019	Church	16,609	-6,394	0.4	0.4	0.0
CH020	Church	16,609	-5,892	0.6	0.7	0.1
CH022	Church	18,259	9,542	1.1	2.2	1.1
CH025	Church	16,984	-6,155	0.5	0.5	0.0
CH026	Church	772	5,897	50.5	97.7	47.2
CH030	Church	37,397	-3,562	0.5	0.8	0.3
CH031	Church	29,694	4,531	28.7	59.7	31.0
CH032	Church	34,999	-2,528	2.8	2.0	-0.8
CH037	Church	12,173	2,634	35.2	61.4	26.2
CH044	Church	29,459	441	103.4	79.4	-24.0
CH047	Church	36,169	6,797	45.2	80.1	34.9
CH048	Church	36,695	2,519	75.2	74.1	-1.1
CH049	Church	29,734	8,749	30.6	42.9	12.3
CH052	Church	28,386	11,458	0.5	0.8	0.3
CH053	Church	32,138	10,827	3.1	1.0	-2.1
CH056	Church	29,496	10,032	4.8	2.1	-2.7
CH058	Church	37,445	-3,804	0.5	0.6	0.1
CH060	Church	37,453	1,503	79.0	65.8	-13.2
CH062	Church	18,436	-9,362	0.0	0.0	0.0
CH067	Church	24,220	9,999	2.5	1.5	-1.0
CH069	Church	24,032	-1,953	42.9	18.7	-24.2
CH072	Church	36,144	10,802	5.3	2.6	-2.7
CH075	Church	36,127	-1,223	15.0	13.1	-1.9
CH076	Church	36,351	8,763	36.5	57.4	20.9
CH078	Church	30,942	225	91.8	69.3	-22.5
CH082	Church	15,556	4,179	87.8	152.9	65.1

Table M-13 (5 of 12)

Location Points TA-65 Values and Comparison: Baseline 2003 Conditions and Project (2005) Conditions

Grid Cell ID	Use	X Dist. (feet)[1]	Y Dist. (feet)[1]	2003 TA-65	Project (2005) TA-65	Difference
CH083	Church	-5,007	6,170	12.6	35.0	22.4
CH087	Church	15,502	10,235	0.8	1.0	0.2
CH094	Church	37,402	4,700	20.0	43.1	23.1
CH096	Church	33,100	4,191	19.6	53.0	33.4
CH097	Church	922	-6,751	27.4	15.3	-12.1
CH098	Church	3,426	10,997	0.0	0.0	0.0
CH099	Church	15,214	-4,708	1.7	1.9	0.2
CH100	Church	16,819	5,275	93.8	158.0	64.2
CH101	Church	3,028	9,100	0.3	2.4	2.1
CH102	Church	29,435	-3,393	1.2	1.8	0.6
CH103	Church	33,060	9,231	23.3	30.3	7.0
CH107	Church	12,493	-6,171	2.4	1.5	-0.9
CH108	Church	12,557	-6,505	1.9	0.7	-1.2
CH109	Church	-7,997	6,637	11.9	21.8	9.9
CH116	Church	26,573	11,459	0.6	0.8	0.2
CH118	Church	34,682	5,288	23.6	48.2	24.6
CH119	Church	-3,523	-8,901	9.7	7.4	-2.3
CH120	Church	-3,133	-5,122	135.5	117.9	-17.6
CH121	Church	-1,025	-8,528	10.2	6.6	-3.6
CH122	Church	-2,777	-7,154	39.7	30.3	-9.4
CH129	Church	20,742	-3,140	6.2	4.7	-1.5
CH132	Church	15,736	5,775	91.7	153.8	62.1
CH133	Church	27,851	1,067	106.2	94.3	-11.9
CH135	Church	33,627	6,388	48.8	90.1	41.3
CH137	Church	34,656	-3,968	0.5	0.7	0.2
CH139	Church	36,337	10,957	4.5	2.1	-2.4
CH140	Church	34,661	-513	45.0	28.5	-16.5
CH144	Church	30,061	-1,582	28.4	16.1	-12.3
CH145	Church	37,669	-1,182	12.5	11.3	-1.2
CH146	Church	13,494	8,321	2.8	3.0	0.2
CH150	Church	16,056	6,214	83.4	139.3	55.9
CH151	Church	16,044	5,617	92.9	155.7	62.8
CH156	Church	34,981	1,468	86.1	73.2	-12.9
CH157	Church	4,879	6,462	8.5	21.7	13.2
CH158	Church	24,437	2,639	31.7	82.3	50.6
CH160	Church	12,198	7,451	5.4	5.7	0.3
CH162	Church	18,585	-9,335	0.0	0.0	0.0
CH163	Church	36,352	7,585	49.1	84.9	35.8
CH164	Church	17,219	5,679	93.6	156.6	63.0
CH165	Church	31,191	-1,517	26.4	15.2	-11.2
CH166	Church	17,839	7,360	40.1	62.4	22.3
CH168	Church	2,715	9,777	0.1	0.2	0.1
CH172	Church	16,888	11,345	0.6	0.7	0.1
CH173	Church	20,347	-4,191	1.4	1.7	0.3
CH174	Church	37,440	7,189	44.9	79.4	34.5
CH175	Church	-4,960	6,402	9.8	25.0	15.2
CH177	Church	29,502	11,020	0.7	0.9	0.2
CH180	Church	37,667	5,420	14.6	41.2	26.6
CH182	Church	37,462	-1,152	13.6	11.7	-1.9
CH183	Church	35,808	6,815	46.3	83.0	36.7
CH185	Church	32,290	4,655	18.6	45.3	26.7
CH186	Church	37,662	-2,735	0.8	1.5	0.7
CH188	Church	29,706	9,678	7.0	6.2	-0.8

Table M-13 (6 of 12)

Location Points TA-65 Values and Comparison: Baseline 2003 Conditions and Project (2005) Conditions

Grid Cell ID	Use	X Dist. (feet)[1]	Y Dist. (feet)[1]	2003 TA-65	Project (2005) TA-65	Difference
CH189	Church	37,456	8,316	43.3	73.2	29.9
CH190	Church	15,769	-1,744	109.9	58.1	-51.8
CH191	Church	37,440	3,115	60.8	70.3	9.5
CH193	Church	16,098	3,516	57.9	115.1	57.2
CH197	Church	36,141	-622	33.4	21.8	-11.6
CH199	Church	32,312	-2,517	3.8	2.4	-1.4
CH201	Church	30,178	11,450	0.6	0.9	0.3
CH205	Church	36,034	6,388	38.5	71.1	32.6
CH206	Church	32,298	-1,373	27.8	15.6	-12.2
CH208	Church	34,964	-345	49.3	31.7	-17.6
CH211	Church	36,174	2,481	77.0	75.9	-1.1
CH213	Church	18,281	1,520	41.8	86.6	44.8
CH216	Church	32,313	1,911	89.3	85.3	-4.0
CH218	Church	15,869	-951	120.0	99.7	-20.3
CH219	Church	22,848	11,338	0.7	1.1	0.4
CH221	Church	23,975	6,427	79.5	135.3	55.8
CH222	Church	15,086	-9,405	0.0	0.0	0.0
CH225	Church	13,793	-7,039	0.6	0.3	-0.3
CH230	Church	32,151	4,322	16.1	51.2	35.1
CH231	Church	36,143	9,975	8.2	9.7	1.5
CH234	Church	36,895	6,381	34.5	65.6	31.1
CH235	Church	32,127	2,022	86.9	85.4	-1.5
CH239	Church	29,501	6,867	64.6	115.8	51.2
CH240	Church	37,448	-2,742	0.8	1.6	0.8
CH241	Church	24,439	3,466	15.7	51.9	36.2
CH244	Church	37,681	8,609	38.7	65.4	26.7
CH247	Church	34,958	2,144	81.9	76.6	-5.3
CH250	Church	28,704	-4,168	0.8	1.1	0.3
CH251	Church	13,890	6,115	81.3	132.6	51.3
CH254	Church	17,430	10,595	0.8	1.1	0.3
CH255	Church	12,359	3,858	92.2	158.2	66.0
CH256	Church	16,578	3,534	56.4	112.8	56.4
CH257	Church	15,548	-8,178	0.1	0.1	0.0
CH259	Church	14,539	12,155	0.4	0.2	-0.2
CH260	Church	23,953	-3,330	3.8	2.2	-1.6
CH261	Church	19,150	-3,057	10.2	5.8	-4.4
CH262	Church	-3,362	-7,566	32.4	24.0	-8.4
CH266	Church	16,872	3,711	64.9	124.2	59.3
CH267	Church	35,011	8,122	46.5	81.1	34.6
CH270	Church	31,466	6,365	57.1	101.8	44.7
CH273	Church	31,581	550	93.6	73.3	-20.3
CH275	Church	34,643	11,454	2.3	0.8	-1.5
CH276	Church	29,696	3,909	17.5	55.8	38.3
CH281	Church	33,441	3,079	56.0	75.0	19.0
CH282	Church	17,872	-2,898	15.7	11.4	-4.3
CH284	Church	8,877	10,121	0.3	0.8	0.5
CH285	Church	6,222	7,425	1.4	4.7	3.3
CH289	Church	15,218	-1,808	109.2	56.8	-52.4
CH290	Church	16,538	-2,345	61.5	22.3	-39.2
CH294	Church	32,328	7,233	57.6	101.4	43.8
CH300	Church	33,630	2,854	65.3	77.6	12.3
CH303	Church	29,690	5,046	37.6	81.8	44.2
CH304	Church	6,157	8,380	0.5	1.9	1.4

Table M-13 (7 of 12)

Location Points TA-65 Values and Comparison: Baseline 2003 Conditions and Project (2005) Conditions

Grid Cell ID	Use	X Dist. (feet)[1]	Y Dist. (feet)[1]	2003 TA-65	Project (2005) TA-65	Difference
CH308	Church	26,723	11,459	0.6	0.8	0.2
CH311	Church	29,706	9,728	6.7	5.5	-1.2
CH313	Church	34,942	2,884	65.5	74.9	9.4
CH316	Church	33,455	6,366	49.2	90.6	41.4
CH321	Church	26,844	6,592	73.5	125.1	51.6
CH322	Church	24,378	5,651	77.2	134.6	57.4
CH323	Church	32,144	3,499	39.6	66.1	26.5
CH329	Church	33,816	6,120	43.2	83.1	39.9
CH332	Church	29,987	1,050	103.1	86.8	-16.3
CH334	Church	-3,362	-8,211	18.3	13.6	-4.7
CH335	Church	35,032	9,135	27.0	38.8	11.8
CH338	Church	34,658	-3,718	0.6	1.0	0.4
CH340	Church	37,438	6,936	42.1	74.4	32.3
CH343	Church	15,571	5,631	93.0	155.6	62.6
CH346	Church	34,683	2,176	81.4	76.5	-4.9
CH350	Church	36,465	11,455	2.9	0.8	-2.1
CH351	Church	37,457	8,790	35.8	58.0	22.2
CH352	Church	36,665	11,456	2.9	0.9	-2.0
CH354	Church	35,029	10,381	6.4	4.6	-1.8
CH359	Church	34,660	-759	36.1	22.7	-13.4
CH361	Church	-297	10,928	0.0	0.0	0.0
CH364	Church	-3,000	-5,050	139.2	122.3	-16.9
CH366	Church	34,663	-2,477	3.2	2.1	-1.1
CH368	Church	29,105	-1,896	16.0	13.0	-3.0
CH375	Church	17,910	-9,299	0.0	0.0	0.0
CH378	Church	32,154	5,163	31.0	65.0	34.0
CH383	Church	23,176	6,146	82.6	141.9	59.3
CH388	Church	29,674	7,848	54.3	91.6	37.3
CH390	Church	32,137	10,569	4.0	1.4	-2.6
CH392	Church	33,524	-107	69.8	45.5	-24.3
CH393	Church	29,454	197	100.0	74.9	-25.1
CH395	Church	20	7,468	6.9	21.7	14.8
CH396	Church	-3,363	-7,999	22.8	16.7	-6.1
CH397	Church	-3,153	6,521	8.3	20.8	12.5
CH402	Church	33,574	-393	58.6	37.8	-20.8
CH405	Church	26,436	-4,141	0.9	1.2	0.3
CH408	Church	16,609	-6,117	0.5	0.6	0.1
CH411	Church	-5,649	6,168	15.5	37.4	21.9
CH413	Church	955	5,447	81.3	156.4	75.1
CH415	Church	-574	-8,529	9.3	5.9	-3.4
CH416	Church	-3,520	-6,950	47.7	38.8	-8.9
CH423	Church	34,438	6,123	39.6	77.7	38.1
CH427	Church	27,099	2,637	49.9	81.0	31.1
CH430	Church	29,435	-3,530	1.1	1.7	0.6
CH431	Church	26,113	11,458	0.6	0.9	0.3
CH432	Church	32,135	10,287	5.3	2.6	-2.7
CH433	Church	34,981	4,271	22.6	51.5	28.9
CH434	Church	29,486	4,620	31.2	66.3	35.1
CH436	Church	36,665	6,526	38.8	69.9	31.1
CH438	Church	16,883	7,283	36.7	55.8	19.1
CH440	Church	21,860	-3,132	5.7	4.2	-1.5
CH453	Church	30,531	6,362	61.3	110.0	48.7
CH457	Church	37,682	5,673	18.9	39.0	20.1

Table M-13 (8 of 12)

Location Points TA-65 Values and Comparison: Baseline 2003 Conditions and Project (2005) Conditions

Grid Cell ID	Use	X Dist. (feet)[1]	Y Dist. (feet)[1]	2003 TA-65	Project (2005) TA-65	Difference
CH459	Church	34,981	4,311	21.9	50.9	29.0
CH461	Church	2,474	-5,106	63.6	43.4	-20.2
CH462	Church	37,658	2,565	72.6	71.6	-1.0
CH463	Church	28,157	7,476	61.4	106.3	44.9
CH465	Church	29,437	-2,633	4.6	3.5	-1.1
CH469	Church	36,307	9,187	28.1	37.9	9.8
CH470	Church	15,830	5,944	89.0	149.4	60.4
CH471	Church	34,666	3,437	47.4	68.0	20.6
CH472	Church	34,478	360	75.3	54.7	-20.6
CH479	Church	29,687	3,172	39.9	72.2	32.3
CH480	Church	36,132	8,126	46.6	78.6	32.0
CH481	Church	6,983	6,070	19.7	24.6	4.9
CH482	Church	35,540	2,955	64.4	74.9	10.5
CH485	Church	37,466	9,880	11.9	12.8	0.9
CH493	Church	36,143	9,513	21.2	24.5	3.3
CH497	Church	12,760	12,329	0.2	0.3	0.1
CH500	Church	29,680	2,945	52.4	75.6	23.2
CH503	Church	-2,777	-7,028	42.7	33.2	-9.5
CH507	Church	38,086	-1,785	4.4	3.4	-1.0
CH509	Church	34,671	8,932	30.2	47.6	17.4
CH513	Church	17,184	8,722	3.4	3.0	-0.4
CH518	Church	5,989	6,176	9.0	14.9	5.9
CH519	Church	-4,691	6,400	9.3	24.4	15.1
CH520	Church	3,327	10,191	0.1	0.1	0.0
CH521	Church	427	8,681	1.5	4.7	3.2
CH522	Church	13,607	1,267	16.9	62.3	45.4
CH524	Church	34,683	4,171	23.8	52.5	28.7
CH529	Church	37,462	-1,270	11.2	10.4	-0.8
CH532	Church	23,813	9,141	5.7	3.8	-1.9
HOS05	Hospital	15,713	-5,495	1.0	1.1	0.1
HOS07	Hospital	15,334	-5,123	1.3	1.5	0.2
HOS09	Hospital	23,095	8,420	22.2	25.8	3.6
HOS10	Hospital	18,684	3,896	68.1	130.2	62.1
HOS11	Hospital	18,500	8,884	3.8	3.0	-0.8
HOS12	Hospital	13,791	-5,987	1.3	0.9	-0.4
HOS13	Hospital	29,985	5,901	57.2	104.6	47.4
HOS15	Hospital	17,190	1,285	46.5	90.7	44.2
HOS16	Hospital	13,553	7,081	22.0	27.0	5.0
HOS18	Hospital	13,797	-3,917	6.0	4.6	-1.4
HOS19	Hospital	17,676	2,790	13.1	46.4	33.3
LIB01	Library	15,816	-9,101	0.0	0.0	0.0
LIB02	Library	15,450	7,185	31.8	43.9	12.1
LIB03	Library	24,178	-3,305	3.9	2.3	-1.6
LIB04	Library	23,842	6,513	79.3	134.8	55.5
LIB05	Library	3,672	4,468	111.1	176.8	65.7
LIB06	Library	32,350	-1,151	35.7	18.6	-17.1
LIB07	Library	16,622	-1,444	115.9	70.8	-45.1
LIB10	Library	37,424	2,049	79.3	71.1	-8.2
LIB11	Library	-3,147	-6,769	52.0	42.7	-9.3
LIB13	Library	-3,179	6,210	12.8	29.7	16.9
NH003	Hospital, Convalescent	29,488	7,434	60.8	106.8	46.0
NH004	Hospital, Convalescent	34,331	5,967	36.2	76.2	40.0

Table M-13 (9 of 12)

Location Points TA-65 Values and Comparison: Baseline 2003 Conditions and Project (2005) Conditions

Grid Cell ID	Use	X Dist. (feet)[1]	Y Dist. (feet)[1]	2003 TA-65	Project (2005) TA-65	Difference
NH007	Hospital, Convalescent	17,108	11,062	0.7	0.9	0.2
NH008	Hospital, Convalescent	20,727	-198	120.1	99.0	-21.1
NH009	Hospital, Convalescent	13,755	-5,511	1.8	1.3	-0.5
NH010	Hospital, Convalescent	34,543	11,454	2.3	0.8	-1.5
NH012	Hospital, Convalescent	23,851	6,390	80.3	136.5	56.2
NH013	Hospital, Convalescent	16,922	7,743	10.0	12.2	2.2
NH015	Hospital, Convalescent	34,661	-443	47.0	30.6	-16.4
NH017	Hospital, Convalescent	34,326	6,502	47.0	88.4	41.4
NH018	Hospital, Convalescent	17,706	7,119	55.1	86.4	31.3
NH019	Hospital, Convalescent	14,640	6,647	56.4	91.1	34.7
NH022	Hospital, Convalescent	35,884	6,388	39.3	72.3	33.0
NH023	Hospital, Convalescent	13,941	-7,834	0.2	0.1	-0.1
NH025	Hospital, Convalescent	15,569	12,004	0.4	0.4	0.0
NH026	Hospital, Convalescent	26,823	2,036	79.3	94.9	15.6
NH027	Hospital, Convalescent	18,773	-9,296	0.0	0.0	0.0
NH028	Hospital, Convalescent	14,396	6,645	54.4	88.0	33.6
NH033	Hospital, Convalescent	12,509	8,161	2.8	3.2	0.4
NH037	Hospital, Convalescent	34,990	-3,870	0.6	0.8	0.2
NH038	Hospital, Convalescent	17,775	10,041	0.8	1.6	0.8
NH040	Hospital, Convalescent	22,738	6,430	81.3	138.5	57.2
NH041	Hospital, Convalescent	37,456	8,531	40.2	67.5	27.3
NH042	Hospital, Convalescent	34,661	7,463	52.5	92.7	40.2
NH043	Hospital, Convalescent	-7,595	6,080	22.9	42.0	19.1
NH044	Hospital, Convalescent	18,202	2,864	13.6	47.3	33.7
NH045	Hospital, Convalescent	15,756	-5,107	1.2	1.4	0.2
PBS006	Public School	27,281	10,743	0.8	1.0	0.2
PBS009	Public School	34,094	2,313	80.4	79.0	-1.4
PBS011	Public School	-2,515	-6,204	72.2	60.3	-11.9
PBS017	Public School	14,818	3,297	52.6	105.5	52.9
PBS018	Public School	35,904	3,121	58.9	73.1	14.2
PBS019	Public School	12,212	-1,924	117.8	64.9	-52.9
PBS021	Public School	911	-6,459	34.6	22.1	-12.5
PBS022	Public School	13,419	10,800	0.6	0.5	-0.1
PBS023	Public School	15,909	-7,797	0.1	0.1	0.0
PBS024	Public School	26,296	-2,314	13.1	10.8	-2.3
PBS026	Public School	23,650	-1,034	101.2	62.0	-39.2
PBS027	Public School	172	11,002	0.0	0.0	0.0
PBS028	Public School	15,282	7,661	7.4	9.9	2.5
PBS029	Public School	25,282	8,750	19.4	19.6	0.2
PBS031	Public School	-1,003	-8,864	7.9	4.8	-3.1
PBS032	Public School	-3,780	-6,609	59.4	50.6	-8.8
PBS033	Public School	14,499	-7,413	0.2	0.2	0.0
PBS035	Public School	12,046	-585	120.1	98.3	-21.8
PBS036	Public School	37,216	-3,113	0.6	1.2	0.6
PBS040	Public School	31,524	-2,029	8.0	7.9	-0.1
PBS041	Public School	32,406	-2,584	3.5	2.3	-1.2
PBS042	Public School	12,992	-8,938	0.1	0.0	-0.1
PBS047	Public School	13,295	5,451	93.7	155.5	61.8
PBS048	Public School	13,951	6,710	47.1	74.6	27.5
PBS049	Public School	-1,068	-4,601	152.0	131.3	-20.7
PBS050	Public School	14,856	6,115	83.8	138.4	54.6
PBS054	Public School	16,704	9,736	0.9	1.6	0.7
PBS055	Public School	14,713	3	111.6	100.3	-11.3

Table M-13 (10 of 12)

Location Points TA-65 Values and Comparison: Baseline 2003 Conditions and Project (2005) Conditions

Grid Cell ID	Use	X Dist. (feet)[1]	Y Dist. (feet)[1]	2003 TA-65	Project (2005) TA-65	Difference
PBS058	Public School	10,708	-7,313	2.2	0.9	-1.3
PBS059	Public School	18,679	5,302	98.4	166.9	68.5
PBS061	Public School	419	7,093	16.2	30.7	14.5
PBS062	Public School	968	5,128	123.4	222.0	98.6
PBS086	Public School	38,040	1,964	77.4	68.4	-9.0
PBS090	Public School	30,414	5,411	45.1	87.2	42.1
PBS091	Public School	11,903	-2,672	79.5	31.8	-47.7
PBS098	Public School	35,517	9,615	17.2	15.1	-2.1
PBS099	Public School	-4,391	5,512	29.1	66.9	37.8
PBS100	Public School	36,630	5,989	29.7	57.1	27.4
PBS101	Public School	29,058	2,028	85.1	90.1	5.0
PBS102	Public School	17,390	-2,628	35.2	15.3	-19.9
PBS105	Public School	11,840	4,627	96.9	160.5	63.6
PBS106	Public School	808	9,178	0.3	2.4	2.1
PBS107	Public School	-8,294	5,322	60.4	93.1	32.7
PBS111	Public School	32,576	10,502	4.4	1.9	-2.5
PBS113	Public School	34,981	4,193	24.0	52.2	28.2
PBS117	Public School	24,929	3,265	16.2	58.1	41.9
PBS120	Public School	-6,877	5,485	53.3	89.4	36.1
PBS121	Public School	-6,871	5,484	53.3	89.5	36.2
PBS122	Public School	5,515	8,945	0.3	1.3	1.0
PBS123	Public School	18,043	-527	120.5	100.1	-20.4
PBS125	Public School	33,837	-1,843	7.2	6.7	-0.5
PBS127	Public School	21,457	-3,062	6.3	4.7	-1.6
PBS128	Public School	18,588	-5,939	0.6	0.5	-0.1
PBS140	Public School	22,487	-1,032	104.2	68.4	-35.8
PBS201	Public School	23,648	-1,395	85.1	40.2	-44.9
PRK01	Park	11,566	6,133	59.5	96.0	36.5
PRK02	Park	5,414	4,921	77.0	123.0	46.0
PRK03	Park	21,160	-3,063	6.5	4.9	-1.6
PRK05	Park	9,350	-9,074	0.6	0.0	-0.6
PRK07	Park	-13,479	6,711	10.0	17.8	7.8
PRK10	Park	-5,023	-4,415	164.0	147.2	-16.8
PRK11	Park	-1,802	-8,136	14.3	11.2	-3.1
PRK13	Park	-225	-8,037	12.2	7.8	-4.4
PRK15	Park	1,472	-5,400	68.5	49.1	-19.4
PRK16	Park	1,719	-7,830	8.4	4.8	-3.6
PRK18	Park	13,866	-7,408	0.4	0.2	-0.2
PRK201	Park	-2,921	5,657	22.0	51.2	29.2
PRK32	Park	25,609	7,591	58.0	97.8	39.8
PRK41	Park	15,768	6,307	80.4	133.4	53.0
PRK42	Park	13,359	1,894	11.2	33.8	22.6
PRK43	Park	23,171	4,140	47.9	97.8	49.9
PRK45	Park	28,752	5,597	56.4	104.9	48.5
PRK46	Park	36,620	5,021	14.4	42.4	28.0
PRK52	Park	14,558	-1,937	104.1	51.0	-53.1
PRK56	Park	28,407	1,919	87.1	92.1	5.0
PRK59	Park	18,760	7,140	63.8	104.0	40.2
PRK60	Park	13,470	9,437	0.9	1.3	0.4
PRK62	Park	2,383	-6,026	31.1	17.9	-13.2
PRK65	Park	-6,967	-8,394	25.2	17.7	-7.5
PRK67	Park	-10,639	716	204.1	274.4	70.3
PRK68	Park	-761	5,208	65.3	128.4	63.1

Table M-13 (11 of 12)

Location Points TA-65 Values and Comparison: Baseline 2003 Conditions and Project (2005) Conditions

Grid Cell ID	Use	X Dist. (feet)[1]	Y Dist. (feet)[1]	2003 TA-65	Project (2005) TA-65	Difference
PRK70	Park	34,964	-416	46.4	30.7	-15.7
PRK71	Park	-4,883	-7,930	29.8	21.3	-8.5
PRK72	Park	-3,078	-6,614	57.0	47.1	-9.9
PVS001	Private School	37,733	11,384	3.9	1.2	-2.7
PVS002	Private School	37,336	-3,455	0.5	0.9	0.4
PVS003	Private School	34,483	5,967	34.6	75.2	40.6
PVS004	Private School	27,097	2,468	61.6	83.8	22.2
PVS007	Private School	-7,778	4,626	98.9	154.7	55.8
PVS011	Private School	833	5,679	62.1	121.1	59.0
PVS012	Private School	771	5,989	46.6	89.7	43.1
PVS017	Private School	34,119	6,123	41.6	81.0	39.4
PVS025	Private School	12,977	12,319	0.2	0.2	0.0
PVS026	Private School	36,140	6,964	47.1	83.1	36.0
PVS028	Private School	24,379	5,761	78.2	135.5	57.3
PVS029	Private School	23,982	7,178	66.5	115.8	49.3
PVS030	Private School	28,850	11,455	0.5	0.8	0.3
PVS031	Private School	-12,447	6,370	14.2	25.1	10.9
PVS033	Private School	34,984	5,635	27.2	61.0	33.8
PVS034	Private School	29,461	-1,469	35.7	18.4	-17.3
PVS035	Private School	34,140	9,211	24.3	34.2	9.9
PVS036	Private School	25,423	11,457	0.6	0.9	0.3
PVS037	Private School	29,435	-516	80.2	55.6	-24.6
PVS044	Private School	13,506	6,729	39.7	64.7	25.0
PVS046	Private School	29,009	-4,204	0.7	1.1	0.4
PVS048	Private School	-501	-8,326	10.8	6.8	-4.0
PVS049	Private School	34,967	2,020	83.3	76.4	-6.9
PVS051	Private School	16,298	5,790	91.5	153.8	62.3
PVS054	Private School	32,159	8,982	28.0	38.8	10.8
PVS055	Private School	18,415	5,475	99.0	167.1	68.1
PVS056	Private School	34,709	4,608	16.3	47.5	31.2
PVS060	Private School	6,258	8,224	0.6	2.1	1.5
PVS062	Private School	19,294	-197	121.7	100.3	-21.4
PVS064	Private School	13,310	7,076	20.1	22.8	2.7
PVS065	Private School	33,672	6,369	48.4	90.0	41.6
PVS066	Private School	14,716	11,128	0.6	0.5	-0.1
PVS067	Private School	32,753	-466	60.8	39.9	-20.9
PVS069	Private School	13,205	6,854	31.7	44.7	13.0
PVS070	Private School	15,369	3,722	74.1	138.1	64.0
PVS071	Private School	2,864	13,792	0.0	0.0	0.0
PVS073	Private School	24,503	5,600	76.2	133.4	57.2
PVS074	Private School	24,091	6,749	75.8	129.1	53.3
PVS077	Private School	12,602	-226	106.4	100.9	-5.5
PVS081	Private School	29,676	2,047	85.6	88.4	2.8
PVS082	Private School	32,177	6,695	57.2	102.0	44.8
PVS083	Private School	17,478	5,970	91.7	154.8	63.1
PVS084	Private School	16,261	-881	121.0	100.0	-21.0
PVS085	Private School	32,138	10,688	3.6	1.1	-2.5
PVS086	Private School	36,351	8,881	33.5	51.7	18.2
PVS087	Private School	32,298	-1,596	15.7	12.7	-3.0
PVS091	Private School	27,180	2,649	49.9	80.9	31.0
PVS092	Private School	18,568	9,623	1.1	2.2	1.1
PVS093	Private School	-5,793	5,899	25.9	53.3	27.4
PVS099	Private School	22,860	11,024	0.7	1.2	0.5

Table M-13 (12 of 12)

Location Points TA-65 Values and Comparison: Baseline 2003 Conditions and Project (2005) Conditions

Grid Cell ID	Use	X Dist. (feet)[1]	Y Dist. (feet)[1]	2003 TA-65	Project (2005) TA-65	Difference
PVS101	Private School	29,432	-911	64.9	33.1	-31.8
PVS103	Private School	3,278	9,736	0.1	0.3	0.2
PVS104	Private School	9,240	3,525	116.3	169.3	53.0
PVS105	Private School	14,468	-9,493	0.0	0.0	0.0
PVS106	Private School	26,663	6,419	74.0	126.6	52.6
PVS107	Private School	3,658	5,088	72.0	123.5	51.5
PVS108	Private School	23,359	6,499	80.4	137.0	56.6
PVS109	Private School	18,639	3,216	26.6	66.6	40.0
PVS110	Private School	-573	-8,780	7.8	4.7	-3.1
PVS111	Private School	16,874	-6,105	0.5	0.5	0.0
PBS114	Private School	9,738	3,976	110.5	169.2	58.7
PBS116	Private School	8,575	4,739	103.9	159.1	55.2
PVS138	Private School	-2,901	10,004	0.0	0.0	0.0

Note: TA-65 = Total number of minutes per day that exceed 65 decibels at indicated location.

1/ The sites are located by X and Y coordinates in feet. Each X and Y value is a distance measured in feet from the airport reference point on the airport (near the Tom Bradley International Terminal. This type of coordinate system is called the Cartesian or rectangular coordinate system. This system is commonly defined by two axes at right angles (two lines that form a 90-degree angle to each other and are perpendicular) forming a plane (xy plane). The horizontal (moving left or right along the plane) axis is called the x-axis. The opposite is called the vertical (moving up or down along the plane) axis, which is called the y-axis. The point of intersection (where both the x and y axes meet) is called the origin point (depicted as 0,0 point). A unit of length is used to mark along the x and y axes, which forms a grid. To specify a particular point on a two dimensional coordinate system, you indicate the x unit first, followed by the y unit in the form (x,y), an ordered pair. The intersection of the two x-y axes creates four quadrants-northeast, southeast, southwest and northwest. In the northeast quadrant, values are (x,y), and southeast:(-x,y), southwest:(-x,-y) and northwest:(x,-y).

Source: Ricondo & Associates, Inc., 2004; Based on Landrum and Brown, 2002 Grids – Final LAX Master Plan EIS/EIR
Prepared by: Ricondo & Associates, Inc.

Table M-14 (1of 12)

Location Points TA-75 Values and Comparison: Baseline 2003 and Project (2005) Conditions

Grid Cell ID	Use	X Dist. (feet)[1]	Y Dist. (feet)[1]	2003 TA-75	Project (2005) TA-75	Difference
C08	Regular Grid	-15,000	9,000	0.0	0.0	0.0
C09	Regular Grid	-15,000	12,000	0.0	0.0	0.0
D06	Regular Grid	-12,000	3,000	24.4	40.1	15.7
D07	Regular Grid	-12,000	6,000	0.1	0.3	0.2
D08	Regular Grid	-12,000	9,000	0.0	0.0	0.0
D09	Regular Grid	-12,000	12,000	0.0	0.0	0.0
E07	Regular Grid	-9,000	6,000	0.2	0.3	0.1
E08	Regular Grid	-9,000	9,000	0.0	0.0	0.0
E09	Regular Grid	-9,000	12,000	0.0	0.0	0.0
F02	Regular Grid	-6,000	-9,000	0.2	0.0	-0.2
F03	Regular Grid	-6,000	-6,000	11.8	7.7	-4.1
F07	Regular Grid	-6,000	6,000	0.2	0.1	-0.1
F08	Regular Grid	-6,000	9,000	0.0	0.0	0.0
F09	Regular Grid	-6,000	12,000	0.0	0.0	0.0
G01	Regular Grid	-3,000	-12,000	0.0	0.0	0.0
G02	Regular Grid	-3,000	-9,000	0.0	0.0	0.0
G03	Regular Grid	-3,000	-6,000	6.8	3.6	-3.2
G07	Regular Grid	-3,000	6,000	0.0	0.0	0.0
G08	Regular Grid	-3,000	9,000	0.0	0.0	0.0
G09	Regular Grid	-3,000	12,000	0.0	0.0	0.0
H01	Regular Grid	0	-12,000	0.0	0.0	0.0
H02	Regular Grid	0	-9,000	0.0	0.0	0.0
H03	Regular Grid	0	-6,000	2.8	0.8	-2.0
H07	Regular Grid	0	6,000	0.1	0.1	0.0
H08	Regular Grid	0	9,000	0.0	0.0	0.0
H09	Regular Grid	0	12,000	0.0	0.0	0.0
I01	Regular Grid	3,000	-12,000	0.0	0.0	0.0
I02	Regular Grid	3,000	-9,000	0.0	0.0	0.0
I03	Regular Grid	3,000	-6,000	0.2	0.0	-0.2
I07	Regular Grid	3,000	6,000	0.1	0.5	0.4
I08	Regular Grid	3,000	9,000	0.0	0.0	0.0
I09	Regular Grid	3,000	12,000	0.0	0.0	0.0
J01	Regular Grid	6,000	-12,000	0.0	0.0	0.0
J02	Regular Grid	6,000	-9,000	0.0	0.0	0.0
J03	Regular Grid	6,000	-6,000	0.2	0.0	-0.2
J07	Regular Grid	6,000	6,000	0.2	0.9	0.7
J08	Regular Grid	6,000	9,000	0.0	0.0	0.0
J09	Regular Grid	6,000	12,000	0.0	0.0	0.0
K01	Regular Grid	9,000	-12,000	0.0	0.0	0.0
K02	Regular Grid	9,000	-9,000	0.0	0.0	0.0
K03	Regular Grid	9,000	-6,000	0.2	0.0	-0.2
K05	Regular Grid	9,000	0	113.8	116.6	2.8
K07	Regular Grid	9,000	6,000	1.5	1.1	-0.4
K08	Regular Grid	9,000	9,000	0.0	0.0	0.0
K09	Regular Grid	9,000	12,000	0.0	0.0	0.0
L01	Regular Grid	12,000	-12,000	0.0	0.0	0.0
L02	Regular Grid	12,000	-9,000	0.0	0.0	0.0
L03	Regular Grid	12,000	-6,000	0.0	0.0	0.0
L04	Regular Grid	12,000	-3,000	2.2	1.3	-0.9
L05	Regular Grid	12,000	0	6.8	38.7	31.9
L06	Regular Grid	12,000	3,000	3.4	11.2	7.8

Table M-14 (2 of 12)

Location Points TA-75 Values and Comparison: Baseline 2003 and Project (2005) Conditions

Grid Cell ID	Use	X Dist. (feet)[1]	Y Dist. (feet)[1]	2003 TA-75	Project (2005) TA-75	Difference
L07	Regular Grid	12,000	6,000	3.5	2.0	-1.5
L08	Regular Grid	12,000	9,000	0.1	0.0	-0.1
L09	Regular Grid	12,000	12,000	0.0	0.0	0.0
M01	Regular Grid	15,000	-12,000	0.0	0.0	0.0
M02	Regular Grid	15,000	-9,000	0.0	0.0	0.0
M03	Regular Grid	15,000	-6,000	0.0	0.0	0.0
M04	Regular Grid	15,000	-3,000	0.6	0.8	0.2
M05	Regular Grid	15,000	0	22.4	45.4	23.0
M06	Regular Grid	15,000	3,000	1.3	5.8	4.5
M07	Regular Grid	15,000	6,000	13.0	14.7	1.7
M08	Regular Grid	15,000	9,000	0.1	0.0	-0.1
M09	Regular Grid	15,000	12,000	0.0	0.0	0.0
N01	Regular Grid	18,000	-12,000	0.0	0.0	0.0
N02	Regular Grid	18,000	-9,000	0.0	0.0	0.0
N03	Regular Grid	18,000	-6,000	0.0	0.0	0.0
N04	Regular Grid	18,000	-3,000	0.4	0.4	0.0
N05	Regular Grid	18,000	0	38.1	43.1	5.0
N06	Regular Grid	18,000	3,000	0.6	2.9	2.3
N07	Regular Grid	18,000	6,000	17.1	23.4	6.3
N08	Regular Grid	18,000	9,000	0.1	0.1	0.0
N09	Regular Grid	18,000	12,000	0.0	0.0	0.0
O01	Regular Grid	21,000	-12,000	0.0	0.0	0.0
O02	Regular Grid	21,000	-9,000	0.0	0.0	0.0
O03	Regular Grid	21,000	-6,000	0.0	0.0	0.0
O04	Regular Grid	21,000	-3,000	0.3	0.2	-0.1
O05	Regular Grid	21,000	0	39.5	36.6	-2.9
O06	Regular Grid	21,000	3,000	0.5	1.8	1.3
O07	Regular Grid	21,000	6,000	16.6	23.5	6.9
O08	Regular Grid	21,000	9,000	0.1	0.2	0.1
O09	Regular Grid	21,000	12,000	0.0	0.1	0.1
P01	Regular Grid	24,000	-12,000	0.0	0.0	0.0
P02	Regular Grid	24,000	-9,000	0.0	0.0	0.0
P03	Regular Grid	24,000	-6,000	0.0	0.0	0.0
P04	Regular Grid	24,000	-3,000	0.2	0.1	-0.1
P05	Regular Grid	24,000	0	33.8	23.2	-10.6
P06	Regular Grid	24,000	3,000	0.4	1.6	1.2
P07	Regular Grid	24,000	6,000	11.3	16.1	4.8
P08	Regular Grid	24,000	9,000	0.1	0.1	0.0
P09	Regular Grid	24,000	12,000	0.0	0.0	0.0
Q01	Regular Grid	27,000	-12,000	0.0	0.0	0.0
Q02	Regular Grid	27,000	-9,000	0.0	0.0	0.0
Q03	Regular Grid	27,000	-6,000	0.0	0.0	0.0
Q04	Regular Grid	27,000	-3,000	0.2	0.1	-0.1
Q05	Regular Grid	27,000	0	20.3	14.2	-6.1
Q06	Regular Grid	27,000	3,000	0.5	7.1	6.6
Q07	Regular Grid	27,000	6,000	4.2	7.5	3.3
Q08	Regular Grid	27,000	9,000	0.0	0.1	0.1
Q09	Regular Grid	27,000	12,000	0.0	0.0	0.0
R01	Regular Grid	30,000	-12,000	0.0	0.0	0.0
R02	Regular Grid	30,000	-9,000	0.0	0.0	0.0
R03	Regular Grid	30,000	-6,000	0.0	0.0	0.0
R04	Regular Grid	30,000	-3,000	0.1	0.0	-0.1
R05	Regular Grid	30,000	0	9.8	8.4	-1.4

Table M-14 (3 of 12)

Location Points TA-75 Values and Comparison: Baseline 2003 and Project (2005) Conditions

Grid Cell ID	Use	X Dist. (feet)[1]	Y Dist. (feet)[1]	2003 TA-75	Project (2005) TA-75	Difference
R06	Regular Grid	30,000	3,000	0.6	8.5	7.9
R07	Regular Grid	30,000	6,000	3.2	3.2	0.0
R08	Regular Grid	30,000	9,000	0.1	0.1	0.0
R09	Regular Grid	30,000	12,000	0.0	0.0	0.0
S01	Regular Grid	33,000	-12,000	0.0	0.0	0.0
S02	Regular Grid	33,000	-9,000	0.0	0.0	0.0
S03	Regular Grid	33,000	-6,000	0.0	0.0	0.0
S04	Regular Grid	33,000	-3,000	0.1	0.0	-0.1
S05	Regular Grid	33,000	0	4.3	4.6	0.3
S06	Regular Grid	33,000	3,000	1.9	9.2	7.3
S07	Regular Grid	33,000	6,000	2.2	1.5	-0.7
S08	Regular Grid	33,000	9,000	0.7	0.1	-0.6
S09	Regular Grid	33,000	12,000	0.0	0.1	0.1
T01	Regular Grid	36,000	-12,000	0.0	0.0	0.0
T02	Regular Grid	36,000	-9,000	0.0	0.0	0.0
T03	Regular Grid	36,000	-6,000	0.0	0.0	0.0
T04	Regular Grid	36,000	-3,000	0.1	0.0	-0.1
T05	Regular Grid	36,000	0	2.3	0.7	-1.6
T06	Regular Grid	36,000	3,000	2.4	9.6	7.2
T07	Regular Grid	36,000	6,000	1.4	1.1	-0.3
T08	Regular Grid	36,000	9,000	1.1	0.0	-1.1
T09	Regular Grid	36,000	12,000	0.0	0.1	0.1
U01	Regular Grid	39,000	-12,000	0.0	0.0	0.0
U02	Regular Grid	39,000	-9,000	0.0	0.0	0.0
U03	Regular Grid	39,000	-6,000	0.0	0.0	0.0
U04	Regular Grid	39,000	-3,000	0.0	0.0	0.0
U05	Regular Grid	39,000	0	1.1	0.2	-0.9
U06	Regular Grid	39,000	3,000	2.5	8.9	6.4
U07	Regular Grid	39,000	6,000	0.2	0.6	0.4
U08	Regular Grid	39,000	9,000	1.1	0.0	-1.1
U09	Regular Grid	39,000	12,000	0.0	0.1	0.1
V01	Regular Grid	42,000	-12,000	0.0	0.0	0.0
V02	Regular Grid	42,000	-9,000	0.0	0.0	0.0
V03	Regular Grid	42,000	-6,000	0.0	0.0	0.0
V04	Regular Grid	42,000	-3,000	0.0	0.0	0.0
V05	Regular Grid	42,000	0	0.1	0.1	0.0
V06	Regular Grid	42,000	3,000	2.5	7.5	5.0
V07	Regular Grid	42,000	6,000	0.1	0.1	0.0
V08	Regular Grid	42,000	9,000	1.1	0.1	-1.0
V09	Regular Grid	42,000	12,000	0.0	0.0	0.0
W01	Regular Grid	45,000	-12,000	0.0	0.0	0.0
W02	Regular Grid	45,000	-9,000	0.0	0.0	0.0
W03	Regular Grid	45,000	-6,000	0.0	0.0	0.0
W04	Regular Grid	45,000	-3,000	0.0	0.0	0.0
W05	Regular Grid	45,000	0	0.0	0.1	0.1
W06	Regular Grid	45,000	3,000	2.3	6.1	3.8
W07	Regular Grid	45,000	6,000	0.0	0.1	0.1
W08	Regular Grid	45,000	9,000	1.1	0.1	-1.0
W09	Regular Grid	45,000	12,000	0.0	0.0	0.0
X01	Regular Grid	48,000	-12,000	0.0	0.0	0.0
X02	Regular Grid	48,000	-9,000	0.0	0.0	0.0
X03	Regular Grid	48,000	-6,000	0.0	0.0	0.0
X04	Regular Grid	48,000	-3,000	0.0	0.0	0.0

Table M-14 (4 of 12)

Location Points TA-75 Values and Comparison: Baseline 2003 and Project (2005) Conditions

Grid Cell ID	Use	X Dist. (feet)[1]	Y Dist. (feet)[1]	2003 TA-75	Project (2005) TA-75	Difference
X05	Regular Grid	48,000	0	0.0	0.0	0.0
X06	Regular Grid	48,000	3,000	1.9	3.4	1.5
X07	Regular Grid	48,000	6,000	0.0	0.6	0.6
X08	Regular Grid	48,000	9,000	0.6	0.1	-0.5
X09	Regular Grid	48,000	12,000	0.0	0.0	0.0
Y01	Regular Grid	51,000	-12,000	0.0	0.0	0.0
Y02	Regular Grid	51,000	-9,000	0.0	0.0	0.0
Y03	Regular Grid	51,000	-6,000	0.0	0.0	0.0
Y04	Regular Grid	51,000	-3,000	0.0	0.0	0.0
Y05	Regular Grid	51,000	0	0.0	0.0	0.0
Y06	Regular Grid	51,000	3,000	1.4	0.8	-0.6
Y07	Regular Grid	51,000	6,000	0.1	0.1	0.0
Y08	Regular Grid	51,000	9,000	0.1	0.2	0.1
Y09	Regular Grid	51,000	12,000	0.0	0.0	0.0
Z01	Regular Grid	54,000	-12,000	0.0	0.0	0.0
Z02	Regular Grid	54,000	-9,000	0.0	0.0	0.0
Z03	Regular Grid	54,000	-6,000	0.0	0.0	0.0
Z04	Regular Grid	54,000	-3,000	0.0	0.0	0.0
Z05	Regular Grid	54,000	0	0.0	0.0	0.0
Z06	Regular Grid	54,000	3,000	0.2	0.2	0.0
Z07	Regular Grid	54,000	6,000	0.1	0.3	0.2
Z08	Regular Grid	54,000	9,000	0.0	0.0	0.0
Z09	Regular Grid	54,000	12,000	0.0	0.0	0.0
CH006	Church	18,362	851	9.4	35.8	26.4
CH008	Church	-1,056	-6,191	1.7	0.7	-1.0
CH011	Church	33,776	-3,732	0.1	0.0	-0.1
CH012	Church	34,672	611	5.1	6.4	1.3
CH019	Church	16,609	-6,394	0.0	0.0	0.0
CH020	Church	16,609	-5,892	0.0	0.0	0.0
CH022	Church	18,259	9,542	0.1	0.1	0.0
CH025	Church	16,984	-6,155	0.0	0.0	0.0
CH026	Church	772	5,897	0.2	1.7	1.5
CH030	Church	37,397	-3,562	0.0	0.0	0.0
CH031	Church	29,694	4,531	0.4	1.2	0.8
CH032	Church	34,999	-2,528	0.1	0.0	-0.1
CH037	Church	12,173	2,634	0.7	3.9	3.2
CH044	Church	29,459	441	15.6	11.8	-3.8
CH047	Church	36,169	6,797	2.1	1.1	-1.0
CH048	Church	36,695	2,519	3.3	10.6	7.3
CH049	Church	29,734	8,749	0.8	0.1	-0.7
CH052	Church	28,386	11,458	0.0	0.1	0.1
CH053	Church	32,138	10,827	0.0	0.1	0.1
CH056	Church	29,496	10,032	0.0	0.1	0.1
CH058	Church	37,445	-3,804	0.0	0.0	0.0
CH060	Church	37,453	1,503	5.3	7.6	2.3
CH062	Church	18,436	-9,362	0.0	0.0	0.0
CH067	Church	24,220	9,999	0.1	0.1	0.0
CH069	Church	24,032	-1,953	1.0	0.4	-0.6
CH072	Church	36,144	10,802	0.0	0.1	0.1
CH075	Church	36,127	-1,223	0.1	0.1	0.0
CH076	Church	36,351	8,763	1.5	0.1	-1.4
CH078	Church	30,942	225	8.5	8.1	-0.4
CH082	Church	15,556	4,179	14.6	28.0	13.4

Table M-14 (5 of 12)

Location Points TA-75 Values and Comparison: Baseline 2003 and Project (2005) Conditions

Grid Cell ID	Use	X Dist. (feet)[1]	Y Dist. (feet)[1]	2003 TA-75	Project (2005) TA-75	Difference
CH083	Church	-5,007	6,170	0.0	0.1	0.1
CH087	Church	15,502	10,235	0.1	0.0	-0.1
CH094	Church	37,402	4,700	0.1	0.2	0.1
CH096	Church	33,100	4,191	0.2	1.2	1.0
CH097	Church	922	-6,751	0.1	0.0	-0.1
CH098	Church	3,426	10,997	0.0	0.0	0.0
CH099	Church	15,214	-4,708	0.1	0.0	-0.1
CH100	Church	16,819	5,275	28.0	49.8	21.8
CH101	Church	3,028	9,100	0.0	0.0	0.0
CH102	Church	29,435	-3,393	0.1	0.0	-0.1
CH103	Church	33,060	9,231	0.1	0.1	0.0
CH107	Church	12,493	-6,171	0.0	0.0	0.0
CH108	Church	12,557	-6,505	0.0	0.0	0.0
CH109	Church	-7,997	6,637	0.0	0.0	0.0
CH116	Church	26,573	11,459	0.0	0.0	0.0
CH118	Church	34,682	5,288	0.3	0.7	0.4
CH119	Church	-3,523	-8,901	0.0	0.0	0.0
CH120	Church	-3,133	-5,122	20.5	14.5	-6.0
CH121	Church	-1,025	-8,528	0.0	0.0	0.0
CH122	Church	-2,777	-7,154	1.0	0.2	-0.8
CH129	Church	20,742	-3,140	0.2	0.2	0.0
CH132	Church	15,736	5,775	21.1	34.9	13.8
CH133	Church	27,851	1,067	18.2	22.2	4.0
CH135	Church	33,627	6,388	2.3	1.5	-0.8
CH137	Church	34,656	-3,968	0.1	0.0	-0.1
CH139	Church	36,337	10,957	0.0	0.1	0.1
CH140	Church	34,661	-513	1.5	0.3	-1.2
CH144	Church	30,061	-1,582	0.3	0.2	-0.1
CH145	Church	37,669	-1,182	0.1	0.1	0.0
CH146	Church	13,494	8,321	0.1	0.1	0.0
CH150	Church	16,056	6,214	11.2	11.9	0.7
CH151	Church	16,044	5,617	25.3	42.7	17.4
CH156	Church	34,981	1,468	7.8	10.2	2.4
CH157	Church	4,879	6,462	0.1	0.4	0.3
CH158	Church	24,437	2,639	0.6	9.3	8.7
CH160	Church	12,198	7,451	0.2	0.3	0.1
CH162	Church	18,585	-9,335	0.0	0.0	0.0
CH163	Church	36,352	7,585	2.3	1.0	-1.3
CH164	Church	17,219	5,679	23.8	40.7	16.9
CH165	Church	31,191	-1,517	0.2	0.2	0.0
CH166	Church	17,839	7,360	1.5	0.5	-1.0
CH168	Church	2,715	9,777	0.0	0.0	0.0
CH172	Church	16,888	11,345	0.0	0.0	0.0
CH173	Church	20,347	-4,191	0.1	0.0	-0.1
CH174	Church	37,440	7,189	2.0	1.1	-0.9
CH175	Church	-4,960	6,402	0.0	0.0	0.0
CH177	Church	29,502	11,020	0.0	0.1	0.1
CH180	Church	37,667	5,420	0.1	0.2	0.1
CH182	Church	37,462	-1,152	0.1	0.1	0.0
CH183	Church	35,808	6,815	2.2	1.2	-1.0
CH185	Church	32,290	4,655	0.3	0.4	0.1
CH186	Church	37,662	-2,735	0.0	0.0	0.0
CH188	Church	29,706	9,678	0.0	0.1	0.1

Table M-14 (6 of 12)

Location Points TA-75 Values and Comparison: Baseline 2003 and Project (2005) Conditions

Grid Cell ID	Use	X Dist. (feet)[1]	Y Dist. (feet)[1]	2003 TA-75	Project (2005) TA-75	Difference
CH189	Church	37,456	8,316	1.9	0.4	-1.5
CH190	Church	15,769	-1,744	26.2	6.1	-20.1
CH191	Church	37,440	3,115	2.3	8.9	6.6
CH193	Church	16,098	3,516	3.2	7.8	4.6
CH197	Church	36,141	-622	0.2	0.1	-0.1
CH199	Church	32,312	-2,517	0.1	0.0	-0.1
CH201	Church	30,178	11,450	0.0	0.1	0.1
CH205	Church	36,034	6,388	1.7	1.1	-0.6
CH206	Church	32,298	-1,373	0.2	0.2	0.0
CH208	Church	34,964	-345	1.8	0.3	-1.5
CH211	Church	36,174	2,481	3.4	11.2	7.8
CH213	Church	18,281	1,520	1.3	14.3	13.0
CH216	Church	32,313	1,911	7.7	15.1	7.4
CH218	Church	15,869	-951	52.5	31.4	-21.1
CH219	Church	22,848	11,338	0.1	0.0	-0.1
CH221	Church	23,975	6,427	9.9	10.7	0.8
CH222	Church	15,086	-9,405	0.0	0.0	0.0
CH225	Church	13,793	-7,039	0.0	0.0	0.0
CH230	Church	32,151	4,322	0.2	0.4	0.2
CH231	Church	36,143	9,975	0.0	0.0	0.0
CH234	Church	36,895	6,381	1.5	1.0	-0.5
CH235	Church	32,127	2,022	6.9	15.2	8.3
CH239	Church	29,501	6,867	3.8	3.4	-0.4
CH240	Church	37,448	-2,742	0.0	0.0	0.0
CH241	Church	24,439	3,466	0.4	1.6	1.2
CH244	Church	37,681	8,609	1.7	0.2	-1.5
CH247	Church	34,958	2,144	5.8	12.5	6.7
CH250	Church	28,704	-4,168	0.1	0.0	-0.1
CH251	Church	13,890	6,115	7.9	6.6	-1.3
CH254	Church	17,430	10,595	0.1	0.0	-0.1
CH255	Church	12,359	3,858	19.7	37.5	17.8
CH256	Church	16,578	3,534	3.0	7.0	4.0
CH257	Church	15,548	-8,178	0.0	0.0	0.0
CH259	Church	14,539	12,155	0.0	0.0	0.0
CH260	Church	23,953	-3,330	0.1	0.1	0.0
CH261	Church	19,150	-3,057	0.3	0.3	0.0
CH262	Church	-3,362	-7,566	0.8	0.0	-0.8
CH266	Church	16,872	3,711	3.7	8.5	4.8
CH267	Church	35,011	8,122	2.2	0.7	-1.5
CH270	Church	31,466	6,365	2.8	2.2	-0.6
CH273	Church	31,581	550	9.7	9.4	-0.3
CH275	Church	34,643	11,454	0.0	0.1	0.1
CH276	Church	29,696	3,909	0.3	0.6	0.3
CH281	Church	33,441	3,079	1.9	9.4	7.5
CH282	Church	17,872	-2,898	0.4	0.4	0.0
CH284	Church	8,877	10,121	0.0	0.0	0.0
CH285	Church	6,222	7,425	0.1	0.1	0.0
CH289	Church	15,218	-1,808	25.0	5.9	-19.1
CH290	Church	16,538	-2,345	2.9	0.9	-2.0
CH294	Church	32,328	7,233	3.0	1.6	-1.4
CH300	Church	33,630	2,854	2.7	10.6	7.9
CH303	Church	29,690	5,046	1.7	1.5	-0.2
CH304	Church	6,157	8,380	0.0	0.0	0.0

Table M-14 (7 of 12)

Location Points TA-75 Values and Comparison: Baseline 2003 and Project (2005) Conditions

Grid Cell ID	Use	X Dist. (feet)[1]	Y Dist. (feet)[1]	2003 TA-75	Project (2005) TA-75	Difference
CH308	Church	26,723	11,459	0.0	0.0	0.0
CH311	Church	29,706	9,728	0.0	0.1	0.1
CH313	Church	34,942	2,884	2.8	10.3	7.5
CH316	Church	33,455	6,366	2.3	1.5	-0.8
CH321	Church	26,844	6,592	4.5	6.3	1.8
CH322	Church	24,378	5,651	5.5	10.1	4.6
CH323	Church	32,144	3,499	0.5	6.4	5.9
CH329	Church	33,816	6,120	2.0	1.4	-0.6
CH332	Church	29,987	1,050	15.8	16.1	0.3
CH334	Church	-3,362	-8,211	0.2	0.0	-0.2
CH335	Church	35,032	9,135	0.8	0.0	-0.8
CH338	Church	34,658	-3,718	0.1	0.0	-0.1
CH340	Church	37,438	6,936	1.9	1.1	-0.8
CH343	Church	15,571	5,631	24.8	41.8	17.0
CH346	Church	34,683	2,176	5.6	12.8	7.2
CH350	Church	36,465	11,455	0.0	0.1	0.1
CH351	Church	37,457	8,790	1.5	0.1	-1.4
CH352	Church	36,665	11,456	0.0	0.1	0.1
CH354	Church	35,029	10,381	0.0	0.1	0.1
CH359	Church	34,660	-759	0.3	0.2	-0.1
CH361	Church	-297	10,928	0.0	0.0	0.0
CH364	Church	-3,000	-5,050	21.8	15.5	-6.3
CH366	Church	34,663	-2,477	0.1	0.0	-0.1
CH368	Church	29,105	-1,896	0.2	0.2	0.0
CH375	Church	17,910	-9,299	0.0	0.0	0.0
CH378	Church	32,154	5,163	0.8	1.1	0.3
CH383	Church	23,176	6,146	12.3	17.2	4.9
CH388	Church	29,674	7,848	2.5	0.7	-1.8
CH390	Church	32,137	10,569	0.0	0.1	0.1
CH392	Church	33,524	-107	2.8	1.6	-1.2
CH393	Church	29,454	197	12.3	9.8	-2.5
CH395	Church	20	7,468	0.0	0.0	0.0
CH396	Church	-3,363	-7,999	0.3	0.0	-0.3
CH397	Church	-3,153	6,521	0.0	0.0	0.0
CH402	Church	33,574	-393	2.0	0.3	-1.7
CH405	Church	26,436	-4,141	0.1	0.0	-0.1
CH408	Church	16,609	-6,117	0.0	0.0	0.0
CH411	Church	-5,649	6,168	0.0	0.1	0.1
CH413	Church	955	5,447	1.1	5.2	4.1
CH415	Church	-574	-8,529	0.0	0.0	0.0
CH416	Church	-3,520	-6,950	1.6	0.6	-1.0
CH423	Church	34,438	6,123	1.8	1.2	-0.6
CH427	Church	27,099	2,637	1.6	10.6	9.0
CH430	Church	29,435	-3,530	0.1	0.0	-0.1
CH431	Church	26,113	11,458	0.0	0.0	0.0
CH432	Church	32,135	10,287	0.0	0.1	0.1
CH433	Church	34,981	4,271	0.2	1.4	1.2
CH434	Church	29,486	4,620	0.5	1.3	0.8
CH436	Church	36,665	6,526	1.7	1.0	-0.7
CH438	Church	16,883	7,283	1.4	0.5	-0.9
CH440	Church	21,860	-3,132	0.2	0.1	-0.1
CH453	Church	30,531	6,362	3.2	2.8	-0.4
CH457	Church	37,682	5,673	0.2	0.2	0.0

Table M-14 (8 of 12)

Location Points TA-75 Values and Comparison: Baseline 2003 and Project (2005) Conditions

Grid Cell ID	Use	X Dist. (feet)[1]	Y Dist. (feet)[1]	2003 TA-75	Project (2005) TA-75	Difference
CH459	Church	34,981	4,311	0.2	1.3	1.1
CH461	Church	2,474	-5,106	1.4	0.5	-0.9
CH462	Church	37,658	2,565	3.2	9.9	6.7
CH463	Church	28,157	7,476	3.2	1.3	-1.9
CH465	Church	29,437	-2,633	0.1	0.1	0.0
CH469	Church	36,307	9,187	0.9	0.0	-0.9
CH470	Church	15,830	5,944	17.2	23.5	6.3
CH471	Church	34,666	3,437	1.2	7.6	6.4
CH472	Church	34,478	360	3.5	4.5	1.0
CH479	Church	29,687	3,172	0.5	7.8	7.3
CH480	Church	36,132	8,126	2.2	0.7	-1.5
CH481	Church	6,983	6,070	0.3	1.0	0.7
CH482	Church	35,540	2,955	2.6	9.9	7.3
CH485	Church	37,466	9,880	0.0	0.0	0.0
CH493	Church	36,143	9,513	0.1	0.0	-0.1
CH497	Church	12,760	12,329	0.0	0.0	0.0
CH500	Church	29,680	2,945	1.7	9.4	7.7
CH503	Church	-2,777	-7,028	1.2	0.3	-0.9
CH507	Church	38,086	-1,785	0.1	0.0	-0.1
CH509	Church	34,671	8,932	1.2	0.0	-1.2
CH513	Church	17,184	8,722	0.1	0.2	0.1
CH518	Church	5,989	6,176	0.2	0.8	0.6
CH519	Church	-4,691	6,400	0.0	0.0	0.0
CH520	Church	3,327	10,191	0.0	0.0	0.0
CH521	Church	427	8,681	0.0	0.0	0.0
CH522	Church	13,607	1,267	1.0	6.3	5.3
CH524	Church	34,683	4,171	0.2	1.7	1.5
CH529	Church	37,462	-1,270	0.1	0.1	0.0
CH532	Church	23,813	9,141	0.1	0.1	0.0
HOS05	Hospital	15,713	-5,495	0.0	0.0	0.0
HOS07	Hospital	15,334	-5,123	0.0	0.0	0.0
HOS09	Hospital	23,095	8,420	0.2	0.2	0.0
HOS10	Hospital	18,684	3,896	3.5	6.8	3.3
HOS11	Hospital	18,500	8,884	0.1	0.2	0.1
HOS12	Hospital	13,791	-5,987	0.0	0.0	0.0
HOS13	Hospital	29,985	5,901	2.8	2.7	-0.1
HOS15	Hospital	17,190	1,285	1.6	16.0	14.4
HOS16	Hospital	13,553	7,081	0.3	0.5	0.2
HOS18	Hospital	13,797	-3,917	0.2	0.2	0.0
HOS19	Hospital	17,676	2,790	0.6	2.2	1.6
LIB01	Library	15,816	-9,101	0.0	0.0	0.0
LIB02	Library	15,450	7,185	0.7	0.5	-0.2
LIB03	Library	24,178	-3,305	0.1	0.1	0.0
LIB04	Library	23,842	6,513	8.7	9.0	0.3
LIB05	Library	3,672	4,468	21.3	35.3	14.0
LIB06	Library	32,350	-1,151	0.3	0.2	-0.1
LIB07	Library	16,622	-1,444	34.5	9.0	-25.5
LIB10	Library	37,424	2,049	5.0	9.5	4.5
LIB11	Library	-3,147	-6,769	1.7	0.8	-0.9
LIB13	Library	-3,179	6,210	0.0	0.0	0.0
NH003	Hospital, Convalescent	29,488	7,434	3.3	1.5	-1.8
NH004	Hospital, Convalescent	34,331	5,967	1.7	1.1	-0.6

Table M-14 (9 of 12)

Location Points TA-75 Values and Comparison: Baseline 2003 and Project (2005) Conditions

Grid Cell ID	Use	X Dist. (feet)[1]	Y Dist. (feet)[1]	2003 TA-75	Project (2005) TA-75	Difference
NH007	Hospital, Convalescent	17,108	11,062	0.0	0.0	0.0
NH008	Hospital, Convalescent	20,727	-198	40.7	30.2	-10.5
NH009	Hospital, Convalescent	13,755	-5,511	0.0	0.0	0.0
NH010	Hospital, Convalescent	34,543	11,454	0.0	0.1	0.1
NH012	Hospital, Convalescent	23,851	6,390	10.3	12.0	1.7
NH013	Hospital, Convalescent	16,922	7,743	0.2	0.4	0.2
NH015	Hospital, Convalescent	34,661	-443	1.7	0.3	-1.4
NH017	Hospital, Convalescent	34,326	6,502	2.3	1.4	-0.9
NH018	Hospital, Convalescent	17,706	7,119	2.2	0.7	-1.5
NH019	Hospital, Convalescent	14,640	6,647	2.5	0.9	-1.6
NH022	Hospital, Convalescent	35,884	6,388	1.8	1.1	-0.7
NH023	Hospital, Convalescent	13,941	-7,834	0.0	0.0	0.0
NH025	Hospital, Convalescent	15,569	12,004	0.0	0.0	0.0
NH026	Hospital, Convalescent	26,823	2,036	4.1	17.0	12.9
NH027	Hospital, Convalescent	18,773	-9,296	0.0	0.0	0.0
NH028	Hospital, Convalescent	14,396	6,645	2.4	0.9	-1.5
NH033	Hospital, Convalescent	12,509	8,161	0.1	0.1	0.0
NH037	Hospital, Convalescent	34,990	-3,870	0.1	0.0	-0.1
NH038	Hospital, Convalescent	17,775	10,041	0.1	0.1	0.0
NH040	Hospital, Convalescent	22,738	6,430	11.1	13.5	2.4
NH041	Hospital, Convalescent	37,456	8,531	1.8	0.2	-1.6
NH042	Hospital, Convalescent	34,661	7,463	2.5	1.3	-1.2
NH043	Hospital, Convalescent	-7,595	6,080	0.2	0.1	-0.1
NH044	Hospital, Convalescent	18,202	2,864	0.6	2.1	1.5
NH045	Hospital, Convalescent	15,756	-5,107	0.0	0.0	0.0
PBS006	Public School	27,281	10,743	0.0	0.1	0.1
PBS009	Public School	34,094	2,313	4.5	13.1	8.6
PBS011	Public School	-2,515	-6,204	4.0	1.5	-2.5
PBS017	Public School	14,818	3,297	2.8	7.7	4.9
PBS018	Public School	35,904	3,121	2.1	9.2	7.1
PBS019	Public School	12,212	-1,924	36.7	7.9	-28.8
PBS021	Public School	911	-6,459	0.4	0.0	-0.4
PBS022	Public School	13,419	10,800	0.0	0.0	0.0
PBS023	Public School	15,909	-7,797	0.0	0.0	0.0
PBS024	Public School	26,296	-2,314	0.2	0.2	0.0
PBS026	Public School	23,650	-1,034	10.8	5.5	-5.3
PBS027	Public School	172	11,002	0.0	0.0	0.0
PBS028	Public School	15,282	7,661	0.2	0.3	0.1
PBS029	Public School	25,282	8,750	0.1	0.2	0.1
PBS031	Public School	-1,003	-8,864	0.0	0.0	0.0
PBS032	Public School	-3,780	-6,609	2.5	1.2	-1.3
PBS033	Public School	14,499	-7,413	0.0	0.0	0.0
PBS035	Public School	12,046	-585	40.2	48.2	8.0
PBS036	Public School	37,216	-3,113	0.0	0.0	0.0
PBS040	Public School	31,524	-2,029	0.2	0.1	-0.1
PBS041	Public School	32,406	-2,584	0.1	0.0	-0.1
PBS042	Public School	12,992	-8,938	0.0	0.0	0.0
PBS047	Public School	13,295	5,451	26.6	43.8	17.2
PBS048	Public School	13,951	6,710	2.0	0.8	-1.2
PBS049	Public School	-1,068	-4,601	28.6	18.1	-10.5
PBS050	Public School	14,856	6,115	11.4	12.1	0.7
PBS054	Public School	16,704	9,736	0.1	0.0	-0.1
PBS055	Public School	14,713	3	25.0	46.0	21.0

Table M-14 (10 of 12)

Location Points TA-75 Values and Comparison: Baseline 2003 and Project (2005) Conditions

Grid Cell ID	Use	X Dist. (feet)[1]	Y Dist. (feet)[1]	2003 TA-75	Project (2005) TA-75	Difference
PBS058	Public School	10,708	-7,313	0.0	0.0	0.0
PBS059	Public School	18,679	5,302	22.7	40.9	18.2
PBS061	Public School	419	7,093	0.0	0.0	0.0
PBS062	Public School	968	5,128	4.6	13.7	9.1
PBS086	Public School	38,040	1,964	4.7	8.9	4.2
PBS090	Public School	30,414	5,411	2.0	1.7	-0.3
PBS091	Public School	11,903	-2,672	3.4	1.5	-1.9
PBS098	Public School	35,517	9,615	0.1	0.0	-0.1
PBS099	Public School	-4,391	5,512	0.3	0.2	-0.1
PBS100	Public School	36,630	5,989	0.8	0.9	0.1
PBS101	Public School	29,058	2,028	5.8	17.3	11.5
PBS102	Public School	17,390	-2,628	0.6	0.7	0.1
PBS105	Public School	11,840	4,627	39.5	66.2	26.7
PBS106	Public School	808	9,178	0.0	0.0	0.0
PBS107	Public School	-8,294	5,322	1.8	1.7	-0.1
PBS111	Public School	32,576	10,502	0.0	0.1	0.1
PBS113	Public School	34,981	4,193	0.2	1.7	1.5
PBS117	Public School	24,929	3,265	0.4	1.2	0.8
PBS120	Public School	-6,877	5,485	1.4	0.9	-0.5
PBS121	Public School	-6,871	5,484	1.4	0.9	-0.5
PBS122	Public School	5,515	8,945	0.0	0.0	0.0
PBS123	Public School	18,043	-527	49.3	34.1	-15.2
PBS125	Public School	33,837	-1,843	0.1	0.1	0.0
PBS127	Public School	21,457	-3,062	0.2	0.2	0.0
PBS128	Public School	18,588	-5,939	0.0	0.0	0.0
PBS140	Public School	22,487	-1,032	16.1	7.4	-8.7
PBS201	Public School	23,648	-1,395	5.8	0.6	-5.2
PRK01	Park	11,566	6,133	2.9	1.3	-1.6
PRK02	Park	5,414	4,921	10.7	12.6	1.9
PRK03	Park	21,160	-3,063	0.2	0.2	0.0
PRK05	Park	9,350	-9,074	0.0	0.0	0.0
PRK07	Park	-13,479	6,711	0.0	0.0	0.0
PRK10	Park	-5,023	-4,415	44.3	39.9	-4.4
PRK11	Park	-1,802	-8,136	0.0	0.0	0.0
PRK13	Park	-225	-8,037	0.0	0.0	0.0
PRK15	Park	1,472	-5,400	2.4	0.8	-1.6
PRK16	Park	1,719	-7,830	0.0	0.0	0.0
PRK18	Park	13,866	-7,408	0.0	0.0	0.0
PRK201	Park	-2,921	5,657	0.0	0.0	0.0
PRK32	Park	25,609	7,591	2.6	0.9	-1.7
PRK41	Park	15,768	6,307	5.8	6.0	0.2
PRK42	Park	13,359	1,894	0.6	2.1	1.5
PRK43	Park	23,171	4,140	2.2	3.1	0.9
PRK45	Park	28,752	5,597	2.8	3.1	0.3
PRK46	Park	36,620	5,021	0.1	0.2	0.1
PRK52	Park	14,558	-1,937	20.7	4.3	-16.4
PRK56	Park	28,407	1,919	6.8	18.9	12.1
PRK59	Park	18,760	7,140	2.8	0.8	-2.0
PRK60	Park	13,470	9,437	0.1	0.0	-0.1
PRK62	Park	2,383	-6,026	0.2	0.0	-0.2
PRK65	Park	-6,967	-8,394	0.7	0.0	-0.7
PRK67	Park	-10,639	716	60.0	90.0	30.0
PRK68	Park	-761	5,208	0.6	4.2	3.6

Table M-14 (11 of 12)

Location Points TA-75 Values and Comparison: Baseline 2003 and Project (2005) Conditions

Grid Cell ID	Use	X Dist. (feet)[1]	Y Dist. (feet)[1]	2003 TA-75	Project (2005) TA-75	Difference
PRK70	Park	34,964	-416	1.6	0.3	-1.3
PRK71	Park	-4,883	-7,930	0.8	0.0	-0.8
PRK72	Park	-3,078	-6,614	2.0	0.9	-1.1
PVS001	Private School	37,733	11,384	0.0	0.1	0.1
PVS002	Private School	37,336	-3,455	0.0	0.0	0.0
PVS003	Private School	34,483	5,967	1.6	1.1	-0.5
PVS004	Private School	27,097	2,468	2.7	12.4	9.7
PVS007	Private School	-7,778	4,626	4.4	9.2	4.8
PVS011	Private School	833	5,679	0.4	3.0	2.6
PVS012	Private School	771	5,989	0.2	1.1	0.9
PVS017	Private School	34,119	6,123	1.9	1.3	-0.6
PVS025	Private School	12,977	12,319	0.0	0.0	0.0
PVS026	Private School	36,140	6,964	2.2	1.1	-1.1
PVS028	Private School	24,379	5,761	6.4	10.0	3.6
PVS029	Private School	23,982	7,178	3.7	2.4	-1.3
PVS030	Private School	28,850	11,455	0.0	0.1	0.1
PVS031	Private School	-12,447	6,370	0.1	0.1	0.0
PVS033	Private School	34,984	5,635	0.6	0.9	0.3
PVS034	Private School	29,461	-1,469	0.4	0.3	-0.1
PVS035	Private School	34,140	9,211	0.3	0.1	-0.2
PVS036	Private School	25,423	11,457	0.0	0.0	0.0
PVS037	Private School	29,435	-516	4.8	4.2	-0.6
PVS044	Private School	13,506	6,729	1.7	0.8	-0.9
PVS046	Private School	29,009	-4,204	0.1	0.0	-0.1
PVS048	Private School	-501	-8,326	0.0	0.0	0.0
PVS049	Private School	34,967	2,020	6.6	12.4	5.8
PVS051	Private School	16,298	5,790	21.3	35.6	14.3
PVS054	Private School	32,159	8,982	0.8	0.1	-0.7
PVS055	Private School	18,415	5,475	23.6	41.9	18.3
PVS056	Private School	34,709	4,608	0.2	0.2	0.0
PVS060	Private School	6,258	8,224	0.0	0.0	0.0
PVS062	Private School	19,294	-197	44.0	36.7	-7.3
PVS064	Private School	13,310	7,076	0.3	0.5	0.2
PVS065	Private School	33,672	6,369	2.3	1.5	-0.8
PVS066	Private School	14,716	11,128	0.0	0.0	0.0
PVS067	Private School	32,753	-466	2.3	0.4	-1.9
PVS069	Private School	13,205	6,854	0.8	0.6	-0.2
PVS070	Private School	15,369	3,722	5.1	12.5	7.4
PVS071	Private School	2,864	13,792	0.0	0.0	0.0
PVS073	Private School	24,503	5,600	5.3	9.8	4.5
PVS074	Private School	24,091	6,749	5.0	6.2	1.2
PVS077	Private School	12,602	-226	22.3	47.5	25.2
PVS081	Private School	29,676	2,047	5.9	16.7	10.8
PVS082	Private School	32,177	6,695	2.9	2.0	-0.9
PVS083	Private School	17,478	5,970	18.6	26.6	8.0
PVS084	Private School	16,261	-881	52.3	31.8	-20.5
PVS085	Private School	32,138	10,688	0.0	0.1	0.1
PVS086	Private School	36,351	8,881	1.4	0.0	-1.4
PVS087	Private School	32,298	-1,596	0.2	0.2	0.0
PVS091	Private School	27,180	2,649	1.6	10.5	8.9
PVS092	Private School	18,568	9,623	0.1	0.1	0.0
PVS093	Private School	-5,793	5,899	0.2	0.1	-0.1
PVS099	Private School	22,860	11,024	0.1	0.1	0.0

Table M-14 (12 of 12)

Location Points TA-75 Values and Comparison: Baseline 2003 and Project (2005) Conditions

Grid Cell ID	Use	X Dist. (feet)[1]	Y Dist. (feet)[1]	2003 TA-75	Project (2005) TA-75	Difference
PVS101	Private School	29,432	-911	2.7	0.4	-2.3
PVS103	Private School	3,278	9,736	0.0	0.0	0.0
PVS104	Private School	9,240	3,525	22.1	44.3	22.2
PVS105	Private School	14,468	-9,493	0.0	0.0	0.0
PVS106	Private School	26,663	6,419	4.7	6.9	2.2
PVS107	Private School	3,658	5,088	2.1	2.4	0.3
PVS108	Private School	23,359	6,499	9.4	10.3	0.9
PVS109	Private School	18,639	3,216	0.7	3.1	2.4
PVS110	Private School	-573	-8,780	0.0	0.0	0.0
PVS111	Private School	16,874	-6,105	0.0	0.0	0.0
PBS114	Private School	9,738	3,976	36.6	65.9	29.3
PBS116	Private School	8,575	4,739	38.5	57.4	18.9
PVS138	Private School	-2,901	10,004	0.0	0.0	0.0

Note: TA-75 = Total number of minutes per day that exceed 75 decibels at indicated location.

1/ The sites are located by X and Y coordinates in feet. Each X and Y value is a distance measured in feet from the airport reference point on the airport (near the Tom Bradley International Terminal. This type of coordinate system is called the Cartesian or rectangular coordinate system. This system is commonly defined by two axes at right angles (two lines that form a 90-degree angle to each other and are perpendicular) forming a plane (xy plane). The horizontal (moving left or right along the plane) axis is called the x-axis. The opposite is called the vertical (moving up or down along the plane) axis, which is called the y-axis. The point of intersection (where both the x and y axes meet) is called the origin point (depicted as 0,0 point). A unit of length is used to mark along the x and y axes, which forms a grid. To specify a particular point on a two dimensional coordinate system, you indicate the x unit first, followed by the y unit in the form (x,y), an ordered pair. The intersection of the two x-y axes creates four quadrants-northeast, southeast, southwest and northwest. In the northeast quadrant, values are (x,y), and southeast:(-x,y), southwest:(-x,-y) and northwest:(x,-y).

Source: Ricondo & Associates, Inc., 2004; Based on Landrum and Brown, 2002 Grids – Final LAX Master Plan EIS/EIR
Prepared by: Ricondo & Associates, Inc.

Table M-15 (1of 12)

Location Points TA-85 Values and Comparison: Baseline 2003 and Project (2005) Conditions

Grid Cell ID	Use	X Dist. (feet)[1]	Y Dist. (feet)[1]	2003 TA-85	Project (2005) TA-85	Difference
C08	Regular Grid	-15,000	9,000	0.0	0.0	0.0
C09	Regular Grid	-15,000	12,000	0.0	0.0	0.0
D06	Regular Grid	-12,000	3,000	0.4	1.7	1.3
D07	Regular Grid	-12,000	6,000	0.0	0.0	0.0
D08	Regular Grid	-12,000	9,000	0.0	0.0	0.0
D09	Regular Grid	-12,000	12,000	0.0	0.0	0.0
E07	Regular Grid	-9,000	6,000	0.0	0.0	0.0
E08	Regular Grid	-9,000	9,000	0.0	0.0	0.0
E09	Regular Grid	-9,000	12,000	0.0	0.0	0.0
F02	Regular Grid	-6,000	-9,000	0.0	0.0	0.0
F03	Regular Grid	-6,000	-6,000	0.4	0.0	-0.4
F07	Regular Grid	-6,000	6,000	0.0	0.0	0.0
F08	Regular Grid	-6,000	9,000	0.0	0.0	0.0
F09	Regular Grid	-6,000	12,000	0.0	0.0	0.0
G01	Regular Grid	-3,000	-12,000	0.0	0.0	0.0
G02	Regular Grid	-3,000	-9,000	0.0	0.0	0.0
G03	Regular Grid	-3,000	-6,000	0.1	0.0	-0.1
G07	Regular Grid	-3,000	6,000	0.0	0.0	0.0
G08	Regular Grid	-3,000	9,000	0.0	0.0	0.0
G09	Regular Grid	-3,000	12,000	0.0	0.0	0.0
H01	Regular Grid	0	-12,000	0.0	0.0	0.0
H02	Regular Grid	0	-9,000	0.0	0.0	0.0
H03	Regular Grid	0	-6,000	0.0	0.0	0.0
H07	Regular Grid	0	6,000	0.0	0.0	0.0
H08	Regular Grid	0	9,000	0.0	0.0	0.0
H09	Regular Grid	0	12,000	0.0	0.0	0.0
I01	Regular Grid	3,000	-12,000	0.0	0.0	0.0
I02	Regular Grid	3,000	-9,000	0.0	0.0	0.0
I03	Regular Grid	3,000	-6,000	0.0	0.0	0.0
I07	Regular Grid	3,000	6,000	0.0	0.0	0.0
I08	Regular Grid	3,000	9,000	0.0	0.0	0.0
I09	Regular Grid	3,000	12,000	0.0	0.0	0.0
J01	Regular Grid	6,000	-12,000	0.0	0.0	0.0
J02	Regular Grid	6,000	-9,000	0.0	0.0	0.0
J03	Regular Grid	6,000	-6,000	0.0	0.0	0.0
J07	Regular Grid	6,000	6,000	0.0	0.0	0.0
J08	Regular Grid	6,000	9,000	0.0	0.0	0.0
J09	Regular Grid	6,000	12,000	0.0	0.0	0.0
K01	Regular Grid	9,000	-12,000	0.0	0.0	0.0
K02	Regular Grid	9,000	-9,000	0.0	0.0	0.0
K03	Regular Grid	9,000	-6,000	0.0	0.0	0.0
K05	Regular Grid	9,000	0	10.6	7.4	-3.2
K07	Regular Grid	9,000	6,000	0.0	0.0	0.0
K08	Regular Grid	9,000	9,000	0.0	0.0	0.0
K09	Regular Grid	9,000	12,000	0.0	0.0	0.0
L01	Regular Grid	12,000	-12,000	0.0	0.0	0.0
L02	Regular Grid	12,000	-9,000	0.0	0.0	0.0
L03	Regular Grid	12,000	-6,000	0.0	0.0	0.0
L04	Regular Grid	12,000	-3,000	0.0	0.0	0.0
L05	Regular Grid	12,000	0	0.4	5.5	5.1
L06	Regular Grid	12,000	3,000	0.1	0.3	0.2

Table M-15 (2 of 12)

Location Points TA-85 Values and Comparison: Baseline 2003 and Project (2005) Conditions

Grid Cell ID	Use	X Dist. (feet)[1]	Y Dist. (feet)[1]	2003 TA-85	Project (2005) TA-85	Difference
L07	Regular Grid	12,000	6,000	0.0	0.1	0.1
L08	Regular Grid	12,000	9,000	0.0	0.0	0.0
L09	Regular Grid	12,000	12,000	0.0	0.0	0.0
M01	Regular Grid	15,000	-12,000	0.0	0.0	0.0
M02	Regular Grid	15,000	-9,000	0.0	0.0	0.0
M03	Regular Grid	15,000	-6,000	0.0	0.0	0.0
M04	Regular Grid	15,000	-3,000	0.0	0.0	0.0
M05	Regular Grid	15,000	0	0.8	9.9	9.1
M06	Regular Grid	15,000	3,000	0.0	0.1	0.1
M07	Regular Grid	15,000	6,000	0.1	0.1	0.0
M08	Regular Grid	15,000	9,000	0.0	0.0	0.0
M09	Regular Grid	15,000	12,000	0.0	0.0	0.0
N01	Regular Grid	18,000	-12,000	0.0	0.0	0.0
N02	Regular Grid	18,000	-9,000	0.0	0.0	0.0
N03	Regular Grid	18,000	-6,000	0.0	0.0	0.0
N04	Regular Grid	18,000	-3,000	0.0	0.0	0.0
N05	Regular Grid	18,000	0	1.8	7.9	6.1
N06	Regular Grid	18,000	3,000	0.0	0.1	0.1
N07	Regular Grid	18,000	6,000	0.5	0.1	-0.4
N08	Regular Grid	18,000	9,000	0.0	0.0	0.0
N09	Regular Grid	18,000	12,000	0.0	0.0	0.0
O01	Regular Grid	21,000	-12,000	0.0	0.0	0.0
O02	Regular Grid	21,000	-9,000	0.0	0.0	0.0
O03	Regular Grid	21,000	-6,000	0.0	0.0	0.0
O04	Regular Grid	21,000	-3,000	0.0	0.0	0.0
O05	Regular Grid	21,000	0	1.9	4.1	2.2
O06	Regular Grid	21,000	3,000	0.0	0.1	0.1
O07	Regular Grid	21,000	6,000	0.5	0.0	-0.5
O08	Regular Grid	21,000	9,000	0.0	0.0	0.0
O09	Regular Grid	21,000	12,000	0.0	0.0	0.0
P01	Regular Grid	24,000	-12,000	0.0	0.0	0.0
P02	Regular Grid	24,000	-9,000	0.0	0.0	0.0
P03	Regular Grid	24,000	-6,000	0.0	0.0	0.0
P04	Regular Grid	24,000	-3,000	0.0	0.0	0.0
P05	Regular Grid	24,000	0	1.4	0.1	-1.3
P06	Regular Grid	24,000	3,000	0.0	0.1	0.1
P07	Regular Grid	24,000	6,000	0.0	0.0	0.0
P08	Regular Grid	24,000	9,000	0.0	0.0	0.0
P09	Regular Grid	24,000	12,000	0.0	0.0	0.0
Q01	Regular Grid	27,000	-12,000	0.0	0.0	0.0
Q02	Regular Grid	27,000	-9,000	0.0	0.0	0.0
Q03	Regular Grid	27,000	-6,000	0.0	0.0	0.0
Q04	Regular Grid	27,000	-3,000	0.0	0.0	0.0
Q05	Regular Grid	27,000	0	0.5	0.0	-0.5
Q06	Regular Grid	27,000	3,000	0.0	0.0	0.0
Q07	Regular Grid	27,000	6,000	0.0	0.0	0.0
Q08	Regular Grid	27,000	9,000	0.0	0.0	0.0
Q09	Regular Grid	27,000	12,000	0.0	0.0	0.0
R01	Regular Grid	30,000	-12,000	0.0	0.0	0.0
R02	Regular Grid	30,000	-9,000	0.0	0.0	0.0
R03	Regular Grid	30,000	-6,000	0.0	0.0	0.0
R04	Regular Grid	30,000	-3,000	0.0	0.0	0.0
R05	Regular Grid	30,000	0	0.0	0.0	0.0

Table M-15 (3 of 12)

Location Points TA-85 Values and Comparison: Baseline 2003 and Project (2005) Conditions

Grid Cell ID	Use	X Dist. (feet)[1]	Y Dist. (feet)[1]	2003 TA-85	Project (2005) TA-85	Difference
R06	Regular Grid	30,000	3,000	0.0	0.0	0.0
R07	Regular Grid	30,000	6,000	0.0	0.0	0.0
R08	Regular Grid	30,000	9,000	0.0	0.0	0.0
R09	Regular Grid	30,000	12,000	0.0	0.0	0.0
S01	Regular Grid	33,000	-12,000	0.0	0.0	0.0
S02	Regular Grid	33,000	-9,000	0.0	0.0	0.0
S03	Regular Grid	33,000	-6,000	0.0	0.0	0.0
S04	Regular Grid	33,000	-3,000	0.0	0.0	0.0
S05	Regular Grid	33,000	0	0.0	0.0	0.0
S06	Regular Grid	33,000	3,000	0.0	0.0	0.0
S07	Regular Grid	33,000	6,000	0.0	0.0	0.0
S08	Regular Grid	33,000	9,000	0.0	0.0	0.0
S09	Regular Grid	33,000	12,000	0.0	0.0	0.0
T01	Regular Grid	36,000	-12,000	0.0	0.0	0.0
T02	Regular Grid	36,000	-9,000	0.0	0.0	0.0
T03	Regular Grid	36,000	-6,000	0.0	0.0	0.0
T04	Regular Grid	36,000	-3,000	0.0	0.0	0.0
T05	Regular Grid	36,000	0	0.0	0.0	0.0
T06	Regular Grid	36,000	3,000	0.0	0.0	0.0
T07	Regular Grid	36,000	6,000	0.0	0.0	0.0
T08	Regular Grid	36,000	9,000	0.0	0.0	0.0
T09	Regular Grid	36,000	12,000	0.0	0.0	0.0
U01	Regular Grid	39,000	-12,000	0.0	0.0	0.0
U02	Regular Grid	39,000	-9,000	0.0	0.0	0.0
U03	Regular Grid	39,000	-6,000	0.0	0.0	0.0
U04	Regular Grid	39,000	-3,000	0.0	0.0	0.0
U05	Regular Grid	39,000	0	0.0	0.0	0.0
U06	Regular Grid	39,000	3,000	0.0	0.0	0.0
U07	Regular Grid	39,000	6,000	0.0	0.0	0.0
U08	Regular Grid	39,000	9,000	0.0	0.0	0.0
U09	Regular Grid	39,000	12,000	0.0	0.0	0.0
V01	Regular Grid	42,000	-12,000	0.0	0.0	0.0
V02	Regular Grid	42,000	-9,000	0.0	0.0	0.0
V03	Regular Grid	42,000	-6,000	0.0	0.0	0.0
V04	Regular Grid	42,000	-3,000	0.0	0.0	0.0
V05	Regular Grid	42,000	0	0.0	0.0	0.0
V06	Regular Grid	42,000	3,000	0.0	0.0	0.0
V07	Regular Grid	42,000	6,000	0.0	0.0	0.0
V08	Regular Grid	42,000	9,000	0.0	0.0	0.0
V09	Regular Grid	42,000	12,000	0.0	0.0	0.0
W01	Regular Grid	45,000	-12,000	0.0	0.0	0.0
W02	Regular Grid	45,000	-9,000	0.0	0.0	0.0
W03	Regular Grid	45,000	-6,000	0.0	0.0	0.0
W04	Regular Grid	45,000	-3,000	0.0	0.0	0.0
W05	Regular Grid	45,000	0	0.0	0.0	0.0
W06	Regular Grid	45,000	3,000	0.0	0.0	0.0
W07	Regular Grid	45,000	6,000	0.0	0.0	0.0
W08	Regular Grid	45,000	9,000	0.0	0.0	0.0
W09	Regular Grid	45,000	12,000	0.0	0.0	0.0
X01	Regular Grid	48,000	-12,000	0.0	0.0	0.0
X02	Regular Grid	48,000	-9,000	0.0	0.0	0.0
X03	Regular Grid	48,000	-6,000	0.0	0.0	0.0
X04	Regular Grid	48,000	-3,000	0.0	0.0	0.0

Table M-15 (4 of 12)

Location Points TA-85 Values and Comparison: Baseline 2003 and Project (2005) Conditions

Grid Cell ID	Use	X Dist. (feet)[1]	Y Dist. (feet)[1]	2003 TA-85	Project (2005) TA-85	Difference
X05	Regular Grid	48,000	0	0.0	0.0	0.0
X06	Regular Grid	48,000	3,000	0.0	0.0	0.0
X07	Regular Grid	48,000	6,000	0.0	0.0	0.0
X08	Regular Grid	48,000	9,000	0.0	0.0	0.0
X09	Regular Grid	48,000	12,000	0.0	0.0	0.0
Y01	Regular Grid	51,000	-12,000	0.0	0.0	0.0
Y02	Regular Grid	51,000	-9,000	0.0	0.0	0.0
Y03	Regular Grid	51,000	-6,000	0.0	0.0	0.0
Y04	Regular Grid	51,000	-3,000	0.0	0.0	0.0
Y05	Regular Grid	51,000	0	0.0	0.0	0.0
Y06	Regular Grid	51,000	3,000	0.0	0.0	0.0
Y07	Regular Grid	51,000	6,000	0.0	0.0	0.0
Y08	Regular Grid	51,000	9,000	0.0	0.0	0.0
Y09	Regular Grid	51,000	12,000	0.0	0.0	0.0
Z01	Regular Grid	54,000	-12,000	0.0	0.0	0.0
Z02	Regular Grid	54,000	-9,000	0.0	0.0	0.0
Z03	Regular Grid	54,000	-6,000	0.0	0.0	0.0
Z04	Regular Grid	54,000	-3,000	0.0	0.0	0.0
Z05	Regular Grid	54,000	0	0.0	0.0	0.0
Z06	Regular Grid	54,000	3,000	0.0	0.0	0.0
Z07	Regular Grid	54,000	6,000	0.0	0.0	0.0
Z08	Regular Grid	54,000	9,000	0.0	0.0	0.0
Z09	Regular Grid	54,000	12,000	0.0	0.0	0.0
CH006	Church	18,362	851	0.2	3.8	3.6
CH008	Church	-1,056	-6,191	0.0	0.0	0.0
CH011	Church	33,776	-3,732	0.0	0.0	0.0
CH012	Church	34,672	611	0.0	0.0	0.0
CH019	Church	16,609	-6,394	0.0	0.0	0.0
CH020	Church	16,609	-5,892	0.0	0.0	0.0
CH022	Church	18,259	9,542	0.0	0.0	0.0
CH025	Church	16,984	-6,155	0.0	0.0	0.0
CH026	Church	772	5,897	0.0	0.0	0.0
CH030	Church	37,397	-3,562	0.0	0.0	0.0
CH031	Church	29,694	4,531	0.0	0.0	0.0
CH032	Church	34,999	-2,528	0.0	0.0	0.0
CH037	Church	12,173	2,634	0.0	0.1	0.1
CH044	Church	29,459	441	0.0	0.0	0.0
CH047	Church	36,169	6,797	0.0	0.0	0.0
CH048	Church	36,695	2,519	0.0	0.0	0.0
CH049	Church	29,734	8,749	0.0	0.0	0.0
CH052	Church	28,386	11,458	0.0	0.0	0.0
CH053	Church	32,138	10,827	0.0	0.0	0.0
CH056	Church	29,496	10,032	0.0	0.0	0.0
CH058	Church	37,445	-3,804	0.0	0.0	0.0
CH060	Church	37,453	1,503	0.0	0.0	0.0
CH062	Church	18,436	-9,362	0.0	0.0	0.0
CH067	Church	24,220	9,999	0.0	0.0	0.0
CH069	Church	24,032	-1,953	0.0	0.0	0.0
CH072	Church	36,144	10,802	0.0	0.0	0.0
CH075	Church	36,127	-1,223	0.0	0.0	0.0
CH076	Church	36,351	8,763	0.0	0.0	0.0
CH078	Church	30,942	225	0.0	0.0	0.0
CH082	Church	15,556	4,179	0.2	1.0	0.8

Table M-15 (5 of 12)

Location Points TA-85 Values and Comparison: Baseline 2003 and Project (2005) Conditions

Grid Cell ID	Use	X Dist. (feet)[1]	Y Dist. (feet)[1]	2003 TA-85	Project (2005) TA-85	Difference
CH083	Church	-5,007	6,170	0.0	0.0	0.0
CH087	Church	15,502	10,235	0.0	0.0	0.0
CH094	Church	37,402	4,700	0.0	0.0	0.0
CH096	Church	33,100	4,191	0.0	0.0	0.0
CH097	Church	922	-6,751	0.0	0.0	0.0
CH098	Church	3,426	10,997	0.0	0.0	0.0
CH099	Church	15,214	-4,708	0.0	0.0	0.0
CH100	Church	16,819	5,275	1.2	0.3	-0.9
CH101	Church	3,028	9,100	0.0	0.0	0.0
CH102	Church	29,435	-3,393	0.0	0.0	0.0
CH103	Church	33,060	9,231	0.0	0.0	0.0
CH107	Church	12,493	-6,171	0.0	0.0	0.0
CH108	Church	12,557	-6,505	0.0	0.0	0.0
CH109	Church	-7,997	6,637	0.0	0.0	0.0
CH116	Church	26,573	11,459	0.0	0.0	0.0
CH118	Church	34,682	5,288	0.0	0.0	0.0
CH119	Church	-3,523	-8,901	0.0	0.0	0.0
CH120	Church	-3,133	-5,122	0.8	0.0	-0.8
CH121	Church	-1,025	-8,528	0.0	0.0	0.0
CH122	Church	-2,777	-7,154	0.0	0.0	0.0
CH129	Church	20,742	-3,140	0.0	0.0	0.0
CH132	Church	15,736	5,775	0.9	0.1	-0.8
CH133	Church	27,851	1,067	0.1	0.4	0.3
CH135	Church	33,627	6,388	0.0	0.0	0.0
CH137	Church	34,656	-3,968	0.0	0.0	0.0
CH139	Church	36,337	10,957	0.0	0.0	0.0
CH140	Church	34,661	-513	0.0	0.0	0.0
CH144	Church	30,061	-1,582	0.0	0.0	0.0
CH145	Church	37,669	-1,182	0.0	0.0	0.0
CH146	Church	13,494	8,321	0.0	0.0	0.0
CH150	Church	16,056	6,214	0.0	0.0	0.0
CH151	Church	16,044	5,617	1.1	0.2	-0.9
CH156	Church	34,981	1,468	0.0	0.0	0.0
CH157	Church	4,879	6,462	0.0	0.0	0.0
CH158	Church	24,437	2,639	0.0	0.1	0.1
CH160	Church	12,198	7,451	0.0	0.0	0.0
CH162	Church	18,585	-9,335	0.0	0.0	0.0
CH163	Church	36,352	7,585	0.0	0.0	0.0
CH164	Church	17,219	5,679	1.0	0.1	-0.9
CH165	Church	31,191	-1,517	0.0	0.0	0.0
CH166	Church	17,839	7,360	0.0	0.0	0.0
CH168	Church	2,715	9,777	0.0	0.0	0.0
CH172	Church	16,888	11,345	0.0	0.0	0.0
CH173	Church	20,347	-4,191	0.0	0.0	0.0
CH174	Church	37,440	7,189	0.0	0.0	0.0
CH175	Church	-4,960	6,402	0.0	0.0	0.0
CH177	Church	29,502	11,020	0.0	0.0	0.0
CH180	Church	37,667	5,420	0.0	0.0	0.0
CH182	Church	37,462	-1,152	0.0	0.0	0.0
CH183	Church	35,808	6,815	0.0	0.0	0.0
CH185	Church	32,290	4,655	0.0	0.0	0.0
CH186	Church	37,662	-2,735	0.0	0.0	0.0
CH188	Church	29,706	9,678	0.0	0.0	0.0

Table M-15 (6 of 12)

Location Points TA-85 Values and Comparison: Baseline 2003 and Project (2005) Conditions

Grid Cell ID	Use	X Dist. (feet)[1]	Y Dist. (feet)[1]	2003 TA-85	Project (2005) TA-85	Difference
CH189	Church	37,456	8,316	0.0	0.0	0.0
CH190	Church	15,769	-1,744	1.1	0.1	-1.0
CH191	Church	37,440	3,115	0.0	0.0	0.0
CH193	Church	16,098	3,516	0.0	0.1	0.1
CH197	Church	36,141	-622	0.0	0.0	0.0
CH199	Church	32,312	-2,517	0.0	0.0	0.0
CH201	Church	30,178	11,450	0.0	0.0	0.0
CH205	Church	36,034	6,388	0.0	0.0	0.0
CH206	Church	32,298	-1,373	0.0	0.0	0.0
CH208	Church	34,964	-345	0.0	0.0	0.0
CH211	Church	36,174	2,481	0.0	0.0	0.0
CH213	Church	18,281	1,520	0.1	0.1	0.0
CH216	Church	32,313	1,911	0.0	0.0	0.0
CH218	Church	15,869	-951	7.1	2.8	-4.3
CH219	Church	22,848	11,338	0.0	0.0	0.0
CH221	Church	23,975	6,427	0.0	0.0	0.0
CH222	Church	15,086	-9,405	0.0	0.0	0.0
CH225	Church	13,793	-7,039	0.0	0.0	0.0
CH230	Church	32,151	4,322	0.0	0.0	0.0
CH231	Church	36,143	9,975	0.0	0.0	0.0
CH234	Church	36,895	6,381	0.0	0.0	0.0
CH235	Church	32,127	2,022	0.0	0.0	0.0
CH239	Church	29,501	6,867	0.0	0.0	0.0
CH240	Church	37,448	-2,742	0.0	0.0	0.0
CH241	Church	24,439	3,466	0.0	0.0	0.0
CH244	Church	37,681	8,609	0.0	0.0	0.0
CH247	Church	34,958	2,144	0.0	0.0	0.0
CH250	Church	28,704	-4,168	0.0	0.0	0.0
CH251	Church	13,890	6,115	0.0	0.1	0.1
CH254	Church	17,430	10,595	0.0	0.0	0.0
CH255	Church	12,359	3,858	0.8	2.3	1.5
CH256	Church	16,578	3,534	0.0	0.1	0.1
CH257	Church	15,548	-8,178	0.0	0.0	0.0
CH259	Church	14,539	12,155	0.0	0.0	0.0
CH260	Church	23,953	-3,330	0.0	0.0	0.0
CH261	Church	19,150	-3,057	0.0	0.0	0.0
CH262	Church	-3,362	-7,566	0.0	0.0	0.0
CH266	Church	16,872	3,711	0.0	0.1	0.1
CH267	Church	35,011	8,122	0.0	0.0	0.0
CH270	Church	31,466	6,365	0.0	0.0	0.0
CH273	Church	31,581	550	0.0	0.0	0.0
CH275	Church	34,643	11,454	0.0	0.0	0.0
CH276	Church	29,696	3,909	0.0	0.0	0.0
CH281	Church	33,441	3,079	0.0	0.0	0.0
CH282	Church	17,872	-2,898	0.0	0.0	0.0
CH284	Church	8,877	10,121	0.0	0.0	0.0
CH285	Church	6,222	7,425	0.0	0.0	0.0
CH289	Church	15,218	-1,808	1.0	0.1	-0.9
CH290	Church	16,538	-2,345	0.0	0.0	0.0
CH294	Church	32,328	7,233	0.0	0.0	0.0
CH300	Church	33,630	2,854	0.0	0.0	0.0
CH303	Church	29,690	5,046	0.0	0.0	0.0
CH304	Church	6,157	8,380	0.0	0.0	0.0

Table M-15 (7 of 12)

Location Points TA-85 Values and Comparison: Baseline 2003 and Project (2005) Conditions

Grid Cell ID	Use	X Dist. (feet)[1]	Y Dist. (feet)[1]	2003 TA-85	Project (2005) TA-85	Difference
CH308	Church	26,723	11,459	0.0	0.0	0.0
CH311	Church	29,706	9,728	0.0	0.0	0.0
CH313	Church	34,942	2,884	0.0	0.0	0.0
CH316	Church	33,455	6,366	0.0	0.0	0.0
CH321	Church	26,844	6,592	0.0	0.0	0.0
CH322	Church	24,378	5,651	0.0	0.0	0.0
CH323	Church	32,144	3,499	0.0	0.0	0.0
CH329	Church	33,816	6,120	0.0	0.0	0.0
CH332	Church	29,987	1,050	0.0	0.0	0.0
CH334	Church	-3,362	-8,211	0.0	0.0	0.0
CH335	Church	35,032	9,135	0.0	0.0	0.0
CH338	Church	34,658	-3,718	0.0	0.0	0.0
CH340	Church	37,438	6,936	0.0	0.0	0.0
CH343	Church	15,571	5,631	1.1	0.2	-0.9
CH346	Church	34,683	2,176	0.0	0.0	0.0
CH350	Church	36,465	11,455	0.0	0.0	0.0
CH351	Church	37,457	8,790	0.0	0.0	0.0
CH352	Church	36,665	11,456	0.0	0.0	0.0
CH354	Church	35,029	10,381	0.0	0.0	0.0
CH359	Church	34,660	-759	0.0	0.0	0.0
CH361	Church	-297	10,928	0.0	0.0	0.0
CH364	Church	-3,000	-5,050	0.8	0.0	-0.8
CH366	Church	34,663	-2,477	0.0	0.0	0.0
CH368	Church	29,105	-1,896	0.0	0.0	0.0
CH375	Church	17,910	-9,299	0.0	0.0	0.0
CH378	Church	32,154	5,163	0.0	0.0	0.0
CH383	Church	23,176	6,146	0.1	0.0	-0.1
CH388	Church	29,674	7,848	0.0	0.0	0.0
CH390	Church	32,137	10,569	0.0	0.0	0.0
CH392	Church	33,524	-107	0.0	0.0	0.0
CH393	Church	29,454	197	0.0	0.0	0.0
CH395	Church	20	7,468	0.0	0.0	0.0
CH396	Church	-3,363	-7,999	0.0	0.0	0.0
CH397	Church	-3,153	6,521	0.0	0.0	0.0
CH402	Church	33,574	-393	0.0	0.0	0.0
CH405	Church	26,436	-4,141	0.0	0.0	0.0
CH408	Church	16,609	-6,117	0.0	0.0	0.0
CH411	Church	-5,649	6,168	0.0	0.0	0.0
CH413	Church	955	5,447	0.0	0.0	0.0
CH415	Church	-574	-8,529	0.0	0.0	0.0
CH416	Church	-3,520	-6,950	0.0	0.0	0.0
CH423	Church	34,438	6,123	0.0	0.0	0.0
CH427	Church	27,099	2,637	0.0	0.0	0.0
CH430	Church	29,435	-3,530	0.0	0.0	0.0
CH431	Church	26,113	11,458	0.0	0.0	0.0
CH432	Church	32,135	10,287	0.0	0.0	0.0
CH433	Church	34,981	4,271	0.0	0.0	0.0
CH434	Church	29,486	4,620	0.0	0.0	0.0
CH436	Church	36,665	6,526	0.0	0.0	0.0
CH438	Church	16,883	7,283	0.0	0.0	0.0
CH440	Church	21,860	-3,132	0.0	0.0	0.0
CH453	Church	30,531	6,362	0.0	0.0	0.0
CH457	Church	37,682	5,673	0.0	0.0	0.0

Table M-15 (8 of 12)

Location Points TA-85 Values and Comparison: Baseline 2003 and Project (2005) Conditions

Grid Cell ID	Use	X Dist. (feet)[1]	Y Dist. (feet)[1]	2003 TA-85	Project (2005) TA-85	Difference
CH459	Church	34,981	4,311	0.0	0.0	0.0
CH461	Church	2,474	-5,106	0.0	0.0	0.0
CH462	Church	37,658	2,565	0.0	0.0	0.0
CH463	Church	28,157	7,476	0.0	0.0	0.0
CH465	Church	29,437	-2,633	0.0	0.0	0.0
CH469	Church	36,307	9,187	0.0	0.0	0.0
CH470	Church	15,830	5,944	0.6	0.1	-0.5
CH471	Church	34,666	3,437	0.0	0.0	0.0
CH472	Church	34,478	360	0.0	0.0	0.0
CH479	Church	29,687	3,172	0.0	0.0	0.0
CH480	Church	36,132	8,126	0.0	0.0	0.0
CH481	Church	6,983	6,070	0.0	0.0	0.0
CH482	Church	35,540	2,955	0.0	0.0	0.0
CH485	Church	37,466	9,880	0.0	0.0	0.0
CH493	Church	36,143	9,513	0.0	0.0	0.0
CH497	Church	12,760	12,329	0.0	0.0	0.0
CH500	Church	29,680	2,945	0.0	0.0	0.0
CH503	Church	-2,777	-7,028	0.0	0.0	0.0
CH507	Church	38,086	-1,785	0.0	0.0	0.0
CH509	Church	34,671	8,932	0.0	0.0	0.0
CH513	Church	17,184	8,722	0.0	0.0	0.0
CH518	Church	5,989	6,176	0.0	0.0	0.0
CH519	Church	-4,691	6,400	0.0	0.0	0.0
CH520	Church	3,327	10,191	0.0	0.0	0.0
CH521	Church	427	8,681	0.0	0.0	0.0
CH522	Church	13,607	1,267	0.1	0.1	0.0
CH524	Church	34,683	4,171	0.0	0.0	0.0
CH529	Church	37,462	-1,270	0.0	0.0	0.0
CH532	Church	23,813	9,141	0.0	0.0	0.0
HOS05	Hospital	15,713	-5,495	0.0	0.0	0.0
HOS07	Hospital	15,334	-5,123	0.0	0.0	0.0
HOS09	Hospital	23,095	8,420	0.0	0.0	0.0
HOS10	Hospital	18,684	3,896	0.0	0.1	0.1
HOS11	Hospital	18,500	8,884	0.0	0.0	0.0
HOS12	Hospital	13,791	-5,987	0.0	0.0	0.0
HOS13	Hospital	29,985	5,901	0.0	0.0	0.0
HOS15	Hospital	17,190	1,285	0.1	0.1	0.0
HOS16	Hospital	13,553	7,081	0.0	0.0	0.0
HOS18	Hospital	13,797	-3,917	0.0	0.0	0.0
HOS19	Hospital	17,676	2,790	0.0	0.0	0.0
LIB01	Library	15,816	-9,101	0.0	0.0	0.0
LIB02	Library	15,450	7,185	0.0	0.0	0.0
LIB03	Library	24,178	-3,305	0.0	0.0	0.0
LIB04	Library	23,842	6,513	0.0	0.0	0.0
LIB05	Library	3,672	4,468	1.0	0.3	-0.7
LIB06	Library	32,350	-1,151	0.0	0.0	0.0
LIB07	Library	16,622	-1,444	1.5	0.1	-1.4
LIB10	Library	37,424	2,049	0.0	0.0	0.0
LIB11	Library	-3,147	-6,769	0.0	0.0	0.0
LIB13	Library	-3,179	6,210	0.0	0.0	0.0
NH003	Hospital, Convalescent	29,488	7,434	0.0	0.0	0.0
NH004	Hospital, Convalescent	34,331	5,967	0.0	0.0	0.0

Table M-15 (9 of 12)

Location Points TA-85 Values and Comparison: Baseline 2003 and Project (2005) Conditions

Grid Cell ID	Use	X Dist. (feet)[1]	Y Dist. (feet)[1]	2003 TA-85	Project (2005) TA-85	Difference
NH007	Hospital, Convalescent	17,108	11,062	0.0	0.0	0.0
NH008	Hospital, Convalescent	20,727	-198	2.3	2.3	0.0
NH009	Hospital, Convalescent	13,755	-5,511	0.0	0.0	0.0
NH010	Hospital, Convalescent	34,543	11,454	0.0	0.0	0.0
NH012	Hospital, Convalescent	23,851	6,390	0.0	0.0	0.0
NH013	Hospital, Convalescent	16,922	7,743	0.0	0.0	0.0
NH015	Hospital, Convalescent	34,661	-443	0.0	0.0	0.0
NH017	Hospital, Convalescent	34,326	6,502	0.0	0.0	0.0
NH018	Hospital, Convalescent	17,706	7,119	0.0	0.0	0.0
NH019	Hospital, Convalescent	14,640	6,647	0.0	0.0	0.0
NH022	Hospital, Convalescent	35,884	6,388	0.0	0.0	0.0
NH023	Hospital, Convalescent	13,941	-7,834	0.0	0.0	0.0
NH025	Hospital, Convalescent	15,569	12,004	0.0	0.0	0.0
NH026	Hospital, Convalescent	26,823	2,036	0.0	0.0	0.0
NH027	Hospital, Convalescent	18,773	-9,296	0.0	0.0	0.0
NH028	Hospital, Convalescent	14,396	6,645	0.0	0.0	0.0
NH033	Hospital, Convalescent	12,509	8,161	0.0	0.0	0.0
NH037	Hospital, Convalescent	34,990	-3,870	0.0	0.0	0.0
NH038	Hospital, Convalescent	17,775	10,041	0.0	0.0	0.0
NH040	Hospital, Convalescent	22,738	6,430	0.0	0.0	0.0
NH041	Hospital, Convalescent	37,456	8,531	0.0	0.0	0.0
NH042	Hospital, Convalescent	34,661	7,463	0.0	0.0	0.0
NH043	Hospital, Convalescent	-7,595	6,080	0.0	0.0	0.0
NH044	Hospital, Convalescent	18,202	2,864	0.0	0.0	0.0
NH045	Hospital, Convalescent	15,756	-5,107	0.0	0.0	0.0
PBS006	Public School	27,281	10,743	0.0	0.0	0.0
PBS009	Public School	34,094	2,313	0.0	0.0	0.0
PBS011	Public School	-2,515	-6,204	0.0	0.0	0.0
PBS017	Public School	14,818	3,297	0.0	0.1	0.1
PBS018	Public School	35,904	3,121	0.0	0.0	0.0
PBS019	Public School	12,212	-1,924	2.0	0.2	-1.8
PBS021	Public School	911	-6,459	0.0	0.0	0.0
PBS022	Public School	13,419	10,800	0.0	0.0	0.0
PBS023	Public School	15,909	-7,797	0.0	0.0	0.0
PBS024	Public School	26,296	-2,314	0.0	0.0	0.0
PBS026	Public School	23,650	-1,034	0.0	0.0	0.0
PBS027	Public School	172	11,002	0.0	0.0	0.0
PBS028	Public School	15,282	7,661	0.0	0.0	0.0
PBS029	Public School	25,282	8,750	0.0	0.0	0.0
PBS031	Public School	-1,003	-8,864	0.0	0.0	0.0
PBS032	Public School	-3,780	-6,609	0.0	0.0	0.0
PBS033	Public School	14,499	-7,413	0.0	0.0	0.0
PBS035	Public School	12,046	-585	3.0	17.9	14.9
PBS036	Public School	37,216	-3,113	0.0	0.0	0.0
PBS040	Public School	31,524	-2,029	0.0	0.0	0.0
PBS041	Public School	32,406	-2,584	0.0	0.0	0.0
PBS042	Public School	12,992	-8,938	0.0	0.0	0.0
PBS047	Public School	13,295	5,451	1.2	0.2	-1.0
PBS048	Public School	13,951	6,710	0.0	0.0	0.0
PBS049	Public School	-1,068	-4,601	0.9	0.2	-0.7
PBS050	Public School	14,856	6,115	0.1	0.1	0.0
PBS054	Public School	16,704	9,736	0.0	0.0	0.0
PBS055	Public School	14,713	3	1.2	10.6	9.4

Table M-15 (10 of 12)

Location Points TA-85 Values and Comparison: Baseline 2003 and Project (2005) Conditions

Grid Cell ID	Use	X Dist. (feet)[1]	Y Dist. (feet)[1]	2003 TA-85	Project (2005) TA-85	Difference
PBS058	Public School	10,708	-7,313	0.0	0.0	0.0
PBS059	Public School	18,679	5,302	0.9	0.2	-0.7
PBS061	Public School	419	7,093	0.0	0.0	0.0
PBS062	Public School	968	5,128	0.0	0.0	0.0
PBS086	Public School	38,040	1,964	0.0	0.0	0.0
PBS090	Public School	30,414	5,411	0.0	0.0	0.0
PBS091	Public School	11,903	-2,672	0.1	0.1	0.0
PBS098	Public School	35,517	9,615	0.0	0.0	0.0
PBS099	Public School	-4,391	5,512	0.0	0.0	0.0
PBS100	Public School	36,630	5,989	0.0	0.0	0.0
PBS101	Public School	29,058	2,028	0.0	0.0	0.0
PBS102	Public School	17,390	-2,628	0.0	0.0	0.0
PBS105	Public School	11,840	4,627	2.2	2.7	0.5
PBS106	Public School	808	9,178	0.0	0.0	0.0
PBS107	Public School	-8,294	5,322	0.0	0.0	0.0
PBS111	Public School	32,576	10,502	0.0	0.0	0.0
PBS113	Public School	34,981	4,193	0.0	0.0	0.0
PBS117	Public School	24,929	3,265	0.0	0.0	0.0
PBS120	Public School	-6,877	5,485	0.0	0.0	0.0
PBS121	Public School	-6,871	5,484	0.0	0.0	0.0
PBS122	Public School	5,515	8,945	0.0	0.0	0.0
PBS123	Public School	18,043	-527	4.5	3.5	-1.0
PBS125	Public School	33,837	-1,843	0.0	0.0	0.0
PBS127	Public School	21,457	-3,062	0.0	0.0	0.0
PBS128	Public School	18,588	-5,939	0.0	0.0	0.0
PBS140	Public School	22,487	-1,032	0.1	0.0	-0.1
PBS201	Public School	23,648	-1,395	0.0	0.0	0.0
PRK01	Park	11,566	6,133	0.0	0.0	0.0
PRK02	Park	5,414	4,921	0.1	0.1	0.0
PRK03	Park	21,160	-3,063	0.0	0.0	0.0
PRK05	Park	9,350	-9,074	0.0	0.0	0.0
PRK07	Park	-13,479	6,711	0.0	0.0	0.0
PRK10	Park	-5,023	-4,415	3.8	1.6	-2.2
PRK11	Park	-1,802	-8,136	0.0	0.0	0.0
PRK13	Park	-225	-8,037	0.0	0.0	0.0
PRK15	Park	1,472	-5,400	0.0	0.0	0.0
PRK16	Park	1,719	-7,830	0.0	0.0	0.0
PRK18	Park	13,866	-7,408	0.0	0.0	0.0
PRK201	Park	-2,921	5,657	0.0	0.0	0.0
PRK32	Park	25,609	7,591	0.0	0.0	0.0
PRK41	Park	15,768	6,307	0.0	0.0	0.0
PRK42	Park	13,359	1,894	0.0	0.1	0.1
PRK43	Park	23,171	4,140	0.0	0.0	0.0
PRK45	Park	28,752	5,597	0.0	0.0	0.0
PRK46	Park	36,620	5,021	0.0	0.0	0.0
PRK52	Park	14,558	-1,937	0.6	0.1	-0.5
PRK56	Park	28,407	1,919	0.0	0.0	0.0
PRK59	Park	18,760	7,140	0.0	0.0	0.0
PRK60	Park	13,470	9,437	0.0	0.0	0.0
PRK62	Park	2,383	-6,026	0.0	0.0	0.0
PRK65	Park	-6,967	-8,394	0.0	0.0	0.0
PRK67	Park	-10,639	716	8.3	17.7	9.4
PRK68	Park	-761	5,208	0.0	0.0	0.0

Table M-15 (11 of 12)

Location Points TA-85 Values and Comparison: Baseline 2003 and Project (2005) Conditions

Grid Cell ID	Use	X Dist. (feet)[1]	Y Dist. (feet)[1]	2003 TA-85	Project (2005) TA-85	Difference
PRK70	Park	34,964	-416	0.0	0.0	0.0
PRK71	Park	-4,883	-7,930	0.0	0.0	0.0
PRK72	Park	-3,078	-6,614	0.0	0.0	0.0
PVS001	Private School	37,733	11,384	0.0	0.0	0.0
PVS002	Private School	37,336	-3,455	0.0	0.0	0.0
PVS003	Private School	34,483	5,967	0.0	0.0	0.0
PVS004	Private School	27,097	2,468	0.0	0.0	0.0
PVS007	Private School	-7,778	4,626	0.0	0.0	0.0
PVS011	Private School	833	5,679	0.0	0.0	0.0
PVS012	Private School	771	5,989	0.0	0.0	0.0
PVS017	Private School	34,119	6,123	0.0	0.0	0.0
PVS025	Private School	12,977	12,319	0.0	0.0	0.0
PVS026	Private School	36,140	6,964	0.0	0.0	0.0
PVS028	Private School	24,379	5,761	0.0	0.0	0.0
PVS029	Private School	23,982	7,178	0.0	0.0	0.0
PVS030	Private School	28,850	11,455	0.0	0.0	0.0
PVS031	Private School	-12,447	6,370	0.0	0.0	0.0
PVS033	Private School	34,984	5,635	0.0	0.0	0.0
PVS034	Private School	29,461	-1,469	0.0	0.0	0.0
PVS035	Private School	34,140	9,211	0.0	0.0	0.0
PVS036	Private School	25,423	11,457	0.0	0.0	0.0
PVS037	Private School	29,435	-516	0.0	0.0	0.0
PVS044	Private School	13,506	6,729	0.0	0.0	0.0
PVS046	Private School	29,009	-4,204	0.0	0.0	0.0
PVS048	Private School	-501	-8,326	0.0	0.0	0.0
PVS049	Private School	34,967	2,020	0.0	0.0	0.0
PVS051	Private School	16,298	5,790	0.9	0.1	-0.8
PVS054	Private School	32,159	8,982	0.0	0.0	0.0
PVS055	Private School	18,415	5,475	1.0	0.2	-0.8
PVS056	Private School	34,709	4,608	0.0	0.0	0.0
PVS060	Private School	6,258	8,224	0.0	0.0	0.0
PVS062	Private School	19,294	-197	3.0	4.2	1.2
PVS064	Private School	13,310	7,076	0.0	0.0	0.0
PVS065	Private School	33,672	6,369	0.0	0.0	0.0
PVS066	Private School	14,716	11,128	0.0	0.0	0.0
PVS067	Private School	32,753	-466	0.0	0.0	0.0
PVS069	Private School	13,205	6,854	0.0	0.0	0.0
PVS070	Private School	15,369	3,722	0.1	0.4	0.3
PVS071	Private School	2,864	13,792	0.0	0.0	0.0
PVS073	Private School	24,503	5,600	0.0	0.0	0.0
PVS074	Private School	24,091	6,749	0.0	0.0	0.0
PVS077	Private School	12,602	-226	1.1	13.5	12.4
PVS081	Private School	29,676	2,047	0.0	0.0	0.0
PVS082	Private School	32,177	6,695	0.0	0.0	0.0
PVS083	Private School	17,478	5,970	0.7	0.1	-0.6
PVS084	Private School	16,261	-881	6.6	2.9	-3.7
PVS085	Private School	32,138	10,688	0.0	0.0	0.0
PVS086	Private School	36,351	8,881	0.0	0.0	0.0
PVS087	Private School	32,298	-1,596	0.0	0.0	0.0
PVS091	Private School	27,180	2,649	0.0	0.0	0.0
PVS092	Private School	18,568	9,623	0.0	0.0	0.0
PVS093	Private School	-5,793	5,899	0.0	0.0	0.0
PVS099	Private School	22,860	11,024	0.0	0.0	0.0

Table M-15 (12 of 12)

Location Points TA-85 Values and Comparison: Baseline 2003 and Project (2005) Conditions

Grid Cell ID	Use	X Dist. (feet)[1]	Y Dist. (feet)[1]	2003 TA-85	Project (2005) TA-85	Difference
PVS101	Private School	29,432	-911	0.0	0.0	0.0
PVS103	Private School	3,278	9,736	0.0	0.0	0.0
PVS104	Private School	9,240	3,525	1.3	4.0	2.7
PVS105	Private School	14,468	-9,493	0.0	0.0	0.0
PVS106	Private School	26,663	6,419	0.0	0.0	0.0
PVS107	Private School	3,658	5,088	0.0	0.1	0.1
PVS108	Private School	23,359	6,499	0.0	0.0	0.0
PVS109	Private School	18,639	3,216	0.0	0.1	0.1
PVS110	Private School	-573	-8,780	0.0	0.0	0.0
PVS111	Private School	16,874	-6,105	0.0	0.0	0.0
PBS114	Private School	9,738	3,976	2.1	3.7	1.6
PBS116	Private School	8,575	4,739	2.1	2.1	0.0
PVS138	Private School	-2,901	10,004	0.0	0.0	0.0

Note: TA-85 = Total number of minutes per day that exceed 75 decibels at indicated location.

1/ The sites are located by X and Y coordinates in feet. Each X and Y value is a distance measured in feet from the airport reference point on the airport (near the Tom Bradley International Terminal. This type of coordinate system is called the Cartesian or rectangular coordinate system. This system is commonly defined by two axes at right angles (two lines that form a 90-degree angle to each other and are perpendicular) forming a plane (xy plane). The horizontal (moving left or right along the plane) axis is called the x-axis. The opposite is called the vertical (moving up or down along the plane) axis, which is called the y-axis. The point of intersection (where both the x and y axes meet) is called the origin point (depicted as 0,0 point). A unit of length is used to mark along the x and y axes, which forms a grid. To specify a particular point on a two dimensional coordinate system, you indicate the x unit first, followed by the y unit in the form (x,y), an ordered pair. The intersection of the two x-y axes creates four quadrants-northeast, southeast, southwest and northwest. In the northeast quadrant, values are (x,y), and southeast:(-x,y), southwest:(-x,-y) and northwest:(x,-y).

Source: Ricondo & Associates, Inc., 2004; Based on Landrum and Brown, 2002 Grids – Final LAX Master Plan EIS/EIR
Prepared by: Ricondo & Associates, Inc.

Table M-16 (1of 12)

Location Points TA-95 Values and Comparison: Baseline 2003 and Project (2005) Conditions

Grid Cell ID	Use	X Dist. (feet)[1]	Y Dist. (feet)[1]	2003 TA-95	Project (2005) TA-95	Difference
C08	Regular Grid	-15,000	9,000	0.0	0.0	0.0
C09	Regular Grid	-15,000	12,000	0.0	0.0	0.0
D06	Regular Grid	-12,000	3,000	0.0	0.0	0.0
D07	Regular Grid	-12,000	6,000	0.0	0.0	0.0
D08	Regular Grid	-12,000	9,000	0.0	0.0	0.0
D09	Regular Grid	-12,000	12,000	0.0	0.0	0.0
E07	Regular Grid	-9,000	6,000	0.0	0.0	0.0
E08	Regular Grid	-9,000	9,000	0.0	0.0	0.0
E09	Regular Grid	-9,000	12,000	0.0	0.0	0.0
F02	Regular Grid	-6,000	-9,000	0.0	0.0	0.0
F03	Regular Grid	-6,000	-6,000	0.0	0.0	0.0
F07	Regular Grid	-6,000	6,000	0.0	0.0	0.0
F08	Regular Grid	-6,000	9,000	0.0	0.0	0.0
F09	Regular Grid	-6,000	12,000	0.0	0.0	0.0
G01	Regular Grid	-3,000	-12,000	0.0	0.0	0.0
G02	Regular Grid	-3,000	-9,000	0.0	0.0	0.0
G03	Regular Grid	-3,000	-6,000	0.0	0.0	0.0
G07	Regular Grid	-3,000	6,000	0.0	0.0	0.0
G08	Regular Grid	-3,000	9,000	0.0	0.0	0.0
G09	Regular Grid	-3,000	12,000	0.0	0.0	0.0
H01	Regular Grid	0	-12,000	0.0	0.0	0.0
H02	Regular Grid	0	-9,000	0.0	0.0	0.0
H03	Regular Grid	0	-6,000	0.0	0.0	0.0
H07	Regular Grid	0	6,000	0.0	0.0	0.0
H08	Regular Grid	0	9,000	0.0	0.0	0.0
H09	Regular Grid	0	12,000	0.0	0.0	0.0
I01	Regular Grid	3,000	-12,000	0.0	0.0	0.0
I02	Regular Grid	3,000	-9,000	0.0	0.0	0.0
I03	Regular Grid	3,000	-6,000	0.0	0.0	0.0
I07	Regular Grid	3,000	6,000	0.0	0.0	0.0
I08	Regular Grid	3,000	9,000	0.0	0.0	0.0
I09	Regular Grid	3,000	12,000	0.0	0.0	0.0
J01	Regular Grid	6,000	-12,000	0.0	0.0	0.0
J02	Regular Grid	6,000	-9,000	0.0	0.0	0.0
J03	Regular Grid	6,000	-6,000	0.0	0.0	0.0
J07	Regular Grid	6,000	6,000	0.0	0.0	0.0
J08	Regular Grid	6,000	9,000	0.0	0.0	0.0
J09	Regular Grid	6,000	12,000	0.0	0.0	0.0
K01	Regular Grid	9,000	-12,000	0.0	0.0	0.0
K02	Regular Grid	9,000	-9,000	0.0	0.0	0.0
K03	Regular Grid	9,000	-6,000	0.0	0.0	0.0
K05	Regular Grid	9,000	0	0.2	0.0	-0.2
K07	Regular Grid	9,000	6,000	0.0	0.0	0.0
K08	Regular Grid	9,000	9,000	0.0	0.0	0.0
K09	Regular Grid	9,000	12,000	0.0	0.0	0.0
L01	Regular Grid	12,000	-12,000	0.0	0.0	0.0
L02	Regular Grid	12,000	-9,000	0.0	0.0	0.0
L03	Regular Grid	12,000	-6,000	0.0	0.0	0.0
L04	Regular Grid	12,000	-3,000	0.0	0.0	0.0
L05	Regular Grid	12,000	0	0.0	0.0	0.0
L06	Regular Grid	12,000	3,000	0.0	0.0	0.0

Table M-16 (2 of 12)

Location Points TA-95 Values and Comparison: Baseline 2003 and Project (2005) Conditions

Grid Cell ID	Use	X Dist. (feet)[1]	Y Dist. (feet)[1]	2003 TA-95	Project (2005) TA-95	Difference
L07	Regular Grid	12,000	6,000	0.0	0.0	0.0
L08	Regular Grid	12,000	9,000	0.0	0.0	0.0
L09	Regular Grid	12,000	12,000	0.0	0.0	0.0
M01	Regular Grid	15,000	-12,000	0.0	0.0	0.0
M02	Regular Grid	15,000	-9,000	0.0	0.0	0.0
M03	Regular Grid	15,000	-6,000	0.0	0.0	0.0
M04	Regular Grid	15,000	-3,000	0.0	0.0	0.0
M05	Regular Grid	15,000	0	0.0	0.0	0.0
M06	Regular Grid	15,000	3,000	0.0	0.0	0.0
M07	Regular Grid	15,000	6,000	0.0	0.0	0.0
M08	Regular Grid	15,000	9,000	0.0	0.0	0.0
M09	Regular Grid	15,000	12,000	0.0	0.0	0.0
N01	Regular Grid	18,000	-12,000	0.0	0.0	0.0
N02	Regular Grid	18,000	-9,000	0.0	0.0	0.0
N03	Regular Grid	18,000	-6,000	0.0	0.0	0.0
N04	Regular Grid	18,000	-3,000	0.0	0.0	0.0
N05	Regular Grid	18,000	0	0.0	0.0	0.0
N06	Regular Grid	18,000	3,000	0.0	0.0	0.0
N07	Regular Grid	18,000	6,000	0.0	0.0	0.0
N08	Regular Grid	18,000	9,000	0.0	0.0	0.0
N09	Regular Grid	18,000	12,000	0.0	0.0	0.0
O01	Regular Grid	21,000	-12,000	0.0	0.0	0.0
O02	Regular Grid	21,000	-9,000	0.0	0.0	0.0
O03	Regular Grid	21,000	-6,000	0.0	0.0	0.0
O04	Regular Grid	21,000	-3,000	0.0	0.0	0.0
O05	Regular Grid	21,000	0	0.0	0.0	0.0
O06	Regular Grid	21,000	3,000	0.0	0.0	0.0
O07	Regular Grid	21,000	6,000	0.0	0.0	0.0
O08	Regular Grid	21,000	9,000	0.0	0.0	0.0
O09	Regular Grid	21,000	12,000	0.0	0.0	0.0
P01	Regular Grid	24,000	-12,000	0.0	0.0	0.0
P02	Regular Grid	24,000	-9,000	0.0	0.0	0.0
P03	Regular Grid	24,000	-6,000	0.0	0.0	0.0
P04	Regular Grid	24,000	-3,000	0.0	0.0	0.0
P05	Regular Grid	24,000	0	0.0	0.0	0.0
P06	Regular Grid	24,000	3,000	0.0	0.0	0.0
P07	Regular Grid	24,000	6,000	0.0	0.0	0.0
P08	Regular Grid	24,000	9,000	0.0	0.0	0.0
P09	Regular Grid	24,000	12,000	0.0	0.0	0.0
Q01	Regular Grid	27,000	-12,000	0.0	0.0	0.0
Q02	Regular Grid	27,000	-9,000	0.0	0.0	0.0
Q03	Regular Grid	27,000	-6,000	0.0	0.0	0.0
Q04	Regular Grid	27,000	-3,000	0.0	0.0	0.0
Q05	Regular Grid	27,000	0	0.0	0.0	0.0
Q06	Regular Grid	27,000	3,000	0.0	0.0	0.0
Q07	Regular Grid	27,000	6,000	0.0	0.0	0.0
Q08	Regular Grid	27,000	9,000	0.0	0.0	0.0
Q09	Regular Grid	27,000	12,000	0.0	0.0	0.0
R01	Regular Grid	30,000	-12,000	0.0	0.0	0.0
R02	Regular Grid	30,000	-9,000	0.0	0.0	0.0
R03	Regular Grid	30,000	-6,000	0.0	0.0	0.0
R04	Regular Grid	30,000	-3,000	0.0	0.0	0.0
R05	Regular Grid	30,000	0	0.0	0.0	0.0

Table M-16 (3 of 12)

Location Points TA-95 Values and Comparison: Baseline 2003 and Project (2005) Conditions

Grid Cell ID	Use	X Dist. (feet)[1]	Y Dist. (feet)[1]	2003 TA-95	Project (2005) TA-95	Difference
R06	Regular Grid	30,000	3,000	0.0	0.0	0.0
R07	Regular Grid	30,000	6,000	0.0	0.0	0.0
R08	Regular Grid	30,000	9,000	0.0	0.0	0.0
R09	Regular Grid	30,000	12,000	0.0	0.0	0.0
S01	Regular Grid	33,000	-12,000	0.0	0.0	0.0
S02	Regular Grid	33,000	-9,000	0.0	0.0	0.0
S03	Regular Grid	33,000	-6,000	0.0	0.0	0.0
S04	Regular Grid	33,000	-3,000	0.0	0.0	0.0
S05	Regular Grid	33,000	0	0.0	0.0	0.0
S06	Regular Grid	33,000	3,000	0.0	0.0	0.0
S07	Regular Grid	33,000	6,000	0.0	0.0	0.0
S08	Regular Grid	33,000	9,000	0.0	0.0	0.0
S09	Regular Grid	33,000	12,000	0.0	0.0	0.0
T01	Regular Grid	36,000	-12,000	0.0	0.0	0.0
T02	Regular Grid	36,000	-9,000	0.0	0.0	0.0
T03	Regular Grid	36,000	-6,000	0.0	0.0	0.0
T04	Regular Grid	36,000	-3,000	0.0	0.0	0.0
T05	Regular Grid	36,000	0	0.0	0.0	0.0
T06	Regular Grid	36,000	3,000	0.0	0.0	0.0
T07	Regular Grid	36,000	6,000	0.0	0.0	0.0
T08	Regular Grid	36,000	9,000	0.0	0.0	0.0
T09	Regular Grid	36,000	12,000	0.0	0.0	0.0
U01	Regular Grid	39,000	-12,000	0.0	0.0	0.0
U02	Regular Grid	39,000	-9,000	0.0	0.0	0.0
U03	Regular Grid	39,000	-6,000	0.0	0.0	0.0
U04	Regular Grid	39,000	-3,000	0.0	0.0	0.0
U05	Regular Grid	39,000	0	0.0	0.0	0.0
U06	Regular Grid	39,000	3,000	0.0	0.0	0.0
U07	Regular Grid	39,000	6,000	0.0	0.0	0.0
U08	Regular Grid	39,000	9,000	0.0	0.0	0.0
U09	Regular Grid	39,000	12,000	0.0	0.0	0.0
V01	Regular Grid	42,000	-12,000	0.0	0.0	0.0
V02	Regular Grid	42,000	-9,000	0.0	0.0	0.0
V03	Regular Grid	42,000	-6,000	0.0	0.0	0.0
V04	Regular Grid	42,000	-3,000	0.0	0.0	0.0
V05	Regular Grid	42,000	0	0.0	0.0	0.0
V06	Regular Grid	42,000	3,000	0.0	0.0	0.0
V07	Regular Grid	42,000	6,000	0.0	0.0	0.0
V08	Regular Grid	42,000	9,000	0.0	0.0	0.0
V09	Regular Grid	42,000	12,000	0.0	0.0	0.0
W01	Regular Grid	45,000	-12,000	0.0	0.0	0.0
W02	Regular Grid	45,000	-9,000	0.0	0.0	0.0
W03	Regular Grid	45,000	-6,000	0.0	0.0	0.0
W04	Regular Grid	45,000	-3,000	0.0	0.0	0.0
W05	Regular Grid	45,000	0	0.0	0.0	0.0
W06	Regular Grid	45,000	3,000	0.0	0.0	0.0
W07	Regular Grid	45,000	6,000	0.0	0.0	0.0
W08	Regular Grid	45,000	9,000	0.0	0.0	0.0
W09	Regular Grid	45,000	12,000	0.0	0.0	0.0
X01	Regular Grid	48,000	-12,000	0.0	0.0	0.0
X02	Regular Grid	48,000	-9,000	0.0	0.0	0.0
X03	Regular Grid	48,000	-6,000	0.0	0.0	0.0
X04	Regular Grid	48,000	-3,000	0.0	0.0	0.0

Table M-16 (4 of 12)

Location Points TA-95 Values and Comparison: Baseline 2003 and Project (2005) Conditions

Grid Cell ID	Use	X Dist. (feet)[1]	Y Dist. (feet)[1]	2003 TA-95	Project (2005) TA-95	Difference
X05	Regular Grid	48,000	0	0.0	0.0	0.0
X06	Regular Grid	48,000	3,000	0.0	0.0	0.0
X07	Regular Grid	48,000	6,000	0.0	0.0	0.0
X08	Regular Grid	48,000	9,000	0.0	0.0	0.0
X09	Regular Grid	48,000	12,000	0.0	0.0	0.0
Y01	Regular Grid	51,000	-12,000	0.0	0.0	0.0
Y02	Regular Grid	51,000	-9,000	0.0	0.0	0.0
Y03	Regular Grid	51,000	-6,000	0.0	0.0	0.0
Y04	Regular Grid	51,000	-3,000	0.0	0.0	0.0
Y05	Regular Grid	51,000	0	0.0	0.0	0.0
Y06	Regular Grid	51,000	3,000	0.0	0.0	0.0
Y07	Regular Grid	51,000	6,000	0.0	0.0	0.0
Y08	Regular Grid	51,000	9,000	0.0	0.0	0.0
Y09	Regular Grid	51,000	12,000	0.0	0.0	0.0
Z01	Regular Grid	54,000	-12,000	0.0	0.0	0.0
Z02	Regular Grid	54,000	-9,000	0.0	0.0	0.0
Z03	Regular Grid	54,000	-6,000	0.0	0.0	0.0
Z04	Regular Grid	54,000	-3,000	0.0	0.0	0.0
Z05	Regular Grid	54,000	0	0.0	0.0	0.0
Z06	Regular Grid	54,000	3,000	0.0	0.0	0.0
Z07	Regular Grid	54,000	6,000	0.0	0.0	0.0
Z08	Regular Grid	54,000	9,000	0.0	0.0	0.0
Z09	Regular Grid	54,000	12,000	0.0	0.0	0.0
CH006	Church	18,362	851	0.0	0.0	0.0
CH008	Church	-1,056	-6,191	0.0	0.0	0.0
CH011	Church	33,776	-3,732	0.0	0.0	0.0
CH012	Church	34,672	611	0.0	0.0	0.0
CH019	Church	16,609	-6,394	0.0	0.0	0.0
CH020	Church	16,609	-5,892	0.0	0.0	0.0
CH022	Church	18,259	9,542	0.0	0.0	0.0
CH025	Church	16,984	-6,155	0.0	0.0	0.0
CH026	Church	772	5,897	0.0	0.0	0.0
CH030	Church	37,397	-3,562	0.0	0.0	0.0
CH031	Church	29,694	4,531	0.0	0.0	0.0
CH032	Church	34,999	-2,528	0.0	0.0	0.0
CH037	Church	12,173	2,634	0.0	0.0	0.0
CH044	Church	29,459	441	0.0	0.0	0.0
CH047	Church	36,169	6,797	0.0	0.0	0.0
CH048	Church	36,695	2,519	0.0	0.0	0.0
CH049	Church	29,734	8,749	0.0	0.0	0.0
CH052	Church	28,386	11,458	0.0	0.0	0.0
CH053	Church	32,138	10,827	0.0	0.0	0.0
CH056	Church	29,496	10,032	0.0	0.0	0.0
CH058	Church	37,445	-3,804	0.0	0.0	0.0
CH060	Church	37,453	1,503	0.0	0.0	0.0
CH062	Church	18,436	-9,362	0.0	0.0	0.0
CH067	Church	24,220	9,999	0.0	0.0	0.0
CH069	Church	24,032	-1,953	0.0	0.0	0.0
CH072	Church	36,144	10,802	0.0	0.0	0.0
CH075	Church	36,127	-1,223	0.0	0.0	0.0
CH076	Church	36,351	8,763	0.0	0.0	0.0
CH078	Church	30,942	225	0.0	0.0	0.0
CH082	Church	15,556	4,179	0.0	0.0	0.0

Table M-16 (5 of 12)

Location Points TA-95 Values and Comparison: Baseline 2003 and Project (2005) Conditions

Grid Cell ID	Use	X Dist. (feet)[1]	Y Dist. (feet)[1]	2003 TA-95	Project (2005) TA-95	Difference
CH083	Church	-5,007	6,170	0.0	0.0	0.0
CH087	Church	15,502	10,235	0.0	0.0	0.0
CH094	Church	37,402	4,700	0.0	0.0	0.0
CH096	Church	33,100	4,191	0.0	0.0	0.0
CH097	Church	922	-6,751	0.0	0.0	0.0
CH098	Church	3,426	10,997	0.0	0.0	0.0
CH099	Church	15,214	-4,708	0.0	0.0	0.0
CH100	Church	16,819	5,275	0.0	0.0	0.0
CH101	Church	3,028	9,100	0.0	0.0	0.0
CH102	Church	29,435	-3,393	0.0	0.0	0.0
CH103	Church	33,060	9,231	0.0	0.0	0.0
CH107	Church	12,493	-6,171	0.0	0.0	0.0
CH108	Church	12,557	-6,505	0.0	0.0	0.0
CH109	Church	-7,997	6,637	0.0	0.0	0.0
CH116	Church	26,573	11,459	0.0	0.0	0.0
CH118	Church	34,682	5,288	0.0	0.0	0.0
CH119	Church	-3,523	-8,901	0.0	0.0	0.0
CH120	Church	-3,133	-5,122	0.0	0.0	0.0
CH121	Church	-1,025	-8,528	0.0	0.0	0.0
CH122	Church	-2,777	-7,154	0.0	0.0	0.0
CH129	Church	20,742	-3,140	0.0	0.0	0.0
CH132	Church	15,736	5,775	0.0	0.0	0.0
CH133	Church	27,851	1,067	0.0	0.0	0.0
CH135	Church	33,627	6,388	0.0	0.0	0.0
CH137	Church	34,656	-3,968	0.0	0.0	0.0
CH139	Church	36,337	10,957	0.0	0.0	0.0
CH140	Church	34,661	-513	0.0	0.0	0.0
CH144	Church	30,061	-1,582	0.0	0.0	0.0
CH145	Church	37,669	-1,182	0.0	0.0	0.0
CH146	Church	13,494	8,321	0.0	0.0	0.0
CH150	Church	16,056	6,214	0.0	0.0	0.0
CH151	Church	16,044	5,617	0.0	0.0	0.0
CH156	Church	34,981	1,468	0.0	0.0	0.0
CH157	Church	4,879	6,462	0.0	0.0	0.0
CH158	Church	24,437	2,639	0.0	0.0	0.0
CH160	Church	12,198	7,451	0.0	0.0	0.0
CH162	Church	18,585	-9,335	0.0	0.0	0.0
CH163	Church	36,352	7,585	0.0	0.0	0.0
CH164	Church	17,219	5,679	0.0	0.0	0.0
CH165	Church	31,191	-1,517	0.0	0.0	0.0
CH166	Church	17,839	7,360	0.0	0.0	0.0
CH168	Church	2,715	9,777	0.0	0.0	0.0
CH172	Church	16,888	11,345	0.0	0.0	0.0
CH173	Church	20,347	-4,191	0.0	0.0	0.0
CH174	Church	37,440	7,189	0.0	0.0	0.0
CH175	Church	-4,960	6,402	0.0	0.0	0.0
CH177	Church	29,502	11,020	0.0	0.0	0.0
CH180	Church	37,667	5,420	0.0	0.0	0.0
CH182	Church	37,462	-1,152	0.0	0.0	0.0
CH183	Church	35,808	6,815	0.0	0.0	0.0
CH185	Church	32,290	4,655	0.0	0.0	0.0
CH186	Church	37,662	-2,735	0.0	0.0	0.0
CH188	Church	29,706	9,678	0.0	0.0	0.0

Table M-16 (6 of 12)

Location Points TA-95 Values and Comparison: Baseline 2003 and Project (2005) Conditions

Grid Cell ID	Use	X Dist. (feet)[1]	Y Dist. (feet)[1]	2003 TA-95	Project (2005) TA-95	Difference
CH189	Church	37,456	8,316	0.0	0.0	0.0
CH190	Church	15,769	-1,744	0.0	0.0	0.0
CH191	Church	37,440	3,115	0.0	0.0	0.0
CH193	Church	16,098	3,516	0.0	0.0	0.0
CH197	Church	36,141	-622	0.0	0.0	0.0
CH199	Church	32,312	-2,517	0.0	0.0	0.0
CH201	Church	30,178	11,450	0.0	0.0	0.0
CH205	Church	36,034	6,388	0.0	0.0	0.0
CH206	Church	32,298	-1,373	0.0	0.0	0.0
CH208	Church	34,964	-345	0.0	0.0	0.0
CH211	Church	36,174	2,481	0.0	0.0	0.0
CH213	Church	18,281	1,520	0.0	0.0	0.0
CH216	Church	32,313	1,911	0.0	0.0	0.0
CH218	Church	15,869	-951	0.0	0.0	0.0
CH219	Church	22,848	11,338	0.0	0.0	0.0
CH221	Church	23,975	6,427	0.0	0.0	0.0
CH222	Church	15,086	-9,405	0.0	0.0	0.0
CH225	Church	13,793	-7,039	0.0	0.0	0.0
CH230	Church	32,151	4,322	0.0	0.0	0.0
CH231	Church	36,143	9,975	0.0	0.0	0.0
CH234	Church	36,895	6,381	0.0	0.0	0.0
CH235	Church	32,127	2,022	0.0	0.0	0.0
CH239	Church	29,501	6,867	0.0	0.0	0.0
CH240	Church	37,448	-2,742	0.0	0.0	0.0
CH241	Church	24,439	3,466	0.0	0.0	0.0
CH244	Church	37,681	8,609	0.0	0.0	0.0
CH247	Church	34,958	2,144	0.0	0.0	0.0
CH250	Church	28,704	-4,168	0.0	0.0	0.0
CH251	Church	13,890	6,115	0.0	0.0	0.0
CH254	Church	17,430	10,595	0.0	0.0	0.0
CH255	Church	12,359	3,858	0.0	0.0	0.0
CH256	Church	16,578	3,534	0.0	0.0	0.0
CH257	Church	15,548	-8,178	0.0	0.0	0.0
CH259	Church	14,539	12,155	0.0	0.0	0.0
CH260	Church	23,953	-3,330	0.0	0.0	0.0
CH261	Church	19,150	-3,057	0.0	0.0	0.0
CH262	Church	-3,362	-7,566	0.0	0.0	0.0
CH266	Church	16,872	3,711	0.0	0.0	0.0
CH267	Church	35,011	8,122	0.0	0.0	0.0
CH270	Church	31,466	6,365	0.0	0.0	0.0
CH273	Church	31,581	550	0.0	0.0	0.0
CH275	Church	34,643	11,454	0.0	0.0	0.0
CH276	Church	29,696	3,909	0.0	0.0	0.0
CH281	Church	33,441	3,079	0.0	0.0	0.0
CH282	Church	17,872	-2,898	0.0	0.0	0.0
CH284	Church	8,877	10,121	0.0	0.0	0.0
CH285	Church	6,222	7,425	0.0	0.0	0.0
CH289	Church	15,218	-1,808	0.0	0.0	0.0
CH290	Church	16,538	-2,345	0.0	0.0	0.0
CH294	Church	32,328	7,233	0.0	0.0	0.0
CH300	Church	33,630	2,854	0.0	0.0	0.0
CH303	Church	29,690	5,046	0.0	0.0	0.0
CH304	Church	6,157	8,380	0.0	0.0	0.0

Table M-16 (7 of 12)

Location Points TA-95 Values and Comparison: Baseline 2003 and Project (2005) Conditions

Grid Cell ID	Use	X Dist. (feet)[1]	Y Dist. (feet)[1]	2003 TA-95	Project (2005) TA-95	Difference
CH308	Church	26,723	11,459	0.0	0.0	0.0
CH311	Church	29,706	9,728	0.0	0.0	0.0
CH313	Church	34,942	2,884	0.0	0.0	0.0
CH316	Church	33,455	6,366	0.0	0.0	0.0
CH321	Church	26,844	6,592	0.0	0.0	0.0
CH322	Church	24,378	5,651	0.0	0.0	0.0
CH323	Church	32,144	3,499	0.0	0.0	0.0
CH329	Church	33,816	6,120	0.0	0.0	0.0
CH332	Church	29,987	1,050	0.0	0.0	0.0
CH334	Church	-3,362	-8,211	0.0	0.0	0.0
CH335	Church	35,032	9,135	0.0	0.0	0.0
CH338	Church	34,658	-3,718	0.0	0.0	0.0
CH340	Church	37,438	6,936	0.0	0.0	0.0
CH343	Church	15,571	5,631	0.0	0.0	0.0
CH346	Church	34,683	2,176	0.0	0.0	0.0
CH350	Church	36,465	11,455	0.0	0.0	0.0
CH351	Church	37,457	8,790	0.0	0.0	0.0
CH352	Church	36,665	11,456	0.0	0.0	0.0
CH354	Church	35,029	10,381	0.0	0.0	0.0
CH359	Church	34,660	-759	0.0	0.0	0.0
CH361	Church	-297	10,928	0.0	0.0	0.0
CH364	Church	-3,000	-5,050	0.0	0.0	0.0
CH366	Church	34,663	-2,477	0.0	0.0	0.0
CH368	Church	29,105	-1,896	0.0	0.0	0.0
CH375	Church	17,910	-9,299	0.0	0.0	0.0
CH378	Church	32,154	5,163	0.0	0.0	0.0
CH383	Church	23,176	6,146	0.0	0.0	0.0
CH388	Church	29,674	7,848	0.0	0.0	0.0
CH390	Church	32,137	10,569	0.0	0.0	0.0
CH392	Church	33,524	-107	0.0	0.0	0.0
CH393	Church	29,454	197	0.0	0.0	0.0
CH395	Church	20	7,468	0.0	0.0	0.0
CH396	Church	-3,363	-7,999	0.0	0.0	0.0
CH397	Church	-3,153	6,521	0.0	0.0	0.0
CH402	Church	33,574	-393	0.0	0.0	0.0
CH405	Church	26,436	-4,141	0.0	0.0	0.0
CH408	Church	16,609	-6,117	0.0	0.0	0.0
CH411	Church	-5,649	6,168	0.0	0.0	0.0
CH413	Church	955	5,447	0.0	0.0	0.0
CH415	Church	-574	-8,529	0.0	0.0	0.0
CH416	Church	-3,520	-6,950	0.0	0.0	0.0
CH423	Church	34,438	6,123	0.0	0.0	0.0
CH427	Church	27,099	2,637	0.0	0.0	0.0
CH430	Church	29,435	-3,530	0.0	0.0	0.0
CH431	Church	26,113	11,458	0.0	0.0	0.0
CH432	Church	32,135	10,287	0.0	0.0	0.0
CH433	Church	34,981	4,271	0.0	0.0	0.0
CH434	Church	29,486	4,620	0.0	0.0	0.0
CH436	Church	36,665	6,526	0.0	0.0	0.0
CH438	Church	16,883	7,283	0.0	0.0	0.0
CH440	Church	21,860	-3,132	0.0	0.0	0.0
CH453	Church	30,531	6,362	0.0	0.0	0.0
CH457	Church	37,682	5,673	0.0	0.0	0.0

Table M-16 (8 of 12)

Location Points TA-95 Values and Comparison: Baseline 2003 and Project (2005) Conditions

Grid Cell ID	Use	X Dist. (feet)[1]	Y Dist. (feet)[1]	2003 TA-95	Project (2005) TA-95	Difference
CH459	Church	34,981	4,311	0.0	0.0	0.0
CH461	Church	2,474	-5,106	0.0	0.0	0.0
CH462	Church	37,658	2,565	0.0	0.0	0.0
CH463	Church	28,157	7,476	0.0	0.0	0.0
CH465	Church	29,437	-2,633	0.0	0.0	0.0
CH469	Church	36,307	9,187	0.0	0.0	0.0
CH470	Church	15,830	5,944	0.0	0.0	0.0
CH471	Church	34,666	3,437	0.0	0.0	0.0
CH472	Church	34,478	360	0.0	0.0	0.0
CH479	Church	29,687	3,172	0.0	0.0	0.0
CH480	Church	36,132	8,126	0.0	0.0	0.0
CH481	Church	6,983	6,070	0.0	0.0	0.0
CH482	Church	35,540	2,955	0.0	0.0	0.0
CH485	Church	37,466	9,880	0.0	0.0	0.0
CH493	Church	36,143	9,513	0.0	0.0	0.0
CH497	Church	12,760	12,329	0.0	0.0	0.0
CH500	Church	29,680	2,945	0.0	0.0	0.0
CH503	Church	-2,777	-7,028	0.0	0.0	0.0
CH507	Church	38,086	-1,785	0.0	0.0	0.0
CH509	Church	34,671	8,932	0.0	0.0	0.0
CH513	Church	17,184	8,722	0.0	0.0	0.0
CH518	Church	5,989	6,176	0.0	0.0	0.0
CH519	Church	-4,691	6,400	0.0	0.0	0.0
CH520	Church	3,327	10,191	0.0	0.0	0.0
CH521	Church	427	8,681	0.0	0.0	0.0
CH522	Church	13,607	1,267	0.0	0.0	0.0
CH524	Church	34,683	4,171	0.0	0.0	0.0
CH529	Church	37,462	-1,270	0.0	0.0	0.0
CH532	Church	23,813	9,141	0.0	0.0	0.0
HOS05	Hospital	15,713	-5,495	0.0	0.0	0.0
HOS07	Hospital	15,334	-5,123	0.0	0.0	0.0
HOS09	Hospital	23,095	8,420	0.0	0.0	0.0
HOS10	Hospital	18,684	3,896	0.0	0.0	0.0
HOS11	Hospital	18,500	8,884	0.0	0.0	0.0
HOS12	Hospital	13,791	-5,987	0.0	0.0	0.0
HOS13	Hospital	29,985	5,901	0.0	0.0	0.0
HOS15	Hospital	17,190	1,285	0.0	0.0	0.0
HOS16	Hospital	13,553	7,081	0.0	0.0	0.0
HOS18	Hospital	13,797	-3,917	0.0	0.0	0.0
HOS19	Hospital	17,676	2,790	0.0	0.0	0.0
LIB01	Library	15,816	-9,101	0.0	0.0	0.0
LIB02	Library	15,450	7,185	0.0	0.0	0.0
LIB03	Library	24,178	-3,305	0.0	0.0	0.0
LIB04	Library	23,842	6,513	0.0	0.0	0.0
LIB05	Library	3,672	4,468	0.0	0.0	0.0
LIB06	Library	32,350	-1,151	0.0	0.0	0.0
LIB07	Library	16,622	-1,444	0.0	0.0	0.0
LIB10	Library	37,424	2,049	0.0	0.0	0.0
LIB11	Library	-3,147	-6,769	0.0	0.0	0.0
LIB13	Library	-3,179	6,210	0.0	0.0	0.0
NH003	Hospital, Convalescent	29,488	7,434	0.0	0.0	0.0
NH004	Hospital, Convalescent	34,331	5,967	0.0	0.0	0.0

Table M-16 (9 of 12)

Location Points TA-95 Values and Comparison: Baseline 2003 and Project (2005) Conditions

Grid Cell ID	Use	X Dist. (feet)[1]	Y Dist. (feet)[1]	2003 TA-95	Project (2005) TA-95	Difference
NH007	Hospital, Convalescent	17,108	11,062	0.0	0.0	0.0
NH008	Hospital, Convalescent	20,727	-198	0.0	0.0	0.0
NH009	Hospital, Convalescent	13,755	-5,511	0.0	0.0	0.0
NH010	Hospital, Convalescent	34,543	11,454	0.0	0.0	0.0
NH012	Hospital, Convalescent	23,851	6,390	0.0	0.0	0.0
NH013	Hospital, Convalescent	16,922	7,743	0.0	0.0	0.0
NH015	Hospital, Convalescent	34,661	-443	0.0	0.0	0.0
NH017	Hospital, Convalescent	34,326	6,502	0.0	0.0	0.0
NH018	Hospital, Convalescent	17,706	7,119	0.0	0.0	0.0
NH019	Hospital, Convalescent	14,640	6,647	0.0	0.0	0.0
NH022	Hospital, Convalescent	35,884	6,388	0.0	0.0	0.0
NH023	Hospital, Convalescent	13,941	-7,834	0.0	0.0	0.0
NH025	Hospital, Convalescent	15,569	12,004	0.0	0.0	0.0
NH026	Hospital, Convalescent	26,823	2,036	0.0	0.0	0.0
NH027	Hospital, Convalescent	18,773	-9,296	0.0	0.0	0.0
NH028	Hospital, Convalescent	14,396	6,645	0.0	0.0	0.0
NH033	Hospital, Convalescent	12,509	8,161	0.0	0.0	0.0
NH037	Hospital, Convalescent	34,990	-3,870	0.0	0.0	0.0
NH038	Hospital, Convalescent	17,775	10,041	0.0	0.0	0.0
NH040	Hospital, Convalescent	22,738	6,430	0.0	0.0	0.0
NH041	Hospital, Convalescent	37,456	8,531	0.0	0.0	0.0
NH042	Hospital, Convalescent	34,661	7,463	0.0	0.0	0.0
NH043	Hospital, Convalescent	-7,595	6,080	0.0	0.0	0.0
NH044	Hospital, Convalescent	18,202	2,864	0.0	0.0	0.0
NH045	Hospital, Convalescent	15,756	-5,107	0.0	0.0	0.0
PBS006	Public School	27,281	10,743	0.0	0.0	0.0
PBS009	Public School	34,094	2,313	0.0	0.0	0.0
PBS011	Public School	-2,515	-6,204	0.0	0.0	0.0
PBS017	Public School	14,818	3,297	0.0	0.0	0.0
PBS018	Public School	35,904	3,121	0.0	0.0	0.0
PBS019	Public School	12,212	-1,924	0.0	0.0	0.0
PBS021	Public School	911	-6,459	0.0	0.0	0.0
PBS022	Public School	13,419	10,800	0.0	0.0	0.0
PBS023	Public School	15,909	-7,797	0.0	0.0	0.0
PBS024	Public School	26,296	-2,314	0.0	0.0	0.0
PBS026	Public School	23,650	-1,034	0.0	0.0	0.0
PBS027	Public School	172	11,002	0.0	0.0	0.0
PBS028	Public School	15,282	7,661	0.0	0.0	0.0
PBS029	Public School	25,282	8,750	0.0	0.0	0.0
PBS031	Public School	-1,003	-8,864	0.0	0.0	0.0
PBS032	Public School	-3,780	-6,609	0.0	0.0	0.0
PBS033	Public School	14,499	-7,413	0.0	0.0	0.0
PBS035	Public School	12,046	-585	0.1	2.3	2.2
PBS036	Public School	37,216	-3,113	0.0	0.0	0.0
PBS040	Public School	31,524	-2,029	0.0	0.0	0.0
PBS041	Public School	32,406	-2,584	0.0	0.0	0.0
PBS042	Public School	12,992	-8,938	0.0	0.0	0.0
PBS047	Public School	13,295	5,451	0.0	0.0	0.0
PBS048	Public School	13,951	6,710	0.0	0.0	0.0
PBS049	Public School	-1,068	-4,601	0.0	0.0	0.0
PBS050	Public School	14,856	6,115	0.0	0.0	0.0
PBS054	Public School	16,704	9,736	0.0	0.0	0.0
PBS055	Public School	14,713	3	0.0	0.0	0.0

Table M-16 (10 of 12)

Location Points TA-95 Values and Comparison: Baseline 2003 and Project (2005) Conditions

Grid Cell ID	Use	X Dist. (feet)[1]	Y Dist. (feet)[1]	2003 TA-95	Project (2005) TA-95	Difference
PBS058	Public School	10,708	-7,313	0.0	0.0	0.0
PBS059	Public School	18,679	5,302	0.0	0.0	0.0
PBS061	Public School	419	7,093	0.0	0.0	0.0
PBS062	Public School	968	5,128	0.0	0.0	0.0
PBS086	Public School	38,040	1,964	0.0	0.0	0.0
PBS090	Public School	30,414	5,411	0.0	0.0	0.0
PBS091	Public School	11,903	-2,672	0.0	0.0	0.0
PBS098	Public School	35,517	9,615	0.0	0.0	0.0
PBS099	Public School	-4,391	5,512	0.0	0.0	0.0
PBS100	Public School	36,630	5,989	0.0	0.0	0.0
PBS101	Public School	29,058	2,028	0.0	0.0	0.0
PBS102	Public School	17,390	-2,628	0.0	0.0	0.0
PBS105	Public School	11,840	4,627	0.0	0.0	0.0
PBS106	Public School	808	9,178	0.0	0.0	0.0
PBS107	Public School	-8,294	5,322	0.0	0.0	0.0
PBS111	Public School	32,576	10,502	0.0	0.0	0.0
PBS113	Public School	34,981	4,193	0.0	0.0	0.0
PBS117	Public School	24,929	3,265	0.0	0.0	0.0
PBS120	Public School	-6,877	5,485	0.0	0.0	0.0
PBS121	Public School	-6,871	5,484	0.0	0.0	0.0
PBS122	Public School	5,515	8,945	0.0	0.0	0.0
PBS123	Public School	18,043	-527	0.0	0.0	0.0
PBS125	Public School	33,837	-1,843	0.0	0.0	0.0
PBS127	Public School	21,457	-3,062	0.0	0.0	0.0
PBS128	Public School	18,588	-5,939	0.0	0.0	0.0
PBS140	Public School	22,487	-1,032	0.0	0.0	0.0
PBS201	Public School	23,648	-1,395	0.0	0.0	0.0
PRK01	Park	11,566	6,133	0.0	0.0	0.0
PRK02	Park	5,414	4,921	0.0	0.0	0.0
PRK03	Park	21,160	-3,063	0.0	0.0	0.0
PRK05	Park	9,350	-9,074	0.0	0.0	0.0
PRK07	Park	-13,479	6,711	0.0	0.0	0.0
PRK10	Park	-5,023	-4,415	0.1	0.0	-0.1
PRK11	Park	-1,802	-8,136	0.0	0.0	0.0
PRK13	Park	-225	-8,037	0.0	0.0	0.0
PRK15	Park	1,472	-5,400	0.0	0.0	0.0
PRK16	Park	1,719	-7,830	0.0	0.0	0.0
PRK18	Park	13,866	-7,408	0.0	0.0	0.0
PRK201	Park	-2,921	5,657	0.0	0.0	0.0
PRK32	Park	25,609	7,591	0.0	0.0	0.0
PRK41	Park	15,768	6,307	0.0	0.0	0.0
PRK42	Park	13,359	1,894	0.0	0.0	0.0
PRK43	Park	23,171	4,140	0.0	0.0	0.0
PRK45	Park	28,752	5,597	0.0	0.0	0.0
PRK46	Park	36,620	5,021	0.0	0.0	0.0
PRK52	Park	14,558	-1,937	0.0	0.0	0.0
PRK56	Park	28,407	1,919	0.0	0.0	0.0
PRK59	Park	18,760	7,140	0.0	0.0	0.0
PRK60	Park	13,470	9,437	0.0	0.0	0.0
PRK62	Park	2,383	-6,026	0.0	0.0	0.0
PRK65	Park	-6,967	-8,394	0.0	0.0	0.0
PRK67	Park	-10,639	716	0.3	1.6	1.3
PRK68	Park	-761	5,208	0.0	0.0	0.0

Table M-16 (11 of 12)

Location Points TA-95 Values and Comparison: Baseline 2003 and Project (2005) Conditions

Grid Cell ID	Use	X Dist. (feet)[1]	Y Dist. (feet)[1]	2003 TA-95	Project (2005) TA-95	Difference
PRK70	Park	34,964	-416	0.0	0.0	0.0
PRK71	Park	-4,883	-7,930	0.0	0.0	0.0
PRK72	Park	-3,078	-6,614	0.0	0.0	0.0
PVS001	Private School	37,733	11,384	0.0	0.0	0.0
PVS002	Private School	37,336	-3,455	0.0	0.0	0.0
PVS003	Private School	34,483	5,967	0.0	0.0	0.0
PVS004	Private School	27,097	2,468	0.0	0.0	0.0
PVS007	Private School	-7,778	4,626	0.0	0.0	0.0
PVS011	Private School	833	5,679	0.0	0.0	0.0
PVS012	Private School	771	5,989	0.0	0.0	0.0
PVS017	Private School	34,119	6,123	0.0	0.0	0.0
PVS025	Private School	12,977	12,319	0.0	0.0	0.0
PVS026	Private School	36,140	6,964	0.0	0.0	0.0
PVS028	Private School	24,379	5,761	0.0	0.0	0.0
PVS029	Private School	23,982	7,178	0.0	0.0	0.0
PVS030	Private School	28,850	11,455	0.0	0.0	0.0
PVS031	Private School	-12,447	6,370	0.0	0.0	0.0
PVS033	Private School	34,984	5,635	0.0	0.0	0.0
PVS034	Private School	29,461	-1,469	0.0	0.0	0.0
PVS035	Private School	34,140	9,211	0.0	0.0	0.0
PVS036	Private School	25,423	11,457	0.0	0.0	0.0
PVS037	Private School	29,435	-516	0.0	0.0	0.0
PVS044	Private School	13,506	6,729	0.0	0.0	0.0
PVS046	Private School	29,009	-4,204	0.0	0.0	0.0
PVS048	Private School	-501	-8,326	0.0	0.0	0.0
PVS049	Private School	34,967	2,020	0.0	0.0	0.0
PVS051	Private School	16,298	5,790	0.0	0.0	0.0
PVS054	Private School	32,159	8,982	0.0	0.0	0.0
PVS055	Private School	18,415	5,475	0.0	0.0	0.0
PVS056	Private School	34,709	4,608	0.0	0.0	0.0
PVS060	Private School	6,258	8,224	0.0	0.0	0.0
PVS062	Private School	19,294	-197	0.0	0.0	0.0
PVS064	Private School	13,310	7,076	0.0	0.0	0.0
PVS065	Private School	33,672	6,369	0.0	0.0	0.0
PVS066	Private School	14,716	11,128	0.0	0.0	0.0
PVS067	Private School	32,753	-466	0.0	0.0	0.0
PVS069	Private School	13,205	6,854	0.0	0.0	0.0
PVS070	Private School	15,369	3,722	0.0	0.0	0.0
PVS071	Private School	2,864	13,792	0.0	0.0	0.0
PVS073	Private School	24,503	5,600	0.0	0.0	0.0
PVS074	Private School	24,091	6,749	0.0	0.0	0.0
PVS077	Private School	12,602	-226	0.0	1.2	1.2
PVS081	Private School	29,676	2,047	0.0	0.0	0.0
PVS082	Private School	32,177	6,695	0.0	0.0	0.0
PVS083	Private School	17,478	5,970	0.0	0.0	0.0
PVS084	Private School	16,261	-881	0.0	0.0	0.0
PVS085	Private School	32,138	10,688	0.0	0.0	0.0
PVS086	Private School	36,351	8,881	0.0	0.0	0.0
PVS087	Private School	32,298	-1,596	0.0	0.0	0.0
PVS091	Private School	27,180	2,649	0.0	0.0	0.0
PVS092	Private School	18,568	9,623	0.0	0.0	0.0
PVS093	Private School	-5,793	5,899	0.0	0.0	0.0
PVS099	Private School	22,860	11,024	0.0	0.0	0.0

Table M-16 (12 of 12)

Location Points TA-95 Values and Comparison: Baseline 2003 and Project (2005) Conditions

Grid Cell ID	Use	X Dist. (feet)[1]	Y Dist. (feet)[1]	2003 TA-95	Project (2005) TA-95	Difference
PVS101	Private School	29,432	-911	0.0	0.0	0.0
PVS103	Private School	3,278	9,736	0.0	0.0	0.0
PVS104	Private School	9,240	3,525	0.0	0.0	0.0
PVS105	Private School	14,468	-9,493	0.0	0.0	0.0
PVS106	Private School	26,663	6,419	0.0	0.0	0.0
PVS107	Private School	3,658	5,088	0.0	0.0	0.0
PVS108	Private School	23,359	6,499	0.0	0.0	0.0
PVS109	Private School	18,639	3,216	0.0	0.0	0.0
PVS110	Private School	-573	-8,780	0.0	0.0	0.0
PVS111	Private School	16,874	-6,105	0.0	0.0	0.0
PBS114	Private School	9,738	3,976	0.0	0.0	0.0
PBS116	Private School	8,575	4,739	0.0	0.0	0.0
PVS138	Private School	-2,901	10,004	0.0	0.0	0.0

Note: TA-95 = Total number of minutes per day that exceed 75 decibels at indicated location.

1/ The sites are located by X and Y coordinates in feet. Each X and Y value is a distance measured in feet from the airport reference point on the airport (near the Tom Bradley International Terminal. This type of coordinate system is called the Cartesian or rectangular coordinate system. This system is commonly defined by two axes at right angles (two lines that form a 90-degree angle to each other and are perpendicular) forming a plane (xy plane). The horizontal (moving left or right along the plane) axis is called the x-axis. The opposite is called the vertical (moving up or down along the plane) axis, which is called the y-axis. The point of intersection (where both the x and y axes meet) is called the origin point (depicted as 0,0 point). A unit of length is used to mark along the x and y axes, which forms a grid. To specify a particular point on a two dimensional coordinate system, you indicate the x unit first, followed by the y unit in the form (x,y), an ordered pair. The intersection of the two x-y axes creates four quadrants-northeast, southeast, southwest and northwest. In the northeast quadrant, values are (x,y), and southeast:(-x,y), southwest:(-x,-y) and northwest:(x,-y).

Source: Ricondo & Associates, Inc., 2004; Based on Landrum and Brown, 2002 Grids – Final LAX Master Plan EIS/EIR
Prepared by: Ricondo & Associates, Inc.

Table M-17 (1 of 12)

Location Points L_{eq} Values and Comparison: Baseline 2003 and Project (2005) Conditions

Grid Cell ID	Use	X Dist. (feet)[1]	Y Dist. (feet)[1]	2003 L_{eq}	Project (2005) L_{eq}	Difference
C08	Regular Grid	-15,000	9,000	47.3	48.9	1.6
C09	Regular Grid	-15,000	12,000	43.3	44.7	1.4
D06	Regular Grid	-12,000	3,000	64.0	66.5	2.5
D07	Regular Grid	-12,000	6,000	54.0	55.9	1.9
D08	Regular Grid	-12,000	9,000	48.0	49.6	1.6
D09	Regular Grid	-12,000	12,000	43.9	45.2	1.3
E07	Regular Grid	-9,000	6,000	55.1	56.8	1.7
E08	Regular Grid	-9,000	9,000	48.7	50.1	1.4
E09	Regular Grid	-9,000	12,000	44.5	45.6	1.1
F02	Regular Grid	-6,000	-9,000	53.1	52.4	-0.7
F03	Regular Grid	-6,000	-6,000	61.7	60.3	-1.4
F07	Regular Grid	-6,000	6,000	55.1	57.1	2.0
F08	Regular Grid	-6,000	9,000	48.7	50.2	1.5
F09	Regular Grid	-6,000	12,000	44.6	45.8	1.2
G01	Regular Grid	-3,000	-12,000	47.3	47.1	-0.2
G02	Regular Grid	-3,000	-9,000	52.3	51.7	-0.6
G03	Regular Grid	-3,000	-6,000	60.4	59.2	-1.2
G07	Regular Grid	-3,000	6,000	54.2	56.5	2.3
G08	Regular Grid	-3,000	9,000	48.7	50.4	1.7
G09	Regular Grid	-3,000	12,000	44.9	46.2	1.3
H01	Regular Grid	0	-12,000	46.7	46.3	-0.4
H02	Regular Grid	0	-9,000	51.4	50.6	-0.8
H03	Regular Grid	0	-6,000	58.6	57.5	-1.1
H07	Regular Grid	0	6,000	56.3	58.7	2.4
H08	Regular Grid	0	9,000	50.0	51.9	1.9
H09	Regular Grid	0	12,000	45.8	47.4	1.6
I01	Regular Grid	3,000	-12,000	46.1	45.6	-0.5
I02	Regular Grid	3,000	-9,000	50.2	49.5	-0.7
I03	Regular Grid	3,000	-6,000	56.0	55.0	-1.0
I07	Regular Grid	3,000	6,000	57.2	59.4	2.2
I08	Regular Grid	3,000	9,000	50.5	52.4	1.9
I09	Regular Grid	3,000	12,000	46.1	47.7	1.6
J01	Regular Grid	6,000	-12,000	45.7	45.0	-0.7
J02	Regular Grid	6,000	-9,000	49.7	48.7	-1.0
J03	Regular Grid	6,000	-6,000	55.3	53.9	-1.4
J07	Regular Grid	6,000	6,000	55.2	56.6	1.4
J08	Regular Grid	6,000	9,000	49.7	51.0	1.3
J09	Regular Grid	6,000	12,000	46.0	47.0	1.0
K01	Regular Grid	9,000	-12,000	45.8	44.7	-1.1
K02	Regular Grid	9,000	-9,000	49.9	48.5	-1.4
K03	Regular Grid	9,000	-6,000	55.6	54.0	-1.6
K05	Regular Grid	9,000	0	71.4	70.8	-0.6
K07	Regular Grid	9,000	6,000	56.5	57.5	1.0
K08	Regular Grid	9,000	9,000	49.1	49.9	0.8
K09	Regular Grid	9,000	12,000	45.4	46.2	0.8
L01	Regular Grid	12,000	-12,000	45.1	43.8	-1.3
L02	Regular Grid	12,000	-9,000	48.5	47.2	-1.3
L03	Regular Grid	12,000	-6,000	52.8	51.4	-1.4
L04	Regular Grid	12,000	-3,000	58.5	56.7	-1.8
L05	Regular Grid	12,000	0	60.6	67.4	6.8
L06	Regular Grid	12,000	3,000	58.6	62.1	3.5

Table M-17 (2 of 12)

Location Points L_{eq} Values and Comparison: Baseline 2003 and Project (2005) Conditions

Grid Cell ID	Use	X Dist. (feet)[1]	Y Dist. (feet)[1]	2003 L_{eq}	Project (2005) L_{eq}	Difference
L07	Regular Grid	12,000	6,000	58.8	59.9	1.1
L08	Regular Grid	12,000	9,000	48.5	49.1	0.6
L09	Regular Grid	12,000	12,000	44.7	45.4	0.7
M01	Regular Grid	15,000	-12,000	43.5	42.3	-1.2
M02	Regular Grid	15,000	-9,000	46.3	45.1	-1.2
M03	Regular Grid	15,000	-6,000	49.3	48.3	-1.0
M04	Regular Grid	15,000	-3,000	55.4	53.2	-2.2
M05	Regular Grid	15,000	0	63.6	69.9	6.3
M06	Regular Grid	15,000	3,000	56.2	59.9	3.7
M07	Regular Grid	15,000	6,000	61.1	62.2	1.1
M08	Regular Grid	15,000	9,000	48.6	49.4	0.8
M09	Regular Grid	15,000	12,000	44.0	44.6	0.6
N01	Regular Grid	18,000	-12,000	41.9	40.8	-1.1
N02	Regular Grid	18,000	-9,000	44.1	43.1	-1.0
N03	Regular Grid	18,000	-6,000	46.7	46.0	-0.7
N04	Regular Grid	18,000	-3,000	53.7	51.8	-1.9
N05	Regular Grid	18,000	0	65.5	68.7	3.2
N06	Regular Grid	18,000	3,000	54.9	58.6	3.7
N07	Regular Grid	18,000	6,000	61.9	63.3	1.4
N08	Regular Grid	18,000	9,000	48.9	50.4	1.5
N09	Regular Grid	18,000	12,000	43.9	44.8	0.9
O01	Regular Grid	21,000	-12,000	40.3	39.4	-0.9
O02	Regular Grid	21,000	-9,000	42.3	41.5	-0.8
O03	Regular Grid	21,000	-6,000	45.1	44.5	-0.6
O04	Regular Grid	21,000	-3,000	52.5	50.8	-1.7
O05	Regular Grid	21,000	0	65.8	66.0	0.2
O06	Regular Grid	21,000	3,000	54.4	58.0	3.6
O07	Regular Grid	21,000	6,000	61.9	63.4	1.5
O08	Regular Grid	21,000	9,000	49.7	51.3	1.6
O09	Regular Grid	21,000	12,000	43.9	45.3	1.4
P01	Regular Grid	24,000	-12,000	38.9	38.1	-0.8
P02	Regular Grid	24,000	-9,000	40.9	40.3	-0.6
P03	Regular Grid	24,000	-6,000	44.1	43.6	-0.5
P04	Regular Grid	24,000	-3,000	51.3	50.0	-1.3
P05	Regular Grid	24,000	0	64.9	63.5	-1.4
P06	Regular Grid	24,000	3,000	54.5	58.3	3.8
P07	Regular Grid	24,000	6,000	60.8	62.5	1.7
P08	Regular Grid	24,000	9,000	50.9	52.4	1.5
P09	Regular Grid	24,000	12,000	44.0	45.1	1.1
Q01	Regular Grid	27,000	-12,000	37.8	37.2	-0.6
Q02	Regular Grid	27,000	-9,000	39.8	39.5	-0.3
Q03	Regular Grid	27,000	-6,000	43.5	42.9	-0.6
Q04	Regular Grid	27,000	-3,000	50.3	49.2	-1.1
Q05	Regular Grid	27,000	0	63.0	61.3	-1.7
Q06	Regular Grid	27,000	3,000	55.3	59.5	4.2
Q07	Regular Grid	27,000	6,000	59.4	61.2	1.8
Q08	Regular Grid	27,000	9,000	52.5	53.9	1.4
Q09	Regular Grid	27,000	12,000	44.1	45.4	1.3
R01	Regular Grid	30,000	-12,000	36.7	36.5	-0.2
R02	Regular Grid	30,000	-9,000	39.0	38.8	-0.2
R03	Regular Grid	30,000	-6,000	42.8	42.2	-0.6
R04	Regular Grid	30,000	-3,000	49.3	48.3	-1.0
R05	Regular Grid	30,000	0	60.8	59.3	-1.5

Table M-17 (3 of 12)

Location Points L_{eq} Values and Comparison: Baseline 2003 and Project (2005) Conditions

Grid Cell ID	Use	X Dist. (feet)[1]	Y Dist. (feet)[1]	2003 L_{eq}	Project (2005) L_{eq}	Difference
R06	Regular Grid	30,000	3,000	56.6	59.8	3.2
R07	Regular Grid	30,000	6,000	57.9	59.9	2.0
R08	Regular Grid	30,000	9,000	53.5	54.9	1.4
R09	Regular Grid	30,000	12,000	44.5	46.1	1.6
S01	Regular Grid	33,000	-12,000	35.9	35.9	0.0
S02	Regular Grid	33,000	-9,000	38.3	38.0	-0.3
S03	Regular Grid	33,000	-6,000	42.1	41.6	-0.5
S04	Regular Grid	33,000	-3,000	48.3	47.4	-0.9
S05	Regular Grid	33,000	0	58.9	57.5	-1.4
S06	Regular Grid	33,000	3,000	57.1	59.9	2.8
S07	Regular Grid	33,000	6,000	56.6	58.6	2.0
S08	Regular Grid	33,000	9,000	54.0	55.4	1.4
S09	Regular Grid	33,000	12,000	45.2	47.0	1.8
T01	Regular Grid	36,000	-12,000	35.2	35.3	0.1
T02	Regular Grid	36,000	-9,000	37.7	37.4	-0.3
T03	Regular Grid	36,000	-6,000	41.4	41.0	-0.4
T04	Regular Grid	36,000	-3,000	47.3	46.6	-0.7
T05	Regular Grid	36,000	0	57.2	56.0	-1.2
T06	Regular Grid	36,000	3,000	57.5	59.9	2.4
T07	Regular Grid	36,000	6,000	55.3	57.5	2.2
T08	Regular Grid	36,000	9,000	54.3	55.7	1.4
T09	Regular Grid	36,000	12,000	46.1	47.9	1.8
U01	Regular Grid	39,000	-12,000	34.6	34.7	0.1
U02	Regular Grid	39,000	-9,000	37.3	36.9	-0.4
U03	Regular Grid	39,000	-6,000	40.8	40.5	-0.3
U04	Regular Grid	39,000	-3,000	46.4	45.9	-0.5
U05	Regular Grid	39,000	0	55.6	54.7	-0.9
U06	Regular Grid	39,000	3,000	57.6	59.6	2.0
U07	Regular Grid	39,000	6,000	54.3	56.7	2.4
U08	Regular Grid	39,000	9,000	54.5	56.0	1.5
U09	Regular Grid	39,000	12,000	47.0	49.0	2.0
V01	Regular Grid	42,000	-12,000	34.2	34.2	0.0
V02	Regular Grid	42,000	-9,000	36.9	36.4	-0.5
V03	Regular Grid	42,000	-6,000	40.3	40.0	-0.3
V04	Regular Grid	42,000	-3,000	45.6	45.1	-0.5
V05	Regular Grid	42,000	0	54.2	53.5	-0.7
V06	Regular Grid	42,000	3,000	57.5	59.0	1.5
V07	Regular Grid	42,000	6,000	53.8	56.3	2.5
V08	Regular Grid	42,000	9,000	54.4	55.9	1.5
V09	Regular Grid	42,000	12,000	48.3	50.4	2.1
W01	Regular Grid	45,000	-12,000	33.9	33.7	-0.2
W02	Regular Grid	45,000	-9,000	36.5	36.0	-0.5
W03	Regular Grid	45,000	-6,000	39.9	39.5	-0.4
W04	Regular Grid	45,000	-3,000	44.8	44.4	-0.4
W05	Regular Grid	45,000	0	52.9	52.3	-0.6
W06	Regular Grid	45,000	3,000	57.1	58.0	0.9
W07	Regular Grid	45,000	6,000	53.7	56.0	2.3
W08	Regular Grid	45,000	9,000	54.1	55.6	1.5
W09	Regular Grid	45,000	12,000	48.8	50.8	2.0
X01	Regular Grid	48,000	-12,000	33.6	33.2	-0.4
X02	Regular Grid	48,000	-9,000	36.1	35.5	-0.6
X03	Regular Grid	48,000	-6,000	39.4	38.9	-0.5
X04	Regular Grid	48,000	-3,000	44.1	43.6	-0.5

Table M-17 (4 of 12)

Location Points L_{eq} Values and Comparison: Baseline 2003 and Project (2005) Conditions

Grid Cell ID	Use	X Dist. (feet)[1]	Y Dist. (feet)[1]	2003 L_{eq}	Project (2005) L_{eq}	Difference
X05	Regular Grid	48,000	0	51.7	51.0	-0.7
X06	Regular Grid	48,000	3,000	56.5	56.8	0.3
X07	Regular Grid	48,000	6,000	53.4	55.8	2.4
X08	Regular Grid	48,000	9,000	53.7	55.3	1.6
X09	Regular Grid	48,000	12,000	49.1	51.4	2.3
Y01	Regular Grid	51,000	-12,000	33.3	32.8	-0.5
Y02	Regular Grid	51,000	-9,000	35.7	35.0	-0.7
Y03	Regular Grid	51,000	-6,000	38.9	38.3	-0.6
Y04	Regular Grid	51,000	-3,000	43.4	42.8	-0.6
Y05	Regular Grid	51,000	0	50.6	49.8	-0.8
Y06	Regular Grid	51,000	3,000	55.7	55.4	-0.3
Y07	Regular Grid	51,000	6,000	53.3	55.5	2.2
Y08	Regular Grid	51,000	9,000	53.1	55.1	2.0
Y09	Regular Grid	51,000	12,000	49.3	52.0	2.7
Z01	Regular Grid	54,000	-12,000	33.0	32.4	-0.6
Z02	Regular Grid	54,000	-9,000	35.2	34.6	-0.6
Z03	Regular Grid	54,000	-6,000	38.5	37.7	-0.8
Z04	Regular Grid	54,000	-3,000	42.7	42.0	-0.7
Z05	Regular Grid	54,000	0	49.5	48.4	-1.1
Z06	Regular Grid	54,000	3,000	54.7	54.0	-0.7
Z07	Regular Grid	54,000	6,000	53.1	55.1	2.0
Z08	Regular Grid	54,000	9,000	52.5	54.5	2.0
Z09	Regular Grid	54,000	12,000	49.5	52.1	2.6
CH006	Church	18,362	851	60.9	65.8	4.9
CH008	Church	-1,056	-6,191	58.3	57.2	-1.1
CH011	Church	33,776	-3,732	45.9	45.4	-0.5
CH012	Church	34,672	611	59.2	58.1	-1.1
CH019	Church	16,609	-6,394	47.0	46.1	-0.9
CH020	Church	16,609	-5,892	47.5	46.7	-0.8
CH022	Church	18,259	9,542	48.0	49.4	1.4
CH025	Church	16,984	-6,155	47.0	46.1	-0.9
CH026	Church	772	5,897	57.8	60.2	2.4
CH030	Church	37,397	-3,562	45.3	44.8	-0.5
CH031	Church	29,694	4,531	55.0	57.7	2.7
CH032	Church	34,999	-2,528	48.7	47.9	-0.8
CH037	Church	12,173	2,634	56.4	59.4	3.0
CH044	Church	29,459	441	61.9	60.7	-1.2
CH047	Church	36,169	6,797	56.2	58.1	1.9
CH048	Church	36,695	2,519	58.7	60.3	1.6
CH049	Church	29,734	8,749	54.4	55.8	1.4
CH052	Church	28,386	11,458	45.5	47.1	1.6
CH053	Church	32,138	10,827	48.4	50.0	1.6
CH056	Church	29,496	10,032	49.9	51.4	1.5
CH058	Church	37,445	-3,804	44.8	44.3	-0.5
CH060	Church	37,453	1,503	59.2	58.9	-0.3
CH062	Church	18,436	-9,362	43.2	42.3	-0.9
CH067	Church	24,220	9,999	48.1	49.6	1.5
CH069	Church	24,032	-1,953	55.9	53.3	-2.6
CH072	Church	36,144	10,802	50.2	51.6	1.4
CH075	Church	36,127	-1,223	53.0	51.3	-1.7
CH076	Church	36,351	8,763	55.1	56.5	1.4
CH078	Church	30,942	225	60.5	59.1	-1.4
CH082	Church	15,556	4,179	61.6	64.6	3.0

Table M-17 (5 of 12)

Location Points L_{eq} Values and Comparison: Baseline 2003 and Project (2005) Conditions

Grid Cell ID	Use	X Dist. (feet)[1]	Y Dist. (feet)[1]	2003 L_{eq}	Project (2005) L_{eq}	Difference
CH083	Church	-5,007	6,170	54.2	56.4	2.2
CH087	Church	15,502	10,235	46.4	47.1	0.7
CH094	Church	37,402	4,700	54.7	57.2	2.5
CH096	Church	33,100	4,191	54.8	57.9	3.1
CH097	Church	922	-6,751	55.4	54.3	-1.1
CH098	Church	3,426	10,997	47.4	48.9	1.5
CH099	Church	15,214	-4,708	50.2	49.3	-0.9
CH100	Church	16,819	5,275	63.9	65.5	1.6
CH101	Church	3,028	9,100	50.3	52.1	1.8
CH102	Church	29,435	-3,393	48.1	47.2	-0.9
CH103	Church	33,060	9,231	53.6	55.0	1.4
CH107	Church	12,493	-6,171	51.4	50.1	-1.3
CH108	Church	12,557	-6,505	50.9	49.6	-1.3
CH109	Church	-7,997	6,637	53.7	55.4	1.7
CH116	Church	26,573	11,459	45.2	46.6	1.4
CH118	Church	34,682	5,288	54.6	57.1	2.5
CH119	Church	-3,523	-8,901	52.5	51.8	-0.7
CH120	Church	-3,133	-5,122	63.7	62.2	-1.5
CH121	Church	-1,025	-8,528	52.4	51.7	-0.7
CH122	Church	-2,777	-7,154	56.3	55.4	-0.9
CH129	Church	20,742	-3,140	51.7	50.2	-1.5
CH132	Church	15,736	5,775	62.8	64.1	1.3
CH133	Church	27,851	1,067	62.4	63.4	1.0
CH135	Church	33,627	6,388	56.7	58.6	1.9
CH137	Church	34,656	-3,968	45.2	44.7	-0.5
CH139	Church	36,337	10,957	49.8	51.3	1.5
CH140	Church	34,661	-513	56.0	54.7	-1.3
CH144	Church	30,061	-1,582	54.5	52.4	-2.1
CH145	Church	37,669	-1,182	52.5	50.9	-1.6
CH146	Church	13,494	8,321	50.0	50.9	0.9
CH150	Church	16,056	6,214	60.7	62.0	1.3
CH151	Church	16,044	5,617	63.4	64.8	1.4
CH156	Church	34,981	1,468	60.1	60.1	0.0
CH157	Church	4,879	6,462	54.4	56.0	1.6
CH158	Church	24,437	2,639	55.8	60.2	4.4
CH160	Church	12,198	7,451	52.2	53.1	0.9
CH162	Church	18,585	-9,335	43.1	42.2	-0.9
CH163	Church	36,352	7,585	56.6	58.1	1.5
CH164	Church	17,219	5,679	63.2	64.6	1.4
CH165	Church	31,191	-1,517	54.2	52.1	-2.1
CH166	Church	17,839	7,360	55.7	57.0	1.3
CH168	Church	2,715	9,777	49.3	51.0	1.7
CH172	Church	16,888	11,345	44.8	45.6	0.8
CH173	Church	20,347	-4,191	48.6	47.6	-1.0
CH174	Church	37,440	7,189	56.1	57.9	1.8
CH175	Church	-4,960	6,402	53.6	55.7	2.1
CH177	Church	29,502	11,020	46.9	48.5	1.6
CH180	Church	37,667	5,420	54.2	56.9	2.7
CH182	Church	37,462	-1,152	52.7	51.0	-1.7
CH183	Church	35,808	6,815	56.3	58.2	1.9
CH185	Church	32,290	4,655	54.6	57.3	2.7
CH186	Church	37,662	-2,735	47.3	46.6	-0.7
CH188	Church	29,706	9,678	51.4	52.8	1.4

Table M-17 (6 of 12)

Location Points L_{eq} Values and Comparison: Baseline 2003 and Project (2005) Conditions

Grid Cell ID	Use	X Dist. (feet)[1]	Y Dist. (feet)[1]	2003 L_{eq}	Project (2005) L_{eq}	Difference
CH189	Church	37,456	8,316	55.8	57.3	1.5
CH190	Church	15,769	-1,744	63.8	58.4	-5.4
CH191	Church	37,440	3,115	57.4	59.6	2.2
CH193	Church	16,098	3,516	57.7	61.2	3.5
CH197	Church	36,141	-622	55.0	53.5	-1.5
CH199	Church	32,312	-2,517	49.8	48.7	-1.1
CH201	Church	30,178	11,450	46.0	47.6	1.6
CH205	Church	36,034	6,388	55.6	57.7	2.1
CH206	Church	32,298	-1,373	54.3	52.2	-2.1
CH208	Church	34,964	-345	56.4	55.3	-1.1
CH211	Church	36,174	2,481	58.8	60.5	1.7
CH213	Church	18,281	1,520	56.8	61.7	4.9
CH216	Church	32,313	1,911	60.1	61.8	1.7
CH218	Church	15,869	-951	68.8	65.0	-3.8
CH219	Church	22,848	11,338	45.0	46.3	1.3
CH221	Church	23,975	6,427	60.4	61.9	1.5
CH222	Church	15,086	-9,405	45.5	44.3	-1.2
CH225	Church	13,793	-7,039	48.9	47.8	-1.1
CH230	Church	32,151	4,322	54.7	57.7	3.0
CH231	Church	36,143	9,975	52.1	53.6	1.5
CH234	Church	36,895	6,381	55.3	57.4	2.1
CH235	Church	32,127	2,022	59.9	61.8	1.9
CH239	Church	29,501	6,867	58.5	60.1	1.6
CH240	Church	37,448	-2,742	47.3	46.6	-0.7
CH241	Church	24,439	3,466	54.6	58.1	3.5
CH244	Church	37,681	8,609	55.3	56.8	1.5
CH247	Church	34,958	2,144	59.5	60.9	1.4
CH250	Church	28,704	-4,168	46.3	45.7	-0.6
CH251	Church	13,890	6,115	60.4	61.5	1.1
CH254	Church	17,430	10,595	45.9	46.9	1.0
CH255	Church	12,359	3,858	62.8	66.0	3.2
CH256	Church	16,578	3,534	57.6	61.0	3.4
CH257	Church	15,548	-8,178	46.2	45.1	-1.1
CH259	Church	14,539	12,155	43.9	44.5	0.6
CH260	Church	23,953	-3,330	50.0	48.9	-1.1
CH261	Church	19,150	-3,057	52.6	50.9	-1.7
CH262	Church	-3,362	-7,566	55.4	54.6	-0.8
CH266	Church	16,872	3,711	58.4	61.6	3.2
CH267	Church	35,011	8,122	56.3	57.7	1.4
CH270	Church	31,466	6,365	57.5	59.4	1.9
CH273	Church	31,581	550	60.8	59.7	-1.1
CH275	Church	34,643	11,454	47.4	49.1	1.7
CH276	Church	29,696	3,909	54.6	58.0	3.4
CH281	Church	33,441	3,079	57.1	59.9	2.8
CH282	Church	17,872	-2,898	53.9	51.9	-2.0
CH284	Church	8,877	10,121	47.6	48.3	0.7
CH285	Church	6,222	7,425	52.1	53.3	1.2
CH289	Church	15,218	-1,808	63.7	58.4	-5.3
CH290	Church	16,538	-2,345	57.9	54.7	-3.2
CH294	Church	32,328	7,233	57.6	59.2	1.6
CH300	Church	33,630	2,854	57.8	60.3	2.5
CH303	Church	29,690	5,046	55.8	58.2	2.4
CH304	Church	6,157	8,380	50.6	51.8	1.2

Table M-17 (7 of 12)

Location Points L_{eq} Values and Comparison: Baseline 2003 and Project (2005) Conditions

Grid Cell ID	Use	X Dist. (feet)[1]	Y Dist. (feet)[1]	2003 L_{eq}	Project (2005) L_{eq}	Difference
CH308	Church	26,723	11,459	45.2	46.6	1.4
CH311	Church	29,706	9,728	51.2	52.6	1.4
CH313	Church	34,942	2,884	57.8	60.2	2.4
CH316	Church	33,455	6,366	56.7	58.7	2.0
CH321	Church	26,844	6,592	59.5	61.0	1.5
CH322	Church	24,378	5,651	60.0	62.0	2.0
CH323	Church	32,144	3,499	56.1	58.9	2.8
CH329	Church	33,816	6,120	56.1	58.2	2.1
CH332	Church	29,987	1,050	61.9	62.1	0.2
CH334	Church	-3,362	-8,211	53.9	53.1	-0.8
CH335	Church	35,032	9,135	54.1	55.5	1.4
CH338	Church	34,658	-3,718	45.7	45.2	-0.5
CH340	Church	37,438	6,936	55.9	57.7	1.8
CH343	Church	15,571	5,631	63.3	64.7	1.4
CH346	Church	34,683	2,176	59.4	60.9	1.5
CH350	Church	36,465	11,455	48.1	49.8	1.7
CH351	Church	37,457	8,790	55.0	56.4	1.4
CH352	Church	36,665	11,456	48.2	49.9	1.7
CH354	Church	35,029	10,381	51.0	52.4	1.4
CH359	Church	34,660	-759	55.3	53.7	-1.6
CH361	Church	-297	10,928	47.2	48.9	1.7
CH364	Church	-3,000	-5,050	64.0	62.4	-1.6
CH366	Church	34,663	-2,477	49.0	48.1	-0.9
CH368	Church	29,105	-1,896	53.4	51.7	-1.7
CH375	Church	17,910	-9,299	43.6	42.6	-1.0
CH378	Church	32,154	5,163	55.1	57.5	2.4
CH383	Church	23,176	6,146	61.0	62.5	1.5
CH388	Church	29,674	7,848	57.0	58.3	1.3
CH390	Church	32,137	10,569	49.2	50.7	1.5
CH392	Church	33,524	-107	57.9	56.6	-1.3
CH393	Church	29,454	197	61.3	59.9	-1.4
CH395	Church	20	7,468	53.2	55.3	2.1
CH396	Church	-3,363	-7,999	54.4	53.6	-0.8
CH397	Church	-3,153	6,521	53.2	55.4	2.2
CH402	Church	33,574	-393	57.0	55.8	-1.2
CH405	Church	26,436	-4,141	47.1	46.3	-0.8
CH408	Church	16,609	-6,117	47.3	46.4	-0.9
CH411	Church	-5,649	6,168	54.5	56.6	2.1
CH413	Church	955	5,447	59.7	62.1	2.4
CH415	Church	-574	-8,529	52.2	51.5	-0.7
CH416	Church	-3,520	-6,950	57.2	56.2	-1.0
CH423	Church	34,438	6,123	55.9	58.0	2.1
CH427	Church	27,099	2,637	57.0	60.6	3.6
CH430	Church	29,435	-3,530	47.7	46.9	-0.8
CH431	Church	26,113	11,458	45.1	46.5	1.4
CH432	Church	32,135	10,287	50.3	51.7	1.4
CH433	Church	34,981	4,271	55.0	57.8	2.8
CH434	Church	29,486	4,620	55.2	57.8	2.6
CH436	Church	36,665	6,526	55.6	57.6	2.0
CH438	Church	16,883	7,283	55.4	56.7	1.3
CH440	Church	21,860	-3,132	51.3	49.9	-1.4
CH453	Church	30,531	6,362	57.9	59.8	1.9
CH457	Church	37,682	5,673	54.3	56.8	2.5

Table M-17 (8 of 12)

Location Points L_{eq} Values and Comparison: Baseline 2003 and Project (2005) Conditions

Grid Cell ID	Use	X Dist. (feet)[1]	Y Dist. (feet)[1]	2003 L_{eq}	Project (2005) L_{eq}	Difference
CH459	Church	34,981	4,311	54.9	57.7	2.8
CH461	Church	2,474	-5,106	58.4	57.3	-1.1
CH462	Church	37,658	2,565	58.5	60.0	1.5
CH463	Church	28,157	7,476	57.8	59.2	1.4
CH465	Church	29,437	-2,633	50.4	49.3	-1.1
CH469	Church	36,307	9,187	54.1	55.5	1.4
CH470	Church	15,830	5,944	62.0	63.3	1.3
CH471	Church	34,666	3,437	56.4	59.2	2.8
CH472	Church	34,478	360	58.7	57.5	-1.2
CH479	Church	29,687	3,172	56.1	59.5	3.4
CH480	Church	36,132	8,126	56.2	57.6	1.4
CH481	Church	6,983	6,070	55.5	56.6	1.1
CH482	Church	35,540	2,955	57.7	60.1	2.4
CH485	Church	37,466	9,880	52.5	54.0	1.5
CH493	Church	36,143	9,513	53.2	54.7	1.5
CH497	Church	12,760	12,329	44.1	44.8	0.7
CH500	Church	29,680	2,945	57.0	60.0	3.0
CH503	Church	-2,777	-7,028	56.7	55.7	-1.0
CH507	Church	38,086	-1,785	50.0	48.9	-1.1
CH509	Church	34,671	8,932	54.5	55.9	1.4
CH513	Church	17,184	8,722	49.6	51.1	1.5
CH518	Church	5,989	6,176	54.8	56.1	1.3
CH519	Church	-4,691	6,400	53.5	55.7	2.2
CH520	Church	3,327	10,191	48.6	50.2	1.6
CH521	Church	427	8,681	51.2	53.2	2.0
CH522	Church	13,607	1,267	55.3	59.2	3.9
CH524	Church	34,683	4,171	55.1	57.9	2.8
CH529	Church	37,462	-1,270	52.2	50.7	-1.5
CH532	Church	23,813	9,141	50.7	52.2	1.5
HOS05	Hospital	15,713	-5,495	48.7	47.8	-0.9
HOS07	Hospital	15,334	-5,123	49.5	48.6	-0.9
HOS09	Hospital	23,095	8,420	53.5	54.8	1.3
HOS10	Hospital	18,684	3,896	58.4	61.4	3.0
HOS11	Hospital	18,500	8,884	49.6	51.2	1.6
HOS12	Hospital	13,791	-5,987	50.1	49.0	-1.1
HOS13	Hospital	29,985	5,901	57.5	59.5	2.0
HOS15	Hospital	17,190	1,285	57.3	62.3	5.0
HOS16	Hospital	13,553	7,081	54.2	55.4	1.2
HOS18	Hospital	13,797	-3,917	52.9	51.9	-1.0
HOS19	Hospital	17,676	2,790	54.3	57.9	3.6
LIB01	Library	15,816	-9,101	45.2	44.1	-1.1
LIB02	Library	15,450	7,185	54.9	56.2	1.3
LIB03	Library	24,178	-3,305	50.0	48.9	-1.1
LIB04	Library	23,842	6,513	60.3	61.8	1.5
LIB05	Library	3,672	4,468	63.5	64.7	1.2
LIB06	Library	32,350	-1,151	55.3	53.0	-2.3
LIB07	Library	16,622	-1,444	65.0	59.9	-5.1
LIB10	Library	37,424	2,049	59.2	59.8	0.6
LIB11	Library	-3,147	-6,769	57.6	56.6	-1.0
LIB13	Library	-3,179	6,210	53.9	56.1	2.2
NH003	Hospital, Convalescent	29,488	7,434	57.9	59.3	1.4
NH004	Hospital, Convalescent	34,331	5,967	55.6	57.8	2.2

Table M-17 (9 of 12)

Location Points L_{eq} Values and Comparison: Baseline 2003 and Project (2005) Conditions

Grid Cell ID	Use	X Dist. (feet)[1]	Y Dist. (feet)[1]	2003 L_{eq}	Project (2005) L_{eq}	Difference
NH007	Hospital, Convalescent	17,108	11,062	45.2	46.0	0.8
NH008	Hospital, Convalescent	20,727	-198	66.2	64.8	-1.4
NH009	Hospital, Convalescent	13,755	-5,511	50.7	49.6	-1.1
NH010	Hospital, Convalescent	34,543	11,454	47.4	49.0	1.6
NH012	Hospital, Convalescent	23,851	6,390	60.5	62.0	1.5
NH013	Hospital, Convalescent	16,922	7,743	53.0	54.4	1.4
NH015	Hospital, Convalescent	34,661	-443	56.2	55.1	-1.1
NH017	Hospital, Convalescent	34,326	6,502	56.5	58.5	2.0
NH018	Hospital, Convalescent	17,706	7,119	57.1	58.3	1.2
NH019	Hospital, Convalescent	14,640	6,647	57.5	58.7	1.2
NH022	Hospital, Convalescent	35,884	6,388	55.7	57.8	2.1
NH023	Hospital, Convalescent	13,941	-7,834	47.9	46.7	-1.2
NH025	Hospital, Convalescent	15,569	12,004	44.0	44.6	0.6
NH026	Hospital, Convalescent	26,823	2,036	59.3	62.5	3.2
NH027	Hospital, Convalescent	18,773	-9,296	43.1	42.1	-1.0
NH028	Hospital, Convalescent	14,396	6,645	57.3	58.5	1.2
NH033	Hospital, Convalescent	12,509	8,161	50.3	51.1	0.8
NH037	Hospital, Convalescent	34,990	-3,870	45.3	44.8	-0.5
NH038	Hospital, Convalescent	17,775	10,041	46.9	48.1	1.2
NH040	Hospital, Convalescent	22,738	6,430	60.6	62.1	1.5
NH041	Hospital, Convalescent	37,456	8,531	55.5	56.9	1.4
NH042	Hospital, Convalescent	34,661	7,463	57.0	58.6	1.6
NH043	Hospital, Convalescent	-7,595	6,080	55.2	57.0	1.8
NH044	Hospital, Convalescent	18,202	2,864	54.3	57.9	3.6
NH045	Hospital, Convalescent	15,756	-5,107	49.1	48.3	-0.8
PBS006	Public School	27,281	10,743	47.0	48.5	1.5
PBS009	Public School	34,094	2,313	59.1	61.1	2.0
PBS011	Public School	-2,515	-6,204	59.0	58.0	-1.0
PBS017	Public School	14,818	3,297	57.3	61.0	3.7
PBS018	Public School	35,904	3,121	57.3	59.8	2.5
PBS019	Public School	12,212	-1,924	65.9	59.8	-6.1
PBS021	Public School	911	-6,459	56.1	55.0	-1.1
PBS022	Public School	13,419	10,800	45.7	46.2	0.5
PBS023	Public School	15,909	-7,797	46.3	45.2	-1.1
PBS024	Public School	26,296	-2,314	52.9	51.3	-1.6
PBS026	Public School	23,650	-1,034	61.1	58.1	-3.0
PBS027	Public School	172	11,002	47.4	49.2	1.8
PBS028	Public School	15,282	7,661	52.5	53.8	1.3
PBS029	Public School	25,282	8,750	53.2	54.5	1.3
PBS031	Public School	-1,003	-8,864	51.7	51.0	-0.7
PBS032	Public School	-3,780	-6,609	58.3	57.3	-1.0
PBS033	Public School	14,499	-7,413	47.9	46.7	-1.2
PBS035	Public School	12,046	-585	66.8	73.3	6.5
PBS036	Public School	37,216	-3,113	46.4	45.8	-0.6
PBS040	Public School	31,524	-2,029	51.8	50.4	-1.4
PBS041	Public School	32,406	-2,584	49.5	48.5	-1.0
PBS042	Public School	12,992	-8,938	47.5	46.2	-1.3
PBS047	Public School	13,295	5,451	63.7	64.9	1.2
PBS048	Public School	13,951	6,710	56.5	57.7	1.2
PBS049	Public School	-1,068	-4,601	64.8	63.0	-1.8
PBS050	Public School	14,856	6,115	60.8	62.0	1.2
PBS054	Public School	16,704	9,736	47.3	48.4	1.1
PBS055	Public School	14,713	3	64.1	70.1	6.0

Table M-17 (10 of 12)

Location Points L_{eq} Values and Comparison: Baseline 2003 and Project (2005) Conditions

Grid Cell ID	Use	X Dist. (feet)[1]	Y Dist. (feet)[1]	2003 L_{eq}	Project (2005) L_{eq}	Difference
PBS058	Public School	10,708	-7,313	51.5	50.0	-1.5
PBS059	Public School	18,679	5,302	63.0	64.8	1.8
PBS061	Public School	419	7,093	54.3	56.5	2.2
PBS062	Public School	968	5,128	61.2	63.8	2.6
PBS086	Public School	38,040	1,964	59.1	59.4	0.3
PBS090	Public School	30,414	5,411	56.3	58.6	2.3
PBS091	Public School	11,903	-2,672	59.2	56.7	-2.5
PBS098	Public School	35,517	9,615	52.9	54.4	1.5
PBS099	Public School	-4,391	5,512	55.7	58.2	2.5
PBS100	Public School	36,630	5,989	54.8	57.1	2.3
PBS101	Public School	29,058	2,028	59.6	62.5	2.9
PBS102	Public School	17,390	-2,628	55.6	53.1	-2.5
PBS105	Public School	11,840	4,627	66.5	68.0	1.5
PBS106	Public School	808	9,178	50.4	52.3	1.9
PBS107	Public School	-8,294	5,322	57.5	59.2	1.7
PBS111	Public School	32,576	10,502	49.7	51.1	1.4
PBS113	Public School	34,981	4,193	55.1	57.9	2.8
PBS117	Public School	24,929	3,265	54.6	58.3	3.7
PBS120	Public School	-6,877	5,485	57.0	58.9	1.9
PBS121	Public School	-6,871	5,484	57.0	58.9	1.9
PBS122	Public School	5,515	8,945	49.9	51.2	1.3
PBS123	Public School	18,043	-527	67.6	65.5	-2.1
PBS125	Public School	33,837	-1,843	51.5	50.1	-1.4
PBS127	Public School	21,457	-3,062	51.7	50.2	-1.5
PBS128	Public School	18,588	-5,939	46.1	45.4	-0.7
PBS140	Public School	22,487	-1,032	62.0	58.9	-3.1
PBS201	Public School	23,648	-1,395	59.6	56.0	-3.6
PRK01	Park	11,566	6,133	58.2	59.3	1.1
PRK02	Park	5,414	4,921	61.2	62.3	1.1
PRK03	Park	21,160	-3,063	51.8	50.3	-1.5
PRK05	Park	9,350	-9,074	49.6	48.2	-1.4
PRK07	Park	-13,479	6,711	52.1	53.9	1.8
PRK10	Park	-5,023	-4,415	67.9	66.1	-1.8
PRK11	Park	-1,802	-8,136	53.5	52.8	-0.7
PRK13	Park	-225	-8,037	53.1	52.3	-0.8
PRK15	Park	1,472	-5,400	58.6	57.4	-1.2
PRK16	Park	1,719	-7,830	52.5	51.7	-0.8
PRK18	Park	13,866	-7,408	48.5	47.3	-1.2
PRK201	Park	-2,921	5,657	55.2	57.6	2.4
PRK32	Park	25,609	7,591	57.4	58.7	1.3
PRK41	Park	15,768	6,307	60.2	61.4	1.2
PRK42	Park	13,359	1,894	54.1	57.4	3.3
PRK43	Park	23,171	4,140	56.7	59.4	2.7
PRK45	Park	28,752	5,597	57.4	59.6	2.2
PRK46	Park	36,620	5,021	54.3	57.1	2.8
PRK52	Park	14,558	-1,937	63.0	58.0	-5.0
PRK56	Park	28,407	1,919	59.9	62.8	2.9
PRK59	Park	18,760	7,140	57.8	59.0	1.2
PRK60	Park	13,470	9,437	47.8	48.4	0.6
PRK62	Park	2,383	-6,026	56.0	55.0	-1.0
PRK65	Park	-6,967	-8,394	54.6	53.8	-0.8
PRK67	Park	-10,639	716	70.4	73.4	3.0
PRK68	Park	-761	5,208	58.8	61.3	2.5

Table M-17 (11 of 12)

Location Points L_{eq} Values and Comparison: Baseline 2003 and Project (2005) Conditions

Grid Cell ID	Use	X Dist. (feet)[1]	Y Dist. (feet)[1]	2003 L_{eq}	Project (2005) L_{eq}	Difference
PRK70	Park	34,964	-416	56.2	55.1	-1.1
PRK71	Park	-4,883	-7,930	55.0	54.2	-0.8
PRK72	Park	-3,078	-6,614	58.0	57.0	-1.0
PVS001	Private School	37,733	11,384	48.8	50.6	1.8
PVS002	Private School	37,336	-3,455	45.6	45.1	-0.5
PVS003	Private School	34,483	5,967	55.6	57.8	2.2
PVS004	Private School	27,097	2,468	57.8	61.1	3.3
PVS007	Private School	-7,778	4,626	60.1	62.0	1.9
PVS011	Private School	833	5,679	58.6	61.0	2.4
PVS012	Private School	771	5,989	57.5	59.9	2.4
PVS017	Private School	34,119	6,123	56.0	58.1	2.1
PVS025	Private School	12,977	12,319	44.1	44.7	0.6
PVS026	Private School	36,140	6,964	56.4	58.2	1.8
PVS028	Private School	24,379	5,761	60.2	62.1	1.9
PVS029	Private School	23,982	7,178	58.5	59.9	1.4
PVS030	Private School	28,850	11,455	45.6	47.2	1.6
PVS031	Private School	-12,447	6,370	53.2	55.1	1.9
PVS033	Private School	34,984	5,635	54.9	57.2	2.3
PVS034	Private School	29,461	-1,469	55.4	53.0	-2.4
PVS035	Private School	34,140	9,211	53.8	55.2	1.4
PVS036	Private School	25,423	11,457	45.0	46.4	1.4
PVS037	Private School	29,435	-516	59.1	57.6	-1.5
PVS044	Private School	13,506	6,729	56.0	57.2	1.2
PVS046	Private School	29,009	-4,204	46.1	45.5	-0.6
PVS048	Private School	-501	-8,326	52.6	51.8	-0.8
PVS049	Private School	34,967	2,020	59.7	60.8	1.1
PVS051	Private School	16,298	5,790	62.8	64.1	1.3
PVS054	Private School	32,159	8,982	54.1	55.5	1.4
PVS055	Private School	18,415	5,475	63.2	64.8	1.6
PVS056	Private School	34,709	4,608	54.5	57.5	3.0
PVS060	Private School	6,258	8,224	50.8	52.0	1.2
PVS062	Private School	19,294	-197	66.6	66.1	-0.5
PVS064	Private School	13,310	7,076	54.1	55.2	1.1
PVS065	Private School	33,672	6,369	56.6	58.6	2.0
PVS066	Private School	14,716	11,128	45.2	45.7	0.5
PVS067	Private School	32,753	-466	57.3	55.9	-1.4
PVS069	Private School	13,205	6,854	55.1	56.3	1.2
PVS070	Private School	15,369	3,722	59.5	62.8	3.3
PVS071	Private School	2,864	13,792	44.1	45.5	1.4
PVS073	Private School	24,503	5,600	59.8	61.9	2.1
PVS074	Private School	24,091	6,749	59.7	61.2	1.5
PVS077	Private School	12,602	-226	64.1	71.5	7.4
PVS081	Private School	29,676	2,047	59.7	62.3	2.6
PVS082	Private School	32,177	6,695	57.6	59.3	1.7
PVS083	Private School	17,478	5,970	62.2	63.6	1.4
PVS084	Private School	16,261	-881	68.6	65.1	-3.5
PVS085	Private School	32,138	10,688	48.8	50.4	1.6
PVS086	Private School	36,351	8,881	54.8	56.2	1.4
PVS087	Private School	32,298	-1,596	53.3	51.4	-1.9
PVS091	Private School	27,180	2,649	56.9	60.6	3.7
PVS092	Private School	18,568	9,623	47.8	49.3	1.5
PVS093	Private School	-5,793	5,899	55.3	57.4	2.1
PVS099	Private School	22,860	11,024	45.5	46.9	1.4

Table M-17 (12 of 12)

Location Points L_{eq} Values and Comparison: Baseline 2003 and Project (2005) Conditions

Grid Cell ID	Use	X Dist. (feet)[1]	Y Dist. (feet)[1]	2003 L_{eq}	Project (2005) L_{eq}	Difference
PVS101	Private School	29,432	-911	57.8	55.5	-2.3
PVS103	Private School	3,278	9,736	49.3	50.9	1.6
PVS104	Private School	9,240	3,525	64.0	67.6	3.6
PVS105	Private School	14,468	-9,493	45.8	44.6	-1.2
PVS106	Private School	26,663	6,419	59.6	61.2	1.6
PVS107	Private School	3,658	5,088	59.2	61.1	1.9
PVS108	Private School	23,359	6,499	60.4	61.8	1.4
PVS109	Private School	18,639	3,216	55.2	58.8	3.6
PVS110	Private School	-573	-8,780	51.7	51.0	-0.7
PVS111	Private School	16,874	-6,105	47.1	46.3	-0.8
PBS114	Private School	9,738	3,976	66.1	68.6	2.5
PBS116	Private School	8,575	4,739	66.7	67.6	0.9
PBS138	Private School	-2,901	10,004	47.5	49.1	1.6

Note:

1/ The sites are located by X and Y coordinates in feet. Each X and Y value is a distance measured in feet from the airport reference point on the airport (near the Tom Bradley International Terminal. This type of coordinate system is called the Cartesian or rectangular coordinate system. This system is commonly defined by two axes at right angles (two lines that form a 90-degree angle to each other and are perpendicular) forming a plane (xy plane). The horizontal (moving left or right along the plane) axis is called the x-axis. The opposite is called the vertical (moving up or down along the plane) axis, which is called the y-axis. The point of intersection (where both the x and y axes meet) is called the origin point (depicted as 0,0 point). A unit of length is used to mark along the x and y axes, which forms a grid. To specify a particular point on a two dimensional coordinate system, you indicate the x unit first, followed by the y unit in the form (x,y), an ordered pair. The intersection of the two x-y axes creates four quadrants-northeast, southeast, southwest and northwest. In the northeast quadrant, values are (x,y), and southeast:(-x,y), southwest:(-x,-y) and northwest:(x,-y).

Source: Ricondo & Associates, Inc., 2004; Based on Landrum and Brown, 2002 Grids – Final LAX Master Plan EIS/EIR

Prepared by: Ricondo & Associates, Inc.

Table M-18 (1 of 12)

Location Points L_{max} Values and Comparison: Baseline 2003 and Project (2005)

Grid Cell ID	Use	X Dist. (feet)[1]	Y Dist. (feet)[1]	2003 L_{max}	Project (2005) L_{max}	Difference
C08	Regular Grid	-15,000	9,000	89.1	68.0	-21.1
C09	Regular Grid	-15,000	12,000	78.7	62.1	-16.6
D06	Regular Grid	-12,000	3,000	97.4	92.7	-4.7
D07	Regular Grid	-12,000	6,000	94.4	77.4	-17.0
D08	Regular Grid	-12,000	9,000	80.7	68.3	-12.4
D09	Regular Grid	-12,000	12,000	71.8	62.3	-9.5
E07	Regular Grid	-9,000	6,000	83.1	76.8	-6.3
E08	Regular Grid	-9,000	9,000	73.4	67.9	-5.5
E09	Regular Grid	-9,000	12,000	67.5	62.0	-5.5
F02	Regular Grid	-6,000	-9,000	89.7	72.2	-17.5
F03	Regular Grid	-6,000	-6,000	98.5	83.3	-15.2
F07	Regular Grid	-6,000	6,000	80.7	76.9	-3.8
F08	Regular Grid	-6,000	9,000	69.8	67.2	-2.6
F09	Regular Grid	-6,000	12,000	63.5	61.2	-2.3
G01	Regular Grid	-3,000	-12,000	81.3	67.7	-13.6
G02	Regular Grid	-3,000	-9,000	87.7	70.5	-17.2
G03	Regular Grid	-3,000	-6,000	98.5	80.9	-17.6
G07	Regular Grid	-3,000	6,000	77.7	75.1	-2.6
G08	Regular Grid	-3,000	9,000	68.8	65.7	-3.1
G09	Regular Grid	-3,000	12,000	63.1	60.7	-2.4
H01	Regular Grid	0	-12,000	71.4	66.0	-5.4
H02	Regular Grid	0	-9,000	75.5	68.5	-7.0
H03	Regular Grid	0	-6,000	82.9	78.1	-4.8
H07	Regular Grid	0	6,000	82.1	78.2	-3.9
H08	Regular Grid	0	9,000	71.1	68.9	-2.2
H09	Regular Grid	0	12,000	67.6	63.1	-4.5
I01	Regular Grid	3,000	-12,000	65.9	63.9	-2.0
I02	Regular Grid	3,000	-9,000	70.7	66.6	-4.1
I03	Regular Grid	3,000	-6,000	78.4	73.6	-4.8
I07	Regular Grid	3,000	6,000	86.6	82.0	-4.6
I08	Regular Grid	3,000	9,000	79.1	71.2	-7.9
I09	Regular Grid	3,000	12,000	75.2	64.5	-10.7
J01	Regular Grid	6,000	-12,000	64.2	61.9	-2.3
J02	Regular Grid	6,000	-9,000	69.4	66.7	-2.7
J03	Regular Grid	6,000	-6,000	80.3	75.2	-5.1
J07	Regular Grid	6,000	6,000	96.1	84.8	-11.3
J08	Regular Grid	6,000	9,000	89.3	72.7	-16.6
J09	Regular Grid	6,000	12,000	83.7	65.6	-18.1
K01	Regular Grid	9,000	-12,000	65.0	61.1	-3.9
K02	Regular Grid	9,000	-9,000	69.9	66.9	-3.0
K03	Regular Grid	9,000	-6,000	80.2	75.2	-5.0
K05	Regular Grid	9,000	0	100.7	96.0	-4.7
K07	Regular Grid	9,000	6,000	95.8	85.9	-9.9
K08	Regular Grid	9,000	9,000	89.2	77.4	-11.8
K09	Regular Grid	9,000	12,000	88.2	70.5	-17.7
L01	Regular Grid	12,000	-12,000	64.8	61.2	-3.6
L02	Regular Grid	12,000	-9,000	70.0	66.8	-3.2
L03	Regular Grid	12,000	-6,000	78.9	74.7	-4.2
L04	Regular Grid	12,000	-3,000	92.0	86.9	-5.1
L05	Regular Grid	12,000	0	99.9	97.7	-2.2
L06	Regular Grid	12,000	3,000	95.0	94.4	-0.6

Table M-18 (2 of 12)

Location Points L_{max} Values and Comparison: Baseline 2003 and Project (2005)

Grid Cell ID	Use	X Dist. (feet)[1]	Y Dist. (feet)[1]	2003 L_{max}	Project (2005) L_{max}	Difference
L07	Regular Grid	12,000	6,000	97.2	88.3	-8.9
L08	Regular Grid	12,000	9,000	89.1	75.2	-13.9
L09	Regular Grid	12,000	12,000	83.4	75.7	-7.7
M01	Regular Grid	15,000	-12,000	67.3	60.7	-6.6
M02	Regular Grid	15,000	-9,000	75.2	66.2	-9.0
M03	Regular Grid	15,000	-6,000	85.6	73.5	-12.1
M04	Regular Grid	15,000	-3,000	95.0	85.2	-9.8
M05	Regular Grid	15,000	0	101.0	96.6	-4.4
M06	Regular Grid	15,000	3,000	91.7	91.5	-0.2
M07	Regular Grid	15,000	6,000	90.1	89.0	-1.1
M08	Regular Grid	15,000	9,000	92.6	75.6	-17.0
M09	Regular Grid	15,000	12,000	85.5	70.8	-14.7
N01	Regular Grid	18,000	-12,000	72.9	60.1	-12.8
N02	Regular Grid	18,000	-9,000	82.9	65.4	-17.5
N03	Regular Grid	18,000	-6,000	90.7	72.3	-18.4
N04	Regular Grid	18,000	-3,000	97.8	83.6	-14.2
N05	Regular Grid	18,000	0	98.2	94.8	-3.4
N06	Regular Grid	18,000	3,000	92.3	90.8	-1.5
N07	Regular Grid	18,000	6,000	90.3	89.7	-0.6
N08	Regular Grid	18,000	9,000	93.0	80.9	-12.1
N09	Regular Grid	18,000	12,000	87.4	76.5	-10.9
O01	Regular Grid	21,000	-12,000	80.6	59.5	-21.1
O02	Regular Grid	21,000	-9,000	87.9	64.7	-23.2
O03	Regular Grid	21,000	-6,000	88.7	71.6	-17.1
O04	Regular Grid	21,000	-3,000	94.7	82.0	-12.7
O05	Regular Grid	21,000	0	95.2	92.7	-2.5
O06	Regular Grid	21,000	3,000	88.2	90.0	1.8
O07	Regular Grid	21,000	6,000	90.3	92.0	1.7
O08	Regular Grid	21,000	9,000	88.4	83.1	-5.3
O09	Regular Grid	21,000	12,000	90.3	81.1	-9.2
P01	Regular Grid	24,000	-12,000	85.2	59.2	-26.0
P02	Regular Grid	24,000	-9,000	85.1	66.3	-18.8
P03	Regular Grid	24,000	-6,000	87.3	72.8	-14.5
P04	Regular Grid	24,000	-3,000	90.6	79.9	-10.7
P05	Regular Grid	24,000	0	94.1	90.7	-3.4
P06	Regular Grid	24,000	3,000	89.0	89.3	0.3
P07	Regular Grid	24,000	6,000	89.8	88.8	-1.0
P08	Regular Grid	24,000	9,000	88.4	85.6	-2.8
P09	Regular Grid	24,000	12,000	90.3	76.6	-13.7
Q01	Regular Grid	27,000	-12,000	84.8	64.0	-20.8
Q02	Regular Grid	27,000	-9,000	85.1	69.9	-15.2
Q03	Regular Grid	27,000	-6,000	89.4	71.5	-17.9
Q04	Regular Grid	27,000	-3,000	89.9	78.8	-11.1
Q05	Regular Grid	27,000	0	92.1	88.6	-3.5
Q06	Regular Grid	27,000	3,000	87.4	86.5	-0.9
Q07	Regular Grid	27,000	6,000	86.8	83.8	-3.0
Q08	Regular Grid	27,000	9,000	88.6	88.0	-0.6
Q09	Regular Grid	27,000	12,000	87.4	77.1	-10.3
R01	Regular Grid	30,000	-12,000	80.3	67.2	-13.1
R02	Regular Grid	30,000	-9,000	84.9	71.0	-13.9
R03	Regular Grid	30,000	-6,000	90.7	68.6	-22.1
R04	Regular Grid	30,000	-3,000	89.1	77.7	-11.4
R05	Regular Grid	30,000	0	89.9	86.7	-3.2

Table M-18 (3 of 12)

Location Points L_{max} Values and Comparison: Baseline 2003 and Project (2005)

Grid Cell ID	Use	X Dist. (feet)[1]	Y Dist. (feet)[1]	2003 L_{max}	Project (2005) L_{max}	Difference
R06	Regular Grid	30,000	3,000	87.5	86.6	-0.9
R07	Regular Grid	30,000	6,000	84.8	81.8	-3.0
R08	Regular Grid	30,000	9,000	86.5	88.0	1.5
R09	Regular Grid	30,000	12,000	86.8	81.6	-5.2
S01	Regular Grid	33,000	-12,000	79.7	69.4	-10.3
S02	Regular Grid	33,000	-9,000	82.1	68.4	-13.7
S03	Regular Grid	33,000	-6,000	89.8	67.3	-22.5
S04	Regular Grid	33,000	-3,000	88.6	74.5	-14.1
S05	Regular Grid	33,000	0	88.2	81.7	-6.5
S06	Regular Grid	33,000	3,000	88.0	82.9	-5.1
S07	Regular Grid	33,000	6,000	84.2	80.4	-3.8
S08	Regular Grid	33,000	9,000	84.1	84.4	0.3
S09	Regular Grid	33,000	12,000	86.3	84.6	-1.7
T01	Regular Grid	36,000	-12,000	80.7	68.7	-12.0
T02	Regular Grid	36,000	-9,000	84.0	64.8	-19.2
T03	Regular Grid	36,000	-6,000	87.4	64.6	-22.8
T04	Regular Grid	36,000	-3,000	87.4	72.8	-14.6
T05	Regular Grid	36,000	0	86.6	80.4	-6.2
T06	Regular Grid	36,000	3,000	87.9	83.0	-4.9
T07	Regular Grid	36,000	6,000	83.7	78.8	-4.9
T08	Regular Grid	36,000	9,000	81.7	80.6	-1.1
T09	Regular Grid	36,000	12,000	85.4	85.9	0.5
U01	Regular Grid	39,000	-12,000	79.4	65.9	-13.5
U02	Regular Grid	39,000	-9,000	85.6	61.5	-24.1
U03	Regular Grid	39,000	-6,000	84.6	64.4	-20.2
U04	Regular Grid	39,000	-3,000	86.4	71.8	-14.6
U05	Regular Grid	39,000	0	85.3	79.4	-5.9
U06	Regular Grid	39,000	3,000	87.6	82.9	-4.7
U07	Regular Grid	39,000	6,000	82.3	77.0	-5.3
U08	Regular Grid	39,000	9,000	80.8	77.2	-3.6
U09	Regular Grid	39,000	12,000	84.0	84.3	0.3
V01	Regular Grid	42,000	-12,000	78.7	62.7	-16.0
V02	Regular Grid	42,000	-9,000	86.3	58.6	-27.7
V03	Regular Grid	42,000	-6,000	82.2	64.1	-18.1
V04	Regular Grid	42,000	-3,000	85.5	70.9	-14.6
V05	Regular Grid	42,000	0	84.1	78.4	-5.7
V06	Regular Grid	42,000	3,000	87.0	82.6	-4.4
V07	Regular Grid	42,000	6,000	82.2	77.4	-4.8
V08	Regular Grid	42,000	9,000	81.2	75.2	-6.0
V09	Regular Grid	42,000	12,000	82.5	81.1	-1.4
W01	Regular Grid	45,000	-12,000	80.2	59.9	-20.3
W02	Regular Grid	45,000	-9,000	85.9	58.4	-27.5
W03	Regular Grid	45,000	-6,000	81.9	63.9	-18.0
W04	Regular Grid	45,000	-3,000	84.6	70.0	-14.6
W05	Regular Grid	45,000	0	82.8	77.5	-5.3
W06	Regular Grid	45,000	3,000	86.0	82.0	-4.0
W07	Regular Grid	45,000	6,000	82.3	77.9	-4.4
W08	Regular Grid	45,000	9,000	81.4	75.3	-6.1
W09	Regular Grid	45,000	12,000	80.5	77.5	-3.0
X01	Regular Grid	48,000	-12,000	81.5	56.3	-25.2
X02	Regular Grid	48,000	-9,000	84.5	58.5	-26.0
X03	Regular Grid	48,000	-6,000	81.7	63.6	-18.1
X04	Regular Grid	48,000	-3,000	83.8	69.1	-14.7

Table M-18 (4 of 12)

Location Points L_{max} Values and Comparison: Baseline 2003 and Project (2005)

Grid Cell ID	Use	X Dist. (feet)[1]	Y Dist. (feet)[1]	2003 L_{max}	Project (2005) L_{max}	Difference
X05	Regular Grid	48,000	0	81.6	76.5	-5.1
X06	Regular Grid	48,000	3,000	85.3	81.3	-4.0
X07	Regular Grid	48,000	6,000	82.2	78.4	-3.8
X08	Regular Grid	48,000	9,000	81.4	75.2	-6.2
X09	Regular Grid	48,000	12,000	78.5	73.8	-4.7
Y01	Regular Grid	51,000	-12,000	81.1	56.1	-25.0
Y02	Regular Grid	51,000	-9,000	81.1	58.3	-22.8
Y03	Regular Grid	51,000	-6,000	81.3	63.3	-18.0
Y04	Regular Grid	51,000	-3,000	82.9	68.3	-14.6
Y05	Regular Grid	51,000	0	80.4	75.6	-4.8
Y06	Regular Grid	51,000	3,000	82.9	80.5	-2.4
Y07	Regular Grid	51,000	6,000	81.8	78.8	-3.0
Y08	Regular Grid	51,000	9,000	81.2	76.0	-5.2
Y09	Regular Grid	51,000	12,000	77.8	74.0	-3.8
Z01	Regular Grid	54,000	-12,000	81.9	56.4	-25.5
Z02	Regular Grid	54,000	-9,000	79.2	58.2	-21.0
Z03	Regular Grid	54,000	-6,000	80.7	63.0	-17.7
Z04	Regular Grid	54,000	-3,000	81.8	67.5	-14.3
Z05	Regular Grid	54,000	0	79.3	74.7	-4.6
Z06	Regular Grid	54,000	3,000	82.2	79.8	-2.4
Z07	Regular Grid	54,000	6,000	81.2	79.1	-2.1
Z08	Regular Grid	54,000	9,000	80.9	74.2	-6.7
Z09	Regular Grid	54,000	12,000	78.1	73.4	-4.7
CH006	Church	18,362	851	95.1	93.4	-1.7
CH008	Church	-1,056	-6,191	82.8	77.7	-5.1
CH011	Church	33,776	-3,732	87.4	71.2	-16.2
CH012	Church	34,672	611	88.2	81.8	-6.4
CH019	Church	16,609	-6,394	88.8	71.7	-17.1
CH020	Church	16,609	-5,892	90.2	73.2	-17.0
CH022	Church	18,259	9,542	93.1	81.2	-11.9
CH025	Church	16,984	-6,155	90.1	72.2	-17.9
CH026	Church	772	5,897	84.3	81.0	-3.3
CH030	Church	37,397	-3,562	86.4	70.4	-16.0
CH031	Church	29,694	4,531	86.8	82.7	-4.1
CH032	Church	34,999	-2,528	87.7	74.5	-13.2
CH037	Church	12,173	2,634	93.9	91.1	-2.8
CH044	Church	29,459	441	91.0	87.6	-3.4
CH047	Church	36,169	6,797	83.6	79.4	-4.2
CH048	Church	36,695	2,519	88.5	83.4	-5.1
CH049	Church	29,734	8,749	86.0	87.4	1.4
CH052	Church	28,386	11,458	87.5	82.1	-5.4
CH053	Church	32,138	10,827	86.4	86.9	0.5
CH056	Church	29,496	10,032	87.4	87.4	0.0
CH058	Church	37,445	-3,804	86.2	70.0	-16.2
CH060	Church	37,453	1,503	88.2	82.4	-5.8
CH062	Church	18,436	-9,362	83.4	64.3	-19.1
CH067	Church	24,220	9,999	88.6	83.4	-5.2
CH069	Church	24,032	-1,953	92.3	84.1	-8.2
CH072	Church	36,144	10,802	84.3	84.4	0.1
CH075	Church	36,127	-1,223	86.6	77.3	-9.3
CH076	Church	36,351	8,763	81.1	79.0	-2.1
CH078	Church	30,942	225	89.5	85.5	-4.0
CH082	Church	15,556	4,179	93.9	95.8	1.9

Table M-18 (5 of 12)

Location Points L_{max} Values and Comparison: Baseline 2003 and Project (2005)

Grid Cell ID	Use	X Dist. (feet)[1]	Y Dist. (feet)[1]	2003 L_{max}	Project (2005) L_{max}	Difference
CH083	Church	-5,007	6,170	79.5	76.5	-3.0
CH087	Church	15,502	10,235	88.7	73.1	-15.6
CH094	Church	37,402	4,700	84.9	79.8	-5.1
CH096	Church	33,100	4,191	86.1	80.2	-5.9
CH097	Church	922	-6,751	77.8	74.0	-3.8
CH098	Church	3,426	10,997	78.9	66.8	-12.1
CH099	Church	15,214	-4,708	91.5	77.4	-14.1
CH100	Church	16,819	5,275	92.6	93.5	0.9
CH101	Church	3,028	9,100	80.5	71.3	-9.2
CH102	Church	29,435	-3,393	88.2	76.1	-12.1
CH103	Church	33,060	9,231	84.0	84.3	0.3
CH107	Church	12,493	-6,171	79.5	73.9	-5.6
CH108	Church	12,557	-6,505	78.5	72.9	-5.6
CH109	Church	-7,997	6,637	78.6	74.1	-4.5
CH116	Church	26,573	11,459	87.6	79.8	-7.8
CH118	Church	34,682	5,288	83.5	77.8	-5.7
CH119	Church	-3,523	-8,901	88.7	70.7	-18.0
CH120	Church	-3,133	-5,122	100.5	84.7	-15.8
CH121	Church	-1,025	-8,528	78.4	70.1	-8.3
CH122	Church	-2,777	-7,154	87.8	75.5	-12.3
CH129	Church	20,742	-3,140	95.1	81.4	-13.7
CH132	Church	15,736	5,775	91.2	90.8	-0.4
CH133	Church	27,851	1,067	91.8	89.5	-2.3
CH135	Church	33,627	6,388	84.0	80.2	-3.8
CH137	Church	34,656	-3,968	86.9	70.1	-16.8
CH139	Church	36,337	10,957	84.3	84.5	0.2
CH140	Church	34,661	-513	86.4	79.4	-7.0
CH144	Church	30,061	-1,582	89.3	82.2	-7.1
CH145	Church	37,669	-1,182	86.0	76.9	-9.1
CH146	Church	13,494	8,321	94.0	77.8	-16.2
CH150	Church	16,056	6,214	89.5	88.6	-0.9
CH151	Church	16,044	5,617	91.7	91.7	0.0
CH156	Church	34,981	1,468	89.2	83.2	-6.0
CH157	Church	4,879	6,462	94.0	81.9	-12.1
CH158	Church	24,437	2,639	88.5	88.8	0.3
CH160	Church	12,198	7,451	96.2	80.7	-15.5
CH162	Church	18,585	-9,335	83.8	64.3	-19.5
CH163	Church	36,352	7,585	83.2	78.7	-4.5
CH164	Church	17,219	5,679	91.5	91.0	-0.5
CH165	Church	31,191	-1,517	89.0	81.4	-7.6
CH166	Church	17,839	7,360	88.4	85.5	-2.9
CH168	Church	2,715	9,777	78.5	69.4	-9.1
CH172	Church	16,888	11,345	87.7	75.2	-12.5
CH173	Church	20,347	-4,191	92.9	77.3	-15.6
CH174	Church	37,440	7,189	83.4	79.0	-4.4
CH175	Church	-4,960	6,402	78.4	75.5	-2.9
CH177	Church	29,502	11,020	87.5	84.7	-2.8
CH180	Church	37,667	5,420	83.3	78.1	-5.2
CH182	Church	37,462	-1,152	86.0	77.0	-9.0
CH183	Church	35,808	6,815	83.7	79.6	-4.1
CH185	Church	32,290	4,655	84.9	79.2	-5.7
CH186	Church	37,662	-2,735	86.7	72.9	-13.8
CH188	Church	29,706	9,678	87.0	88.0	1.0

Table M-18 (6 of 12)

Location Points L_{max} Values and Comparison: Baseline 2003 and Project (2005)

Grid Cell ID	Use	X Dist. (feet)[1]	Y Dist. (feet)[1]	2003 L_{max}	Project (2005) L_{max}	Difference
CH189	Church	37,456	8,316	82.1	76.8	-5.3
CH190	Church	15,769	-1,744	97.9	90.4	-7.5
CH191	Church	37,440	3,115	87.7	82.9	-4.8
CH193	Church	16,098	3,516	92.1	93.2	1.1
CH197	Church	36,141	-622	85.9	78.7	-7.2
CH199	Church	32,312	-2,517	88.9	76.2	-12.7
CH201	Church	30,178	11,450	87.1	84.1	-3.0
CH205	Church	36,034	6,388	83.6	79.1	-4.5
CH206	Church	32,298	-1,373	88.5	79.7	-8.8
CH208	Church	34,964	-345	86.5	79.7	-6.8
CH211	Church	36,174	2,481	88.7	83.5	-5.2
CH213	Church	18,281	1,520	93.0	91.0	-2.0
CH216	Church	32,313	1,911	90.1	84.2	-5.9
CH218	Church	15,869	-951	100.3	93.8	-6.5
CH219	Church	22,848	11,338	89.7	78.6	-11.1
CH221	Church	23,975	6,427	89.0	89.4	0.4
CH222	Church	15,086	-9,405	74.2	65.1	-9.1
CH225	Church	13,793	-7,039	79.7	70.9	-8.8
CH230	Church	32,151	4,322	85.8	80.5	-5.3
CH231	Church	36,143	9,975	83.0	82.4	-0.6
CH234	Church	36,895	6,381	83.2	78.7	-4.5
CH235	Church	32,127	2,022	90.1	84.2	-5.9
CH239	Church	29,501	6,867	84.2	82.2	-2.0
CH240	Church	37,448	-2,742	86.8	73.0	-13.8
CH241	Church	24,439	3,466	88.3	88.6	0.3
CH244	Church	37,681	8,609	81.6	77.0	-4.6
CH247	Church	34,958	2,144	89.2	83.7	-5.5
CH250	Church	28,704	-4,168	88.8	73.8	-15.0
CH251	Church	13,890	6,115	90.8	88.6	-2.2
CH254	Church	17,430	10,595	91.0	77.5	-13.5
CH255	Church	12,359	3,858	95.8	97.6	1.8
CH256	Church	16,578	3,534	91.8	93.1	1.3
CH257	Church	15,548	-8,178	79.3	67.4	-11.9
CH259	Church	14,539	12,155	85.1	71.0	-14.1
CH260	Church	23,953	-3,330	91.4	78.1	-13.3
CH261	Church	19,150	-3,057	96.7	82.5	-14.2
CH262	Church	-3,362	-7,566	91.7	74.6	-17.1
CH266	Church	16,872	3,711	92.1	93.9	1.8
CH267	Church	35,011	8,122	82.3	78.8	-3.5
CH270	Church	31,466	6,365	84.4	81.1	-3.3
CH273	Church	31,581	550	89.9	84.6	-5.3
CH275	Church	34,643	11,454	85.6	86.3	0.7
CH276	Church	29,696	3,909	86.0	84.3	-1.7
CH281	Church	33,441	3,079	87.7	82.9	-4.8
CH282	Church	17,872	-2,898	97.8	83.6	-14.2
CH284	Church	8,877	10,121	88.5	75.9	-12.6
CH285	Church	6,222	7,425	93.3	78.6	-14.7
CH289	Church	15,218	-1,808	99.9	90.6	-9.3
CH290	Church	16,538	-2,345	99.4	86.5	-12.9
CH294	Church	32,328	7,233	83.7	79.6	-4.1
CH300	Church	33,630	2,854	88.4	83.3	-5.1
CH303	Church	29,690	5,046	86.5	81.3	-5.2
CH304	Church	6,157	8,380	91.7	75.0	-16.7

Table M-18 (7 of 12)

Location Points L_{max} Values and Comparison: Baseline 2003 and Project (2005)

Grid Cell ID	Use	X Dist. (feet)[1]	Y Dist. (feet)[1]	2003 L_{max}	Project (2005) L_{max}	Difference
CH308	Church	26,723	11,459	87.6	80.3	-7.3
CH311	Church	29,706	9,728	87.1	88.0	0.9
CH313	Church	34,942	2,884	88.3	83.2	-5.1
CH316	Church	33,455	6,366	84.0	80.3	-3.7
CH321	Church	26,844	6,592	85.8	85.2	-0.6
CH322	Church	24,378	5,651	89.9	86.6	-3.3
CH323	Church	32,144	3,499	87.5	82.0	-5.5
CH329	Church	33,816	6,120	84.3	79.8	-4.5
CH332	Church	29,987	1,050	91.0	88.3	-2.7
CH334	Church	-3,362	-8,211	89.6	72.6	-17.0
CH335	Church	35,032	9,135	82.3	81.5	-0.8
CH338	Church	34,658	-3,718	87.1	70.9	-16.2
CH340	Church	37,438	6,936	83.4	79.0	-4.4
CH343	Church	15,571	5,631	91.7	91.6	-0.1
CH346	Church	34,683	2,176	89.2	83.8	-5.4
CH350	Church	36,465	11,455	84.7	85.2	0.5
CH351	Church	37,457	8,790	81.2	77.8	-3.4
CH352	Church	36,665	11,456	84.6	85.1	0.5
CH354	Church	35,029	10,381	84.5	84.7	0.2
CH359	Church	34,660	-759	86.7	78.8	-7.9
CH361	Church	-297	10,928	68.8	65.1	-3.7
CH364	Church	-3,000	-5,050	99.5	85.0	-14.5
CH366	Church	34,663	-2,477	87.9	74.7	-13.2
CH368	Church	29,105	-1,896	90.0	81.8	-8.2
CH375	Church	17,910	-9,299	82.6	64.6	-18.0
CH378	Church	32,154	5,163	84.6	78.4	-6.2
CH383	Church	23,176	6,146	89.7	89.8	0.1
CH388	Church	29,674	7,848	84.4	85.0	0.6
CH390	Church	32,137	10,569	86.3	87.2	0.9
CH392	Church	33,524	-107	87.5	80.8	-6.7
CH393	Church	29,454	197	90.5	87.1	-3.4
CH395	Church	20	7,468	76.7	73.5	-3.2
CH396	Church	-3,363	-7,999	90.4	73.2	-17.2
CH397	Church	-3,153	6,521	75.6	73.2	-2.4
CH402	Church	33,574	-393	87.2	80.1	-7.1
CH405	Church	26,436	-4,141	91.4	74.4	-17.0
CH408	Church	16,609	-6,117	89.6	72.5	-17.1
CH411	Church	-5,649	6,168	80.1	76.6	-3.5
CH413	Church	955	5,447	86.9	84.3	-2.6
CH415	Church	-574	-8,529	76.6	69.8	-6.8
CH416	Church	-3,520	-6,950	94.9	76.8	-18.1
CH423	Church	34,438	6,123	84.2	79.5	-4.7
CH427	Church	27,099	2,637	88.6	87.7	-0.9
CH430	Church	29,435	-3,530	87.9	75.7	-12.2
CH431	Church	26,113	11,458	87.6	78.9	-8.7
CH432	Church	32,135	10,287	86.1	87.2	1.1
CH433	Church	34,981	4,271	85.8	80.4	-5.4
CH434	Church	29,486	4,620	86.9	82.4	-4.5
CH436	Church	36,665	6,526	83.4	79.0	-4.4
CH438	Church	16,883	7,283	88.8	85.1	-3.7
CH440	Church	21,860	-3,132	93.5	79.8	-13.7
CH453	Church	30,531	6,362	84.6	81.4	-3.2
CH457	Church	37,682	5,673	82.8	77.5	-5.3

Table M-18 (8 of 12)

Location Points L_{max} Values and Comparison: Baseline 2003 and Project (2005)

Grid Cell ID	Use	X Dist. (feet)[1]	Y Dist. (feet)[1]	2003 L_{max}	Project (2005) L_{max}	Difference
CH459	Church	34,981	4,311	85.7	80.3	-5.4
CH461	Church	2,474	-5,106	82.5	77.0	-5.5
CH462	Church	37,658	2,565	88.2	83.3	-4.9
CH463	Church	28,157	7,476	85.4	86.1	0.7
CH465	Church	29,437	-2,633	89.6	79.1	-10.5
CH469	Church	36,307	9,187	81.4	80.1	-1.3
CH470	Church	15,830	5,944	90.5	89.8	-0.7
CH471	Church	34,666	3,437	87.0	82.3	-4.7
CH472	Church	34,478	360	87.6	81.4	-6.2
CH479	Church	29,687	3,172	87.4	86.3	-1.1
CH480	Church	36,132	8,126	82.4	77.4	-5.0
CH481	Church	6,983	6,070	93.9	85.7	-8.2
CH482	Church	35,540	2,955	88.1	83.1	-5.0
CH485	Church	37,466	9,880	81.8	80.5	-1.3
CH493	Church	36,143	9,513	82.1	81.1	-1.0
CH497	Church	12,760	12,329	81.9	75.3	-6.6
CH500	Church	29,680	2,945	87.8	86.8	-1.0
CH503	Church	-2,777	-7,028	88.2	75.9	-12.3
CH507	Church	38,086	-1,785	86.3	75.3	-11.0
CH509	Church	34,671	8,932	82.2	81.4	-0.8
CH513	Church	17,184	8,722	92.8	80.7	-12.1
CH518	Church	5,989	6,176	96.0	84.5	-11.5
CH519	Church	-4,691	6,400	78.1	75.3	-2.8
CH520	Church	3,327	10,191	79.8	68.6	-11.2
CH521	Church	427	8,681	73.8	70.7	-3.1
CH522	Church	13,607	1,267	94.7	91.1	-3.6
CH524	Church	34,683	4,171	86.1	80.6	-5.5
CH529	Church	37,462	-1,270	86.1	76.7	-9.4
CH532	Church	23,813	9,141	88.3	85.6	-2.7
HOS05	Hospital	15,713	-5,495	89.9	74.6	-15.3
HOS07	Hospital	15,334	-5,123	90.4	75.9	-14.5
HOS09	Hospital	23,095	8,420	88.6	86.9	-1.7
HOS10	Hospital	18,684	3,896	91.3	91.6	0.3
HOS11	Hospital	18,500	8,884	90.3	82.5	-7.8
HOS12	Hospital	13,791	-5,987	82.4	73.9	-8.5
HOS13	Hospital	29,985	5,901	84.6	81.5	-3.1
HOS15	Hospital	17,190	1,285	94.3	91.8	-2.5
HOS16	Hospital	13,553	7,081	95.5	83.7	-11.8
HOS18	Hospital	13,797	-3,917	91.3	81.7	-9.6
HOS19	Hospital	17,676	2,790	92.9	89.4	-3.5
LIB01	Library	15,816	-9,101	76.9	65.5	-11.4
LIB02	Library	15,450	7,185	90.5	84.8	-5.7
LIB03	Library	24,178	-3,305	91.0	78.2	-12.8
LIB04	Library	23,842	6,513	88.8	89.8	1.0
LIB05	Library	3,672	4,468	96.5	94.2	-2.3
LIB06	Library	32,350	-1,151	88.2	80.3	-7.9
LIB07	Library	16,622	-1,444	96.4	91.1	-5.3
LIB10	Library	37,424	2,049	88.2	83.1	-5.1
LIB11	Library	-3,147	-6,769	93.0	77.2	-15.8
LIB13	Library	-3,179	6,210	76.5	74.3	-2.2
NH003	Hospital, Convalescent	29,488	7,434	84.1	84.0	-0.1
NH004	Hospital, Convalescent	34,331	5,967	84.2	79.3	-4.9

Table M-18 (9 of 12)

Location Points L_{max} Values and Comparison: Baseline 2003 and Project (2005)

Grid Cell ID	Use	X Dist. (feet)[1]	Y Dist. (feet)[1]	2003 L_{max}	Project (2005) L_{max}	Difference
NH007	Hospital, Convalescent	17,108	11,062	88.2	76.1	-12.1
NH008	Hospital, Convalescent	20,727	-198	95.6	92.1	-3.5
NH009	Hospital, Convalescent	13,755	-5,511	84.8	75.5	-9.3
NH010	Hospital, Convalescent	34,543	11,454	85.6	86.3	0.7
NH012	Hospital, Convalescent	23,851	6,390	89.1	89.5	0.4
NH013	Hospital, Convalescent	16,922	7,743	89.2	83.3	-5.9
NH015	Hospital, Convalescent	34,661	-443	86.5	79.6	-6.9
NH017	Hospital, Convalescent	34,326	6,502	83.9	80.0	-3.9
NH018	Hospital, Convalescent	17,706	7,119	88.5	86.2	-2.3
NH019	Hospital, Convalescent	14,640	6,647	90.0	86.7	-3.3
NH022	Hospital, Convalescent	35,884	6,388	83.7	79.2	-4.5
NH023	Hospital, Convalescent	13,941	-7,834	78.0	68.8	-9.2
NH025	Hospital, Convalescent	15,569	12,004	87.1	71.0	-16.1
NH026	Hospital, Convalescent	26,823	2,036	90.6	89.2	-1.4
NH027	Hospital, Convalescent	18,773	-9,296	84.2	64.3	-19.9
NH028	Hospital, Convalescent	14,396	6,645	90.7	86.6	-4.1
NH033	Hospital, Convalescent	12,509	8,161	92.7	77.8	-14.9
NH037	Hospital, Convalescent	34,990	-3,870	86.9	70.4	-16.5
NH038	Hospital, Convalescent	17,775	10,041	93.4	79.2	-14.2
NH040	Hospital, Convalescent	22,738	6,430	89.1	91.0	1.9
NH041	Hospital, Convalescent	37,456	8,531	81.7	77.0	-4.7
NH042	Hospital, Convalescent	34,661	7,463	83.4	79.0	-4.4
NH043	Hospital, Convalescent	-7,595	6,080	81.1	76.4	-4.7
NH044	Hospital, Convalescent	18,202	2,864	90.7	89.2	-1.5
NH045	Hospital, Convalescent	15,756	-5,107	91.1	75.9	-15.2
PBS006	Public School	27,281	10,743	88.3	83.2	-5.1
PBS009	Public School	34,094	2,313	89.4	83.8	-5.6
PBS011	Public School	-2,515	-6,204	88.6	78.9	-9.7
PBS017	Public School	14,818	3,297	92.4	92.8	0.4
PBS018	Public School	35,904	3,121	87.7	82.9	-4.8
PBS019	Public School	12,212	-1,924	102.0	92.7	-9.3
PBS021	Public School	911	-6,459	78.6	75.0	-3.6
PBS022	Public School	13,419	10,800	87.1	71.5	-15.6
PBS023	Public School	15,909	-7,797	82.3	68.3	-14.0
PBS024	Public School	26,296	-2,314	91.2	81.8	-9.4
PBS026	Public School	23,650	-1,034	91.6	87.3	-4.3
PBS027	Public School	172	11,002	69.9	65.3	-4.6
PBS028	Public School	15,282	7,661	93.2	82.1	-11.1
PBS029	Public School	25,282	8,750	89.0	87.8	-1.2
PBS031	Public School	-1,003	-8,864	77.8	69.2	-8.6
PBS032	Public School	-3,780	-6,609	98.0	78.3	-19.7
PBS033	Public School	14,499	-7,413	79.8	69.6	-10.2
PBS035	Public School	12,046	-585	106.6	99.6	-7.0
PBS036	Public School	37,216	-3,113	86.7	71.8	-14.9
PBS040	Public School	31,524	-2,029	89.2	79.4	-9.8
PBS041	Public School	32,406	-2,584	88.8	75.8	-13.0
PBS042	Public School	12,992	-8,938	72.7	66.7	-6.0
PBS047	Public School	13,295	5,451	93.3	91.8	-1.5
PBS048	Public School	13,951	6,710	92.5	86.3	-6.2
PBS049	Public School	-1,068	-4,601	93.5	85.6	-7.9
PBS050	Public School	14,856	6,115	89.9	88.8	-1.1
PBS054	Public School	16,704	9,736	93.3	77.1	-16.2
PBS055	Public School	14,713	3	101.2	96.6	-4.6

Table M-18 (10 of 12)

Location Points L_{max} Values and Comparison: Baseline 2003 and Project (2005)

Grid Cell ID	Use	X Dist. (feet)[1]	Y Dist. (feet)[1]	2003 L_{max}	Project (2005) L_{max}	Difference
PBS058	Public School	10,708	-7,313	74.5	70.7	-3.8
PBS059	Public School	18,679	5,302	92.1	93.0	0.9
PBS061	Public School	419	7,093	78.6	75.3	-3.3
PBS062	Public School	968	5,128	88.9	86.6	-2.3
PBS086	Public School	38,040	1,964	88.1	82.9	-5.2
PBS090	Public School	30,414	5,411	85.1	80.3	-4.8
PBS091	Public School	11,903	-2,672	93.8	88.3	-5.5
PBS098	Public School	35,517	9,615	82.8	82.2	-0.6
PBS099	Public School	-4,391	5,512	81.9	78.9	-3.0
PBS100	Public School	36,630	5,989	82.8	78.0	-4.8
PBS101	Public School	29,058	2,028	90.7	88.7	-2.0
PBS102	Public School	17,390	-2,628	98.5	84.7	-13.8
PBS105	Public School	11,840	4,627	95.1	96.2	1.1
PBS106	Public School	808	9,178	74.0	69.8	-4.2
PBS107	Public School	-8,294	5,322	85.1	79.8	-5.3
PBS111	Public School	32,576	10,502	86.0	87.0	1.0
PBS113	Public School	34,981	4,193	86.0	80.6	-5.4
PBS117	Public School	24,929	3,265	88.5	88.5	0.0
PBS120	Public School	-6,877	5,485	84.0	79.5	-4.5
PBS121	Public School	-6,871	5,484	84.0	79.5	-4.5
PBS122	Public School	5,515	8,945	89.3	72.9	-16.4
PBS123	Public School	18,043	-527	97.9	93.4	-4.5
PBS125	Public School	33,837	-1,843	88.1	76.5	-11.6
PBS127	Public School	21,457	-3,062	93.8	80.4	-13.4
PBS128	Public School	18,588	-5,939	89.4	72.0	-17.4
PBS140	Public School	22,487	-1,032	92.2	88.1	-4.1
PBS201	Public School	23,648	-1,395	92.2	86.1	-6.1
PRK01	Park	11,566	6,133	97.7	87.9	-9.8
PRK02	Park	5,414	4,921	97.0	91.7	-5.3
PRK03	Park	21,160	-3,063	94.3	81.0	-13.3
PRK05	Park	9,350	-9,074	69.4	66.5	-2.9
PRK07	Park	-13,479	6,711	94.0	74.7	-19.3
PRK10	Park	-5,023	-4,415	101.8	90.0	-11.8
PRK11	Park	-1,802	-8,136	81.8	71.7	-10.1
PRK13	Park	-225	-8,037	76.0	70.8	-5.2
PRK15	Park	1,472	-5,400	82.1	77.7	-4.4
PRK16	Park	1,719	-7,830	74.1	70.1	-4.0
PRK18	Park	13,866	-7,408	79.0	69.9	-9.1
PRK201	Park	-2,921	5,657	79.4	77.2	-2.2
PRK32	Park	25,609	7,591	87.3	89.7	2.4
PRK41	Park	15,768	6,307	89.3	88.2	-1.1
PRK42	Park	13,359	1,894	90.9	87.2	-3.7
PRK43	Park	23,171	4,140	88.8	88.5	-0.3
PRK45	Park	28,752	5,597	84.7	81.8	-2.9
PRK46	Park	36,620	5,021	84.1	78.8	-5.3
PRK52	Park	14,558	-1,937	102.2	90.5	-11.7
PRK56	Park	28,407	1,919	91.0	89.0	-2.0
PRK59	Park	18,760	7,140	87.8	87.0	-0.8
PRK60	Park	13,470	9,437	90.0	73.8	-16.2
PRK62	Park	2,383	-6,026	78.4	73.8	-4.6
PRK65	Park	-6,967	-8,394	90.1	74.2	-15.9
PRK67	Park	-10,639	716	103.2	101.1	-2.1
PRK68	Park	-761	5,208	86.5	83.5	-3.0

Table M-18 (11 of 12)

Location Points L_{max} Values and Comparison: Baseline 2003 and Project (2005)

Grid Cell ID	Use	X Dist. (feet)[1]	Y Dist. (feet)[1]	2003 L_{max}	Project (2005) L_{max}	Difference
PRK70	Park	34,964	-416	86.4	79.5	-6.9
PRK71	Park	-4,883	-7,930	96.1	74.3	-21.8
PRK72	Park	-3,078	-6,614	93.1	77.8	-15.3
PVS001	Private School	37,733	11,384	83.9	83.9	0.0
PVS002	Private School	37,336	-3,455	86.5	70.6	-15.9
PVS003	Private School	34,483	5,967	84.1	79.2	-4.9
PVS004	Private School	27,097	2,468	89.1	88.1	-1.0
PVS007	Private School	-7,778	4,626	89.8	84.3	-5.5
PVS011	Private School	833	5,679	85.5	82.5	-3.0
PVS012	Private School	771	5,989	83.8	80.5	-3.3
PVS017	Private School	34,119	6,123	84.2	79.7	-4.5
PVS025	Private School	12,977	12,319	82.0	75.0	-7.0
PVS026	Private School	36,140	6,964	83.6	79.4	-4.2
PVS028	Private School	24,379	5,761	89.8	86.8	-3.0
PVS029	Private School	23,982	7,178	87.1	90.5	3.4
PVS030	Private School	28,850	11,455	87.4	82.6	-4.8
PVS031	Private School	-12,447	6,370	92.5	76.1	-16.4
PVS033	Private School	34,984	5,635	83.5	78.0	-5.5
PVS034	Private School	29,461	-1,469	89.4	82.7	-6.7
PVS035	Private School	34,140	9,211	83.1	82.8	-0.3
PVS036	Private School	25,423	11,457	87.6	78.5	-9.1
PVS037	Private School	29,435	-516	88.2	85.3	-2.9
PVS044	Private School	13,506	6,729	94.0	85.8	-8.2
PVS046	Private School	29,009	-4,204	88.5	73.6	-14.9
PVS048	Private School	-501	-8,326	76.6	70.3	-6.3
PVS049	Private School	34,967	2,020	89.1	83.7	-5.4
PVS051	Private School	16,298	5,790	91.1	90.8	-0.3
PVS054	Private School	32,159	8,982	84.3	84.8	0.5
PVS055	Private School	18,415	5,475	91.9	92.5	0.6
PVS056	Private School	34,709	4,608	85.1	79.5	-5.6
PVS060	Private School	6,258	8,224	92.1	75.6	-16.5
PVS062	Private School	19,294	-197	96.3	93.2	-3.1
PVS064	Private School	13,310	7,076	96.2	83.5	-12.7
PVS065	Private School	33,672	6,369	84.0	80.2	-3.8
PVS066	Private School	14,716	11,128	88.1	69.7	-18.4
PVS067	Private School	32,753	-466	87.5	80.6	-6.9
PVS069	Private School	13,205	6,854	95.6	84.7	-10.9
PVS070	Private School	15,369	3,722	93.2	94.6	1.4
PVS071	Private School	2,864	13,792	73.9	61.4	-12.5
PVS073	Private School	24,503	5,600	89.9	86.3	-3.6
PVS074	Private School	24,091	6,749	88.2	90.0	1.8
PVS077	Private School	12,602	-226	104.1	98.5	-5.6
PVS081	Private School	29,676	2,047	90.6	88.5	-2.1
PVS082	Private School	32,177	6,695	84.2	80.7	-3.5
PVS083	Private School	17,478	5,970	90.6	89.9	-0.7
PVS084	Private School	16,261	-881	99.8	93.7	-6.1
PVS085	Private School	32,138	10,688	86.3	87.1	0.8
PVS086	Private School	36,351	8,881	80.9	79.3	-1.6
PVS087	Private School	32,298	-1,596	88.7	79.1	-9.6
PVS091	Private School	27,180	2,649	88.6	87.6	-1.0
PVS092	Private School	18,568	9,623	92.7	81.5	-11.2
PVS093	Private School	-5,793	5,899	81.6	77.8	-3.8
PVS099	Private School	22,860	11,024	88.7	79.8	-8.9

Table M-18 (12 of 12)

Location Points L_{max} Values and Comparison: Baseline 2003 and Project (2005)

Grid Cell ID	Use	X Dist. (feet)[1]	Y Dist. (feet)[1]	2003 L_{max}	Project (2005) L_{max}	Difference
PVS101	Private School	29,432	-911	88.3	84.2	-4.1
PVS103	Private School	3,278	9,736	80.4	69.7	-10.7
PVS104	Private School	9,240	3,525	98.0	101.7	3.7
PVS105	Private School	14,468	-9,493	73.3	65.2	-8.1
PVS106	Private School	26,663	6,419	86.2	84.9	-1.3
PVS107	Private School	3,658	5,088	93.9	89.2	-4.7
PVS108	Private School	23,359	6,499	88.9	90.4	1.5
PVS109	Private School	18,639	3,216	90.3	90.3	0.0
PVS110	Private School	-573	-8,780	76.3	69.1	-7.2
PVS111	Private School	16,874	-6,105	90.1	72.4	-17.7
PBS114	Private School	9,738	3,976	97.5	100.7	3.2
PBS116	Private School	8,575	4,739	101.9	94.6	-7.3
PVS138	Private School	-2,901	10,004	67.2	64.2	-3.0

Note:

1/ The sites are located by X and Y coordinates in feet. Each X and Y value is a distance measured in feet from the airport reference point on the airport (near the Tom Bradley International Terminal. This type of coordinate system is called the Cartesian or rectangular coordinate system. This system is commonly defined by two axes at right angles (two lines that form a 90-degree angle to each other and are perpendicular) forming a plane (xy plane). The horizontal (moving left or right along the plane) axis is called the x-axis. The opposite is called the vertical (moving up or down along the plane) axis, which is called the y-axis. The point of intersection (where both the x and y axes meet) is called the origin point (depicted as 0,0 point). A unit of length is used to mark along the x and y axes, which forms a grid. To specify a particular point on a two dimensional coordinate system, you indicate the x unit first, followed by the y unit in the form (x,y), an ordered pair. The intersection of the two x-y axes creates four quadrants-northeast, southeast, southwest and northwest. In the northeast quadrant, values are (x,y), and southeast:(-x,y), southwest:(-x,-y) and northwest:(x,-y).

Source: Ricondo & Associates, Inc., 2004; Based on Landrum and Brown, 2002 Grids – Final LAX Master Plan EIS/EIR
Prepared by: Ricondo & Associates, Inc.

M.1.7 Post-Project (2008) Air Traffic Pattern Conditions Analysis

The information provided below describe the qualitative analysis process used to assess post-project aircraft noise exposure patterns, which was used to address Notice of Preparation (NOP) comments by El Segundo. Their concerns were that the proposed improvements to the LAX south airfield would cause a higher proportion of the total aircraft operations to utilize the south airfield than has been the case historically. The City of El Segundo believes that this shift would occur because individual pilots and the FAA would choose the improved south airfield facilities over the existing north airfield facilities.

In preparing this EIR, LAWA consulted further with FAA on the specific concern raised by the City of El Segundo in its comments on the NOP. FAA provided a letter to LAWA stating its authority and role in controlling air traffic at and around LAX. In FAA's letter the agency definitively states that the LAX south airfield improvements will not change the way in which Air Traffic Control uses these facilities. Thus, the FAA controls take-offs and landings, and consistently maintains a balance between the two sides of the airport. This means that the relative utilization of the north and south airfields will not change upon the completion of the south airfield project.

Based on information provided by the FAA and data provided by the Final LAX Master Plan analysis, statistics were calculated and used to support the conclusions stated in Subsection 4.5.6.1.5. Details related to the results are provided in this section.

M.1.7.1 Post-Project (2008) LAX Air Traffic and Airfield Operating Characteristics Analysis

The Final LAX Master Plan and associated LAX Master Plan Final EIR documented existing FAA air traffic and airfield operating characteristics at LAX in 2000. Current air traffic procedures were reviewed and screened for any changes that may have occurred between 2000 and 2003. The air traffic characteristics identified for future No Action/No Project and Alternative D scenarios in the Final LAX Master Plan analysis (e.g., 2005 and 2015) were compared to existing conditions to identify changes expected to occur after SAIP is constructed. The main purpose of this qualitative analysis was to identify any planned or proposed changes by the FAA to airfield and airspace operations that may affect average annual runway use after SAIP is complete.

The following steps were conducted to project runway use patterns in 2008 and identify the potential for significant changes in aircraft noise based on expected changes in runway use patterns:

- Identify any changes to FAA air traffic or airfield procedures that occurred between 2000 and 2003.
- Determine if the FAA plans or proposes changes to air traffic or airfield procedures after completion of SAIP (2008).
- Incorporate identified changes (if any) and determine general 2008 annualized runway use patterns.

A key component of the first two steps was identifying any historical or projected changes to FAA air traffic procedures. The third step involved a determination of how a change in procedure(s) may directly alter runway use patterns at LAX. A brief review of how runways are selected and the influence FAA Air Traffic Control has on runway selection was provided in the following section.

M.1.7.1.1 Runway Selection/Assignment Criteria

LAX Airport Traffic Control Tower (ATCT) runway selection is initially determined by weather conditions (ceiling height, visibility, and wind direction). Due to the fairly consistent weather conditions in the Los Angeles Basin, a west flow arrival and departure configuration is used at LAX 96 percent of the time, annually. The next criterion applied to runway selection by the FAA was airfield and airspace operations. The primary arrival/departure runway configuration consisted of arrivals on the outboard Runways 6L-24R and 7R-25L and departures on the inboard Runways 6R-24L and 7L-25R. Standard operating procedures are in place at the LAX ATCT and Southern California Terminal Radar Approach Control Facility (TRACON) that define runway assignment criteria for arriving and departing aircraft based on the runway configuration selected. A change to air traffic operations or procedures in the terminal airspace or airfield circulation may alter the assumed runway use at LAX.

M.1.7.1.2 Terminal Airspace Criteria

The Southern California TRACON provides air traffic control services for airports in the Los Angeles Basin and specifically for LAX arrivals and departures within geographically defined airspace from the ground to 13,000 feet above MSL. The current terminal airspace structure provides LAX with five arrival and five departure corridors for jet aircraft and four arrival and four departure corridors for turboprop aircraft. Arrivals are assigned to a specific corridor based on their point of origin, and departures are assigned to a specific corridor based on their destination airport. The arrival fixes are oriented to the north, south, east, and west, and then geographically associated with an arrival runway at LAX, as depicted in **Table M-19a and Table M-19b**. This allows arrival traffic from the east to be dynamically assigned to the north or south airfield by the Southern California TRACON controller, resulting in a reasonable balance of arrival traffic under normal conditions. A significant change in existing FAA air traffic airspace procedures or an increase in scheduled aircraft operations from a geographic market that changes the share of arrivals over an inbound route (fix load) may affect runway use at LAX.

Table M-19a

Jet Arrival and Departure Fixes and Primary Service Directions

Primary Direction	Arrival Fix	Runway	Departure Fix	Runway
East	Civet	25L/24R	Thermal	25L
			Dagget (northeast)	25L/24R
North	Fillmore	24R	Gorman	24R
West	Ventura	25L/24R	Exert	25L/24R
	Santa Catalina (southwest)			
South	Krauz	25L	Mission Bay	25L
			Oceanside	

Sources: Final LAX Master Plan, 2004; Southern California TRACON
Prepared By: Ricondo & Associates, Inc., 2004

Table M-19b

Turboprop Arrival and Departure Fixes and Primary Service Directions

Primary Direction	Arrival Fix	Runway	Departure Fix	Runway
East	Paradise	25L/24R	Paradise	25L
North	Dart	24R	Gorman	24R
Northwest	Ventura	25L/24R	Ventura	24R
South	Krauz	25L	Oceanside	25L

Sources: Final LAX Master Plan, 2004; Southern California TRACON
Prepared By: Ricondo & Associates, Inc., 2004

M.1.7.1.3 Airfield Circulation Criteria

The LAX ATCT provides air traffic control services to arriving and departing aircraft within approximately five miles of the airspace surrounding the airport and on the airport surface movement area. The current airfield consists of four parallel runways oriented east/west. Departure fixes are located north, northeast, east, south, and west of the airport. Departure runway assignment is normally based on direction of flight as depicted in Table M-19a and Table M-19b. The ATCT controller has the option to balance traffic by dynamically changing runway assignments. A significant change in existing FAA air traffic procedures or an increase in scheduled aircraft operations from a geographic market that changes the share of departures over an outbound route may affect runway assignments (runway use) at LAX.

M.1.7.2 2000-2003 Air Traffic and Airfield Operating Characteristics

2000

The Final LAX Master Plan published in April 2004 stated that air traffic airspace and airfield operating characteristics at LAX had changed minimally between 1996 and 2000. The FAA, through participation in the LAX Master Plan and EIS/EIR process, validated these airspace and airfield operating characteristics and assumptions. The following changes were documented in the LAX Master Plan.

- The collocation of five approach control facilities at the Southern California TRACON.
- Modifications to the Class B airspace.
- Minor airspace realignments with the Los Angeles (ZLA) Air Route Traffic Control Center (ARTCC).
- Modification to procedures for aircraft departing LAX (i.e., standardizing the initial departure altitude to 3,000 feet above MSL for all turbojet aircraft).
- The establishment of a new sector (East Feeder) at the Southern California TRACON with a corresponding published Standard Terminal Arrival Route (STAR), the Paradise Four Arrival. Traffic Management Coordinators and controllers can now balance arrivals to the north and south airfield at LAX further from the airport, resulting in more efficient flow management of arrival aircraft.
- Runway Safety Program initiatives. As part of the FAA's effort to reduce runway incursions at LAX, the TRACON would balance arrival traffic for the north and south airfield. Prior to 1996, aircraft were allowed to arrive at the south airfield as a matter of convenience for taxiing to their gate complex.
- No significant new technologies or RNAV/RNP procedures have been introduced into the air traffic system that would affect current air traffic operating characteristics.

The terminal and airfield operating characteristics at LAX are consistent day-to-day based on several limiting factors:

- A significant amount of military Special Use Airspace, including Military Operating Areas and Restricted Airspace. This military airspace constrains the available airspace for commercial arrivals and departures into and out of the Los Angeles Basin airports, including LAX. Corridors are specifically defined for arrivals and departures and provide little flexibility for the movement or off-loading of traffic by the controllers at Southern California TRACON.
- Four parallel runways and limited taxiway infrastructure allow for two basic arrival and departure configurations at the airport, west flow or east flow, arriving on the outboard runways and departing on the inboard runways during normal peak operating hours.

- Noise considerations, operational efficiency, and weather conditions dictate the use of west flow 96 percent of the year.

2003

Since 2000, FAA personnel at the LAX ATCT, Southern California TRACON**,** and the Los Angeles (ZLA) ARTCC are actively participating in the FAA's National Airspace Redesign (NAR). The goal of this national initiative is more efficient movement of air traffic through the redesign of terminal and en route airspace and procedures. By 2003, the NAR teams had developed several plans for specific terminal and en route airspace redesigns, including the Los Angeles Basin airports. Although dual arrival routes to LAX from the east were implemented, the major redesign effort was still in the procedural development stage in 2003.

Actual 2003 traffic levels compared to the annual operations modeled in the LAX Master Plan (please refer to **Table M-20**) does not reflect operation level changes that may require additional enhancements to FAA air traffic procedures. Actual runway use patterns between 2000 and 2003 depicted in **Table M-21** and **M-22** reflect similar patterns, which suggest that air traffic and airfield procedures remained constant.

Table M-20

LAX Total Annual Operations

Year	Actual Operations				Appendix D Interim Activity Analysis	
	2000	2001	2002	2003	2005[2]	2008
Design Day Total	2,275[1]	N/A	N/A	N/A	2,279	2,279
Annual Total	783,433	738,114	645,424	622,378	779,500	781,000

Notes:
N/A: Design Day total not calculated in LAX Master Plan EIR.
1/ Operations were extrapolated by applying the same percentage (0.937 percent) of hourly design day operations (2,279) compared to annual operations (779,500) in the simulation for 2005.
2/ No Action/No Project Final LAX Master Plan Scenario

Source: Los Angeles World Airports Historical Traffic Report for LAX, www.lawa.org/lax.; Final LAX Master Plan, 2004
Prepared By: Ricondo & Associates, Inc., 2004

Table M-21

Annual Runway Use: 2000 LAX Master Plan Final EIR Existing Conditions

Runway	Arrivals Day	Arrivals Evening	Arrivals Night	Arrivals Total	Departures Day	Departures Evening	Departures Night	Departures Total
6L	1.0%	0.7%	1.3%	1.0%	--	--	--	--
6R	--	0.1%	16.6%	2.2%	0.8%	0.1%	0.3%	0.6%
7L	--	--	8.8%	1.2%	1.1%	0.6%	1.0%	1.0%
7R	1.4%	0.4%	3.9%	1.5%	0.2%	0.1%	0.3%	0.2%
24L	2.8%	5.8%	1.3%	3.1%	45.3%	41.5%	25.0%	41.5%
24R	41.8%	42.9%	29.7%	40.4%	2.6%	2.2%	1.6%	2.4%
25L	50.0%	44.6%	34.4%	46.9%	6.8%	12.7%	11.1%	8.3%
25R	3.0%	5.4%	3.9%	3.6%	43.1%	42.9%	60.5%	45.9%
Total	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**

Notes: Day: 7:00 a.m. to 6:59 p.m., Evening: 7:00 p.m. to 9:59 p.m., Night: 10:00 p.m. to 6:59 a.m.
Totals may not add to 100 percent due to rounding.
Cell values of "--" indicate runway use of less than 0.05 percent.

Source: Landrum & Brown, 2002, based on LAWA 4th Quarter 2000 INM Input files.
Prepared by: Ricondo & Associates, Inc., 2004

Table M-22

Annual Runway Use: 2003 Baseline Conditions

	Arrivals				Departures			
Runway	**Day**	**Evening**	**Night**	**Total**	**Day**	**Evening**	**Night**	**Total**
6L	1.0%	0.6%	1.9%	1.0%	--	--	--	--
6R	0.1%	0.1%	10.6%	1.3%	0.7%	0.5%	0.5%	0.7%
7L	0.1%	0.1%	11.3%	1.3%	0.9%	0.4%	1.2%	0.9%
7R	1.0%	0.4%	3.7%	1.2%	0.4%	0.3%	0.5%	0.4%
24L	2.8%	3.7%	1.8%	2.9%	44.2%	50.4%	25.8%	41.8%
24R	43.2%	41.6%	26.8%	41.0%	4.2%	3.3%	2.1%	3.8%
25L	48.1%	45.8%	40.7%	46.9%	6.6%	12.1%	13.3%	8.3%
25R	3.7%	7.8%	3.2%	4.4%	42.9%	33.0%	56.6%	44.1%
Total	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**

Notes: Day: 7:00 a.m. to 6:59 p.m., Evening: 7:00 p.m. to 9:59 p.m., Night: 10:00 p.m. to 6:59 a.m.
Totals may not add to 100 percent due to rounding.
Cell values of "--" indicate runway use of less than 0.05 percent.

Source: Ricondo & Associates, Inc.,2004. Based on LAWA 4th Quarter 2003 INM Input files.
Prepared by: Ricondo & Associates, Inc., 2004

M.1.7.3 Post-Project (2008) Air Traffic and Airfield Operating Characteristics

Identification of the effects that potential air traffic changes may have on post-project runway use patterns was based on the runway selection and assignment criteria described above. Known changes to terminal airspace and airfield circulation is described in the following subsections.

M.1.7.3.1 Terminal Airspace

In 2004, the FAA published/updated 16 Standard Instrument Departure (SID) procedures and 17 Standard Terminal Arrival Routes (STARs). The LAX ATCT initiated a new departure procedure allowing aircraft to climb unrestricted to 5,000 feet above MSL after take-off. In addition, new ATCT en route control routes were published for LAX. These en route control routes were designed for aircraft originating from local area airports destined to LAX. The routes were also used for traffic departing LAX and arriving to a local area airport.

Prior to 2008, the FAA planned to replace or combine six STAR arrivals with RNAV/RNP STAR procedures, publish new SID procedures, and modify Class B airspace. The STAR and SID procedures would directly overlay existing routes and therefore have no effect on terminal airspace procedures. National Airspace Redesign plans for the Los Angeles Basin would continue to be refined. When completed, these proposed airspace and procedural changes would be subject to an Environmental Assessment (EA) or Environmental Impact Statement (EIS).

Subsequently, it is unlikely that any significant airspace change would occur through 2008. The new south airfield configuration would require no changes in air traffic airspace operating characteristics because the basic runway layout will remain the same. Despite the fact that the south airfield may be used for New Large Aircraft (NLA) arrivals, the number of NLA operations in 2008 is expected to be minimal, and have little affect on existing terminal airspace procedures.

The Final LAX Master Plan, Appendix D, presented an assumed capacity for LAX of 781,000 annual operations in 2008. Appendix A of the Final LAX Master Plan reported a forecast design day of

2,279 operations in 2008, as depicted in Table M-20. A representative daily schedule was created and documented in the Final LAX Master Plan for 2008 reflecting these assumptions. As indicated in Table M-19a and Table M-19b, arrival and departure fixes were assigned to the Final LAX Master Plan 2008 flight activity schedule in accordance with the Southern California TRACON standard operating procedures and previous LAX Master Plan air traffic assumptions. An arrival fix load percentage was extrapolated, resulting in an arrival fix load as indicated in **Table M-23**. Based on the comparative percentages from Final LAX Master Plan 2000 existing conditions and 2005 No Action simulation results, and the assumption that no major air traffic procedural changes are expected between 2005 and 2008, air traffic airspace operating characteristics at LAX are not expected to change post project construction.

Table M-23

LAX Arrival and Departure Fix Loading

		% Operations by Fix		
Arrivals				
Direction	Runway	2000	2005[1]	2008[2]
East	25L/24R	42%	43%	46%
North	24R	37%	36%	32%
West	25L/24R	2%	2%	4%
South	24R	19%	19%	18%
Departures				
East	25R/24L	43%	43%	44%
North	24L	27%	26%	26%
West	25R/24L	13%	14%	15%
South	25R	17%	17%	15%

Note:

1/ Based on 2005 No Action/No Project Simulation and 2005 Activity Schedule

2/ Extrapolated based on 2005 No Action/No Project Simulation air traffic assumptions and 2008 Flight Activity Schedule

Sources: Final LAX Master Plan, 2004; Landrum and Brown, Inc., 2002

Prepared by: Ricondo & Associates, Inc., 2004

M.1.7.3.2 Airfield Circulation

Post-project conditions include a relocated Runway 7R-25L to the south along, and a parallel center taxiway between Runways 7R-25L and 7L-25R. This new airfield configuration would allow arrivals exiting Runway 25L to queue on the parallel taxiway prior to crossing Runway 7L-25R, resulting in enhanced taxiing movements to the terminal complex. NLA may be required to use the south airfield for arrival and departures. The FAA has not completed the required analysis, as identified in the LAX Master Plan, to determine if air traffic airfield procedures would be affected while the NLA is taxiing on the primary airport surface areas. As stated in the Final LAX Master Plan Executive Summary, the specific procedures developed for NLA operations would attempt to minimize airfield disruption, and should not influence the normal airfield operating characteristics for future years, such as 2008. LAX ATCT personnel are expected to continue to balance arrival and departure runway assignments between the north and south airfield dynamically to maximize the efficient and safe movement of air traffic on the airport. This balance of arrival and departure aircraft is required as part of the FAA's runway safety program at LAX. Runway safety is a top priority for the FAA; therefore, any change to current airfield surface movement in relation to the new south airfield in 2008 is unlikely.

As stated above, a flight schedule was created for the Final LAX Master Plan representing forecast 2008 airport operations. As reported in Table M-19a and Table M-19b, departure fixes were assigned to aircraft in accordance with the Southern California TRACON standard operating procedures and a departure fix load percentage was extrapolated. Based on the comparative percentages from the Final LAX Master Plan 2000 existing conditions and 2005 No Action simulation input, and the assumption that no major airfield circulation procedure changes would occur between 2005 and 2008, airfield circulation characteristics at LAX are not expected to change after the SAIP time period.

M.1.7.4 2000, 2003, 2005, and 2008 Airfield/Airspace Qualitative Comparison: Arrival/Departure Fix Load – Runway Use

It was assumed in the analysis for the Draft and Final LAX Master Plan, as well as updated information provided by LAWA and the FAA, that no significant changes in the air traffic airspace and airfield operating characteristics are expected for post-project years, such as 2008. Based on this available information, comparisons were made among 2000, which was concluded above to be similar to 2003 Baseline conditions, and post-Project (2008) airspace/airfield simulation assumptions and runway uses as a means to qualify the potential for significant aircraft noise changes. Runway use patterns were developed through the following steps:

- FAA standard operating procedures were used to verify terminal airspace and airfield operations, including arrival/departure fix assignments.
- SIMMOD LAX Master Plan experiments for 2000 and 2005 were used to create arrival/ departure fix loads and annualized runway use.
- The 2008 representative flight schedule was used to establish arrival/departure fix loads and annualized runway use.
- LAX Master Plan assumptions for annual and design day aircraft operations for 2000, Project (2005) conditions, and post-Project (2008) were used to establish the count and use percentages for arrival/departure fixes and annual runway use.

The information contained in Tables M-19a through Table M-23 reflects the data used in this qualitative air traffic airspace and airfield analysis.

Qualitative analysis of the available data resulted in the following conclusions concerning the air traffic airspace and airfield operating characteristics:

- Annual and design day aircraft operations simulated in 2000 (778,061 and 2,275, respectively), Project (2005) (779,500 and 2,279, respectively) and the post-Project 2008 forecast assumptions (781,000 and 2,279, respectively) reflect little change. These results allowed verification of the 2008 air traffic operations environment using the SIMMOD data and assumptions for 2000 and 2005.
- Air traffic terminal airspace procedures for LAX arrivals and departures are expected to remain relatively unchanged based on comparison of information collected from LAX Master Plan assumptions for 2000, 2005, and 2008 and recent FAA input. A comparison between actual 2000 annual counts to forecast 2008 numbers published in the Final LAX Master Plan indicates that the numbers of operations in 2000 are expected to return by 2008. Therefore, any growth that occurs between 2003 and 2008 is not expected to significantly influence

arrival fix and departure runway use because the procedures used in 2000 are expected to be the same in 2008.

- Air traffic airfield operations are expected to remain relatively unchanged based on a comparison of data for 2000, 2005, and 2008. The 2008 airfield operational configuration remains constant: two primary arrival runways and two primary departure runways with the addition of one new center taxiway between Runways 7R-25L and 7L-25R.
- The FAA was not expected to implement any significant changes in airspace or airfield operating procedures in relation to post-project years, such as 2008. This conclusion was based on the main assumption that the runway safety program for LAX, requiring the airfield to be "balanced" in relation to arrivals to the north and south airfield complex, was not expected to change significantly. This national safety program is of high importance to the FAA and change is unlikely; airfield noise abatement procedures affecting arrival and departure procedures and runway use were expected to remain unchanged.
- The development of NLA procedures is expected to minimize the effects of NLA operations on airfield operation.
- Comparison of the shares of heavy jets in the fleet mix between the Final LAX Master Plan 2005 No Action/No Project and 2008 flight schedules indicates that the share of heavy jets is expected to remain the same in 2008 (24 percent and 28 percent, respectively). Due to the longer runway length available on the south airfield, heavy aircraft operations are assigned more frequently to the south airfield during 2003 Baseline conditions (i.e., No Action/No Project). Because the share of heavy jets in the fleet mix is expected to remain consistent between two future years in the Final LAX Master Plan, heavy jet aircraft use of the south airfield is assumed to remain consistent as well.
- Comparison of assumed annual operations, arrival/departure fix load, runway selection, and annual percentage of runway use (**Table M-24** and **Table M-25**) as calculated by the Final LAX Master Plan 2000 existing conditions and 2005 No Action simulations shows a variance of less than 4 percent in any category. The 2008 schedule was extrapolated to provide arrival/departure fix loads that directly relate to runway assignments. Compared with 2005 No Action fix load figures, the variance between 2005 and 2008 remains constant. Based on this result, the 2008 annualized runway use percentage is assumed to be the same as in 2005 No Action conditions.

Table M-24

Simulated Annual Runway Use Percentages: Final LAX Master Plan 2000 Baseline

	Arrivals				Departures			
Runway	**Day**	**Evening**	**Night**	**Total**	**Day**	**Evening**	**Night**	**Total**
06L	1.9%	0.5%	0.2%	2.6%	0.0%	0.0%	0.0%	0.0%
06R	0.0%	0.0%	0.2%	0.2%	2.0%	0.5%	0.4%	2.8%
07L	0.0%	0.0%	0.4%	0.4%	1.7%	0.2%	0.4%	2.3%
07R	1.9%	0.5%	0.1%	2.6%	0.3%	0.1%	0.2%	0.5%
24L	3.2%	0.6%	2.5%	6.3%	31.8%	7.1%	5.3%	44.2%
24R	29.1%	8.6%	1.7%	39.4%	1.0%	0.2%	0.2%	1.4%
25L	30.8%	8.2%	1.7%	40.7%	4.7%	1.7%	2.5%	8.9%
25R	0.9%	0.3%	6.8%	8.0%	28.7%	4.3%	6.7%	39.7%
Total	**67.8%**	**18.7%**	**13.5%**	**100.0%**	**70.3%**	**14.1%**	**15.6%**	**100.0%**

Notes: Day: 7:00 a.m. to 6:59 p.m., Evening: 7:00 p.m. to 9:59 p.m., Night: 10:00 p.m. to 6:59 a.m.
Totals may not add to 100 percent due to rounding.
Cell values of 0.0 indicate runway use of less than 0.05 percent.

Source: Final LAX Master Plan – Landrum & Brown, 2002
Prepared by: Ricondo & Associates, Inc.

Table M-25

Simulated Annual Runway Use Percentages: Final LAX Master Plan 2005 No Action/No Project

	Arrivals				Departures			
Runway	**Day**	**Evening**	**Night**	**Total**	**Day**	**Evening**	**Night**	**Total**
06L	1.8%	0.5%	0.1%	2.4%	0.3%	0.1%	0.0%	0.3%
06R	0.0%	0.0%	0.3%	0.3%	1.6%	0.4%	0.3%	2.2%
07L	0.0%	0.0%	0.3%	0.3%	1.9%	0.2%	0.4%	2.5%
07R	1.8%	0.5%	0.1%	2.5%	0.3%	0.1%	0.1%	0.6%
24L	4.5%	1.0%	3.4%	8.9%	30.5%	5.6%	4.9%	41.0%
24R	25.2%	7.4%	1.6%	34.2%	4.5%	0.8%	0.2%	5.5%
25L	30.7%	8.6%	2.1%	41.4%	7.4%	1.8%	2.2%	11.4%
25R	3.7%	1.7%	4.7%	10.0%	26.9%	3.0%	6.6%	36.5%
Total	**67.8%**	**19.6%**	**12.7%**	**100.0%**	**73.3%**	**11.9%**	**14.8%**	**100.0%**

Notes: Day: 7:00 a.m. to 6:59 p.m., Evening: 7:00 p.m. to 9:59 p.m., Night: 10:00 p.m. to 6:59 a.m.
Totals may not add to 100 percent due to rounding.
Cell values of 0.0 indicate runway use of less than 0.05 percent.

Source: Final LAX Master Plan – Landrum & Brown, 2002
Prepared by: Ricondo & Associates, Inc.

This page intentionally left blank.

Appendix N Other Environmental Resource

This page intentionally left blank.

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Ecological Services
Carlsbad Fish and Wildlife Office
6010 Hidden Valley Road
Carlsbad, California 92009

SEP 1 3 2004

In Reply Refer to:
FWS-LA-1012.6

Post-it® Fax Note 7671	Date 9-15	# of pages ▶ 3
To David Kessler	From Mike Branch	
Co./Dept. FAA	Co. US Fish + Wildlife	
Phone # 310-725-3615	Phone # 760-431-9440	
Fax # 310-725-6848	Fax #	

Mr. David B. Kessler, AICP, AWP-611.2
Acting Supervisor, Planning Section
U.S. Department of Transportation
Federal Aviation Administration
P.O. Box 92007
Los Angeles, CA 90009-2007

Re: Informal Conference for Five Projects at Los Angeles International Airport, Los Angeles County, California

Dear Mr. Kessler:

This letter responds to the Federal Aviation Administration's (FAA) August 25, 2004 determination that the projects listed below are not likely to adversely modify proposed critical habitat for the federally endangered Riverside fairy shrimp (*Streptocephalus woottoni*, "RFS") on the Los Angeles International Airport (LAX):

1. **LAX Master Plan Alternative D as described in our biological opinion issued to FAA on April 20, 2004 (FWS-OR-1012.5)**
2. **LAX Master Plan Alternative D Staging Areas**
3. **Staging Area for Tom Bradley International Terminal Renovation**
4. **Southwest Security Perimeter Fence Project**
5. **Staging Area for In-Line Security Baggage**

We have reviewed the information provided at our July 30, 2004 meeting in Carlsbad and in your letter regarding the above projects. Based on the information you have provided us, we concur with your determination that the proposed projects will not adversely modify RFS proposed critical habitat.

Our concurrence is based on the following:

1. All RFS occupied watersheds, as defined in the biological opinion issued on April 29, 2004 (FWS-OR-1012.5) on the LAX Master Plan Alternative D, will be avoided;

2. All RFS occupied watersheds will be enclosed with orange snow fencing and the outer perimeter of the snow fence will be sand bagged. We expect that these measures will

prevent construction activities and runoff from construction, staging, and other activities from entering RFS occupied watersheds;

3. A biologist experienced with RFS will ensure that all avoidance measures are properly carried out. Compliance with avoidance measures will be ensured via random inspection by a qualified RFS biologist contracted by Los Angeles World Airports. The biologist will have the authority to stop work and/or take corrective action(s) to ensure that RFS occupied watersheds are avoided;

4. The perimeter fence and road will be installed over existing facilities where possible; and

5. The remaining unoccupied depressions on LAX within the RFS proposed critical habitat do not exhibit the necessary constituent elements.

As discussed in your letter, operations and maintenance activities will not occur in the RFS occupied watersheds on LAX except as described in the biological opinion dated April 20, 2004 regarding Ephemerally Wet areas 01, 02, and 06. We are currently in formal consultation with you regarding operations and maintenance activities for the remainder of the RFS occupied watersheds.

As a reminder, the Endangered Species Act of 1973, as amended, requires that after initiation of formal consultation, the Federal action agency may not make any irreversible or irretrievable commitment of resources that limits future options. This practice insures agency actions do not preclude the formulation or implementation of reasonable and prudent alternatives that avoid jeopardizing the continued existence of endangered or threatened species or destroying or modifying their critical habitats.

This completes our informal conference; however, obligations under section 7 of the Endangered Species Act should be reconsidered if: 1) new information reveals effects of the agency action that may affect listed species or critical habitat in a manner or to an extent not previously considered; 2) these actions are subsequently modified in a manner that was not considered; or 3) a new species is listed or critical habitat designated that may be affected by the action.

We appreciate your efforts to comply with requirements regarding federally threatened and/or endangered species at LAX. If you have any questions regarding this letter, please contact Mike Bianchi of this office at (760) 431-9440.

Sincerely,

For Karen A. Goebel
Assistant Field Supervisor

cc:

Jim Ritchie, Deputy Executive Director-Long Range Planning, LAWA
Marie Campbell, President, Sapphos Environmental Inc.

U.S Department of Transportation
Federal Aviation Administration

Western-Pacific Region
Airports Division

Federal Aviation Administration
P.O. Box 92007
Los Angeles, CA 90009-2007

August 25, 2004

Mr. Jim Bartel
Field Supervisor
Carlsbad Field Office
U.S. Fish and Wildlife Service
6010 Hidden Valley Road
Carlsbad, California 92009

Dear Mr. Bartel:

Los Angeles International Airport
Proposed Designation of Critical Habitat

This letter is intended to complete the efforts undertaken by the Federal Aviation Administration (FAA) to confer with the U.S. Fish and Wildlife Service (USFWS) about the proposed critical habitat designation for Riverside fairy shrimp (RFS) (*Streptocephalus woottoni*) in the western portion of Los Angeles International Airport (LAX)[1]. Although FAA believes that the actions addressed in this letter are not likely to adversely modify the proposed critical habitat for RFS, and thus this conference effort was not required pursuant to Title 50, Code of Federal Regulations (CFR) Part 402.10, FAA wishes to remain proactive in its efforts to manage issues related to the RFS. For this reason, FAA requested the conference meeting that was conducted on July 30, 2004 at your office and which was attended by the FAA, the USFWS and Los Angeles World Airports (the Applicant). The proposed designation of critical habitat was published in the *Federal Register* on April 27, 2004.

Background:

The proposed critical habitat on the airport encompasses approximately 108 acres in two distinct parcels identified as Map Units "2a" and "2b" in the April 27, 2004 *Federal Register* notice. These parcels are primarily located within the Airfield Operations Area (AOA) of the airport. This area accommodates the movement of aircraft and various support vehicles, equipment and personnel.

LAX has been in continuous operation since 1928. The airport is the third busiest airport in the United States.

---

[1] Note that this letter concludes actions related to the conference undertaken by FAA with USFWS with respect to the impacts of activities planned at LAX on the areas proposed for designation as critical habitat. FAA does intend, however, to provide further comment on the underlying proposed designation at the time the economic analysis is published in the *Federal Register*.

On May 26, 2004, the FAA submitted comments regarding the appropriateness of the proposed designation for Map Units "2a" and "2b" within the Los Angeles-Orange Vernal Pool Management Area. We provided a copy of the watershed mapping, that was completed in cooperation with the USFWS, which clearly demonstrated that there are only approximately 22 acres of isolated watershed for soils containing the embedded cysts of Riverside fairy shrimp outside the area that was cleared by the April 20, 2004, Biological Opinion for the LAX Master Plan Alternative D. (Enclosure 1, *Watershed Conservation Areas for Indirect Impacts to RFS*).

FAA believes there is no occupied habitat, soils containing embedded cysts of RFS, or watershed contributory to areas with soils containing embedded cysts of RFS located outside the 22 acres identified in Enclosure 1. Our belief is based on the scientific data we have provided to the USFWS, in conjunction with the information provided during the formal Section 7 consultation for LAX Master Plan Alternative D. We are including a list of referenced material that we have previously provided to your office regarding this issue.

Although RFS does not complete the adult phase of their lifecycle on lands located within the 22 acres, these areas contain 1.25 acres of soils containing embedded cysts of RFS that may be suitable to support recovery efforts at off-site locations. These areas are located in six isolated pools with the associated watersheds as mapped under Section 7 Consultation Number FWS-OR-1012.5. These areas are identified as "EW09," "EW12," "EW13," "EW14," "EW15," and "EW16."

On March 29, 2004, FAA resumed the separate formal Section 7 consultation to address the need to complete operations and maintenance activities within these 22 acres. As discussed during the Section 7 consultation effort for Alternative D, the FAA will not authorize any activity within the 22 acres of defined watershed that would have the potential to result in adverse modification of RFS habitat, through direct or indirect impact of soils containing embedded cysts of RFS, until completion of the resumed formal Section 7 consultation effort for resuming normal operations and maintenance activities.

Until the formal Section 7 consultation for operations and maintenance is completed, FAA will require LAWA to conform to BMP's specified in the Biological Opinion for the LAX Master Plan Alternative D for all construction, operation, and maintenance activities within the vicinity of "EW09," "EW12," "EW13," "EW14," "EW15," and "EW16." The defined limits of the watersheds for EW09, EW12, EW13, EW14, EW15, and EW16 shall be fenced with orange snow fencing. Sand bags shall be placed on the exterior edges of the fencing to preclude any water from the staging area from entering the limits of the defined watersheds of EW09, EW12, EW13, EW14, EW15, and EW16.

As a result of our July 30, 2004 conference, the FAA is making the following determinations regarding on-going and future actions at LAX, some, but not all of which pertain to the LAX Master Plan Alternative D. In the following text we will identify the various specific activities that LAWA must perform as it relates to Master Plan Alternative D Direct Construction, Alternative D Construction Staging Areas, Tom Bradley International Terminal (TBIT) remodeling Staging

Area, In-line Baggage Staging Area, Southwest Perimeter Fencing construction, and on-going operations and maintenance actions.

LAX Master Plan Alternative D Direct Construction

As discussed in our July 30th conference, the FAA received a Biological Opinion issued by the USFWS (reference Consultation Number FWS-OR-1012.5) dated April 20, 2004. The Biological Opinion addressed direct impacts to soils containing the RFS in three separate pools on the airport (Reference Ephemerally Wetted (EW) areas "EW01," "EW02," and "EW06") under Alternative D. Pools "EW01," "EW02" and "EW06" are outside of the boundaries of proposed critical habitat on the airport identified as Map Units "2a" and "2b" in the April 27, 2004, *Federal Register* notice. Therefore, FAA has determined that the direct proposed construction projects of LAX Master Plan Alternative D will have no effect on the proposed critical habitat for RFS.

This determination is based on the Section 7 consultation resulting in the April 20, 2004, Biological Opinion. The Biological Opinion identifies the requirements for removal of soils containing embedded cysts of RFS from "EW01," "EW02," and "EW06" and translocation to another site. Any work undertaken in the vicinity of these sites shall conform to the conservation measures identified in the Biological Opinion. "EW06" is located within the northern margin of the TBIT staging area. "EW06" shall be designated as an off-limits work area on a plan sheet and in the written specifications for all projects allowing staging activities south of World Way West and within 150 feet of "EW06." The defined limits of "EW06" watershed (Reference Biological Opinion FWS-OR-1012.5) shall be fenced with orange snow fencing. Sand bags shall be placed on the exterior edges of the fencing to preclude any water from the staging area from entering the limits of "EW06." These measures shall stay in place until soils containing embedded cysts of RFS can be salvaged from the site. Construction monitoring by a biologist knowledgeable of the ecology of RFS shall be conducted via random inspections at a rate of no less than once per week to ensure that these measures are enforced throughout the construction period. Construction monitoring shall cease upon completion of salvage actions of soils containing embedded cysts of RFS. FAA will provide the name and qualifications of the biologist to the USFWS not less than one week prior to beginning construction operations.

LAX Master Plan Alternative D Staging Areas.

As described in the 2001 Draft Environmental Impact Statement/ Environmental Impact Report and the 2003 Supplement to the Draft Environmental Impact Statement/Environmental Impact Report, LAWA proposes to use the areas south of World Way West and west of the approach ends of Runways 7L/7R for construction staging.

The FAA has determined that the construction staging areas for Alternative D will not adversely modify proposed critical habitat for RFS. This determination is based on FAA's belief that there is no occupied habitat, soils containing embedded cysts of RFS, or watershed contributory to areas with soils containing embedded cysts of RFS located outside the 22 acres of defined watershed identified in Enclosure 1. Our belief is based on the scientific data we have provided to the USFWS, in conjunction with the information provided during the formal Section 7 consultation for LAX Master Plan Alternative D. Further, our determination of no adverse modification to habitat is based on a jurisdictional delineation by the U.S. Army Corps of Engineers and directed surveys for RFS in all areas of the AOA that historically ponded water. The FAA has also determined that the majority of the AOA does not have the primary constituent elements that provide suitable or potentially suitable habitat for RFS (Enclosure 2, *Areas with No Habitat Suitable for RFS*).

The April 20, 2004, Biological Opinion identifies the limits of the contributory watersheds for those sites with soils containing embedded cysts of RFS. The Biological Opinion requires the implementation of best management practices (BMP) to protect the contributory watersheds. FAA is currently engaged in a formal Section 7 consultation for ongoing operations and maintenance activities that affect these sites. Until that Section 7 consultation is completed, FAA will require LAWA to conform to BMP's specified in the Biological Opinion for all construction, operation, and maintenance activities within the vicinity of EW09, EW12, EW13, EW14, EW15, and EW16. The defined limits of the watersheds of EW09, EW12, EW13, EW14, EW15, and EW16 shall be fenced with orange snow fencing. Sand bags shall be placed on the exterior edges of the fencing to preclude any water from the staging area from entering the limits of the defined watersheds of EW09, EW12, EW13, EW14, EW15, and EW16. Construction monitoring by a biologist knowledgeable of the ecology of RFS shall be conducted throughout the construction period. Construction monitoring by a biologist knowledgeable of the ecology of RFS shall be conducted via random inspections at a rate of no less than once per week to ensure that these measures are enforced throughout the construction period. These measures shall stay in place until FAA completes the Section 7 consultation for ongoing operations and maintenance activities. FAA will provide the name and qualifications of the biologist to the USFWS not less than one week prior to beginning construction operations.

Staging Area for Tom Bradley International Terminal Renovation

LAWA has proposed a $152 million project to remodel the interior of the Tom Bradley International Terminal (TBIT) for security purposes. In order to accomplish this task, the construction staging area for the project is located near World Way West (See Enclosure 3). This staging area is outside of the area proposed by the USFWS for critical Habitat for RFS. However, EW06 is located within the northern margin of the proposed TBIT staging area.

Based on the various conservation methods specified in the April 20, 2004 Biological Opinion, FAA has determined that the proposed staging area for the TBIT renovation project will not adversely modify the proposed critical habitat for RFS. FAA also bases this determination on the fact that EW06 is located outside of the area proposed by the Service for critical habitat as mapped under consultation number FWS-OR-1012.5.

Further, EW06 shall be designated as an off-limits work area on a plan sheet and in the written specifications for all projects allowing staging activities south of World Way West and within 150 feet of EW06. The defined limits of EW06 watershed shall be fenced with orange snow fencing. Sand bags shall be placed on the exterior edges of the fencing to preclude any water from the staging area from entering the limits of EW06. These measures shall stay in place until soils containing embedded cysts of RFS can be salvaged from the site. Construction monitoring by a biologist knowledgeable of the ecology of RFS shall be conducted via random inspections at a rate of no less than once per week to ensure that these measures are enforced throughout the construction period. Construction monitoring shall cease upon completion of salvage actions of soils containing embedded cysts of RFS. FAA will provide the name and qualifications of the biologist to the USFWS not less than one week prior to beginning construction operations.

Southwest Security Perimeter Fence Project

The Southwest Security Perimeter Fence Project will install an enhanced security fence and an all-weather patrol/perimeter road in the southwestern portion of the AOA. This project is being undertaken pursuant to the requirements of the TSA (Enclosure 4, Southwest Security Perimeter Fence Project). Whenever practicable, the security fence has been aligned along the existing facilities within the AOA. Three-strand barbed wire at the top of the fence will be replaced with concertina wire. The standard chain-link fencing will be replaced with a more robust fencing material. Security cameras will be mounted on the fence, as well.

The Southwest Security Perimeter Fence Project is in the vicinity of the watersheds for EW09, EW12, EW13, EW14, EW15, and EW16. Therefore, the BMP specified in the Biological Opinion for all construction, operation, and maintenance activities within the vicinity of EW09, EW12, EW13, EW14, EW15, and EW16 shall be incorporated into the plans and specifications for the project. The limits of defined watersheds of EW09, EW12, EW13, EW14, EW15, and EW16 shall be fenced with orange snow fencing. Sand bags shall be placed on the exterior edges of the fencing to preclude any water from the staging area from entering the limits of the defined watersheds of EW09, EW12, EW13, EW14, EW15, and EW16. Construction monitoring by a biologist knowledgeable of the ecology of RFS shall be conducted via random inspections at a rate of no less than once per week to ensure that these measures are enforced throughout the construction period. These measures shall stay in place until the project is completed or alternative measures are established as an outcome of the FAA Section 7 consultation for ongoing operations and maintenance activities. FAA will provide the name and qualifications of the biologist to the USFWS not less than one week prior to beginning construction operations.

Staging Area for In-Line Security Baggage

The staging area for LAX In-Line Security Baggage projects for the various terminals at the airport is located in the northwestern portion of the AOA of airport outside of the area proposed for critical habitat near at the intersection of Pershing Drive and Westchester Parkway. As shown on Enclosure 6, this site is located well outside of the defined watersheds for EW01 and EW02 that were addressed in the April 20, 2004 Biological Opinion.

This project is being undertaken pursuant to the requirements of the Transportation Security Administration (TSA) and includes the construction of a new "matrix" building to house screening equipment and TSA personnel plus a separate facility for interline baggage. It will also be used to support comparable improvements at Terminals 1 through 8 that are scheduled to begin in December 2004 and be completed in April 2008. The improvements require 6.39 acres for crushing and stockpiling debris resulting from construction. The priority for the improvement is "very high."

While EW01 and EW02 are well outside of the In-line Security Baggage Staging Area, these sites shall be designated as an off-limits work area on a plan sheet and in the written specifications for allowing staging activities within 500 feet of EW01 and EW02. The defined limits of EW01 and EW02 watershed's shall be fenced with orange snow fencing. Sand bags shall be placed on the exterior edges of the fencing to preclude any water from the staging area from entering the limits of EW06 (See Enclosure 7 for typical layout of the sand bags). These measures shall stay in place until soils containing embedded cysts of RFS can be salvaged from the site. Construction monitoring by a biologist knowledgeable of the ecology of RFS shall be conducted via random inspections at a rate of no less than once per week to ensure that these measures are enforced throughout the construction period. Construction monitoring shall cease upon completion of salvage actions of soils containing embedded cysts of RFS. FAA will provide the name and qualifications of the biologist to the USFWS not less than one week prior to beginning construction operations.

Operations and Maintenance and Activities

As agreed during our conference on July 30, 2004, in your offices, FAA and LAWA will continue all construction, operations, and maintenance activities outside of the watersheds for the nine sites that have soils that contain embedded cysts of RFS, as mapped under consultation number FWS-OR-1012.5 for the LAX Master Plan Alternative D. These construction, operations and maintenances actions will occur without additional conference with USFWS related to proposed critical habitat designations for RFS. The USFWS and FAA determined that additional conferences are not necessary for operations and maintenance activities outside of the watersheds for the nine remaining sites containing embedded cysts of RFS. The USFWS and FAA based this determination on the proposal by LAWA and FAA to install fencing and sandbags to protect the watersheds until the resumed Section 7 consultation effort on operations and maintenance is completed. Therefore, LAWA will continue to perform its required operations and maintenance activities, outside the watersheds for the nine sites, at LAX pursuant to 14 CFR Part 139.

The FAA is committed to continue to work with the USFWS to identify conservation measures that support recovery of RFS consistent with our mission to ensure the safe and efficient use of navigable airspace at LAX. In order to assist us in completing our Final Environmental Impact Statement on Alternative D, in a timely manner, we respectfully request your written concurrence with the above determinations as soon as possible.

If you have any questions concerning this matter, please call me at 310/725-3615.

Sincerely,

ORIGINAL SIGNED BY
DAVID B. KESSLER

David B. Kessler, AICP
Environmental Protection Specialist

Enclosures: 1. Watershed Conservation Areas for Indirect Impacts to RFS
2. Areas with No habitat Suitability for RFS
3. TBIT Staging Area
4. Southwest Security Perimeter Fence Project
5. Project Staging Areas within the South Airfield
6. In-line Baggage Staging Area within the North Airfield
7. Plan and Profile of Temporary Environmental Protection Berm (sand bags) [two sheets].

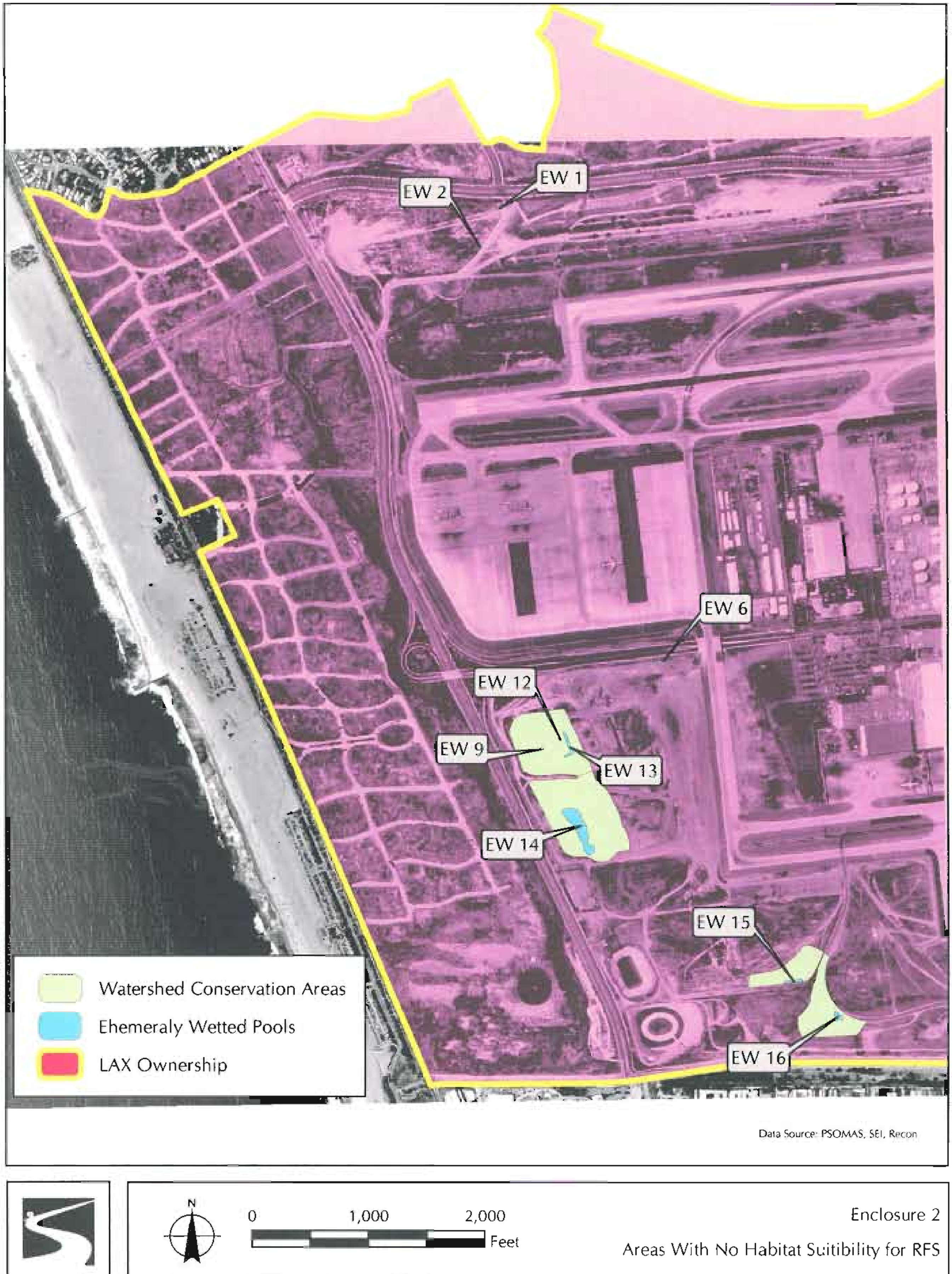
cc: APP-600, AGC-620, LAWA, Karen Goebel - USFWS

Watershed Conservation Areas

Ehemeraly Wetted Pools

Enclosure 1

Watershed Conservation for Indirect Impacts to RFS



Enclosure 2

Areas With No Habitat Suitibility for RFS

2004 Proposed Riverside Fairy Shrimp Critical Habitat

TBIT Staging Area

Enclosure 3

TBIT Staging Area

Southwest Perimeter Security Fence Grading Boundary

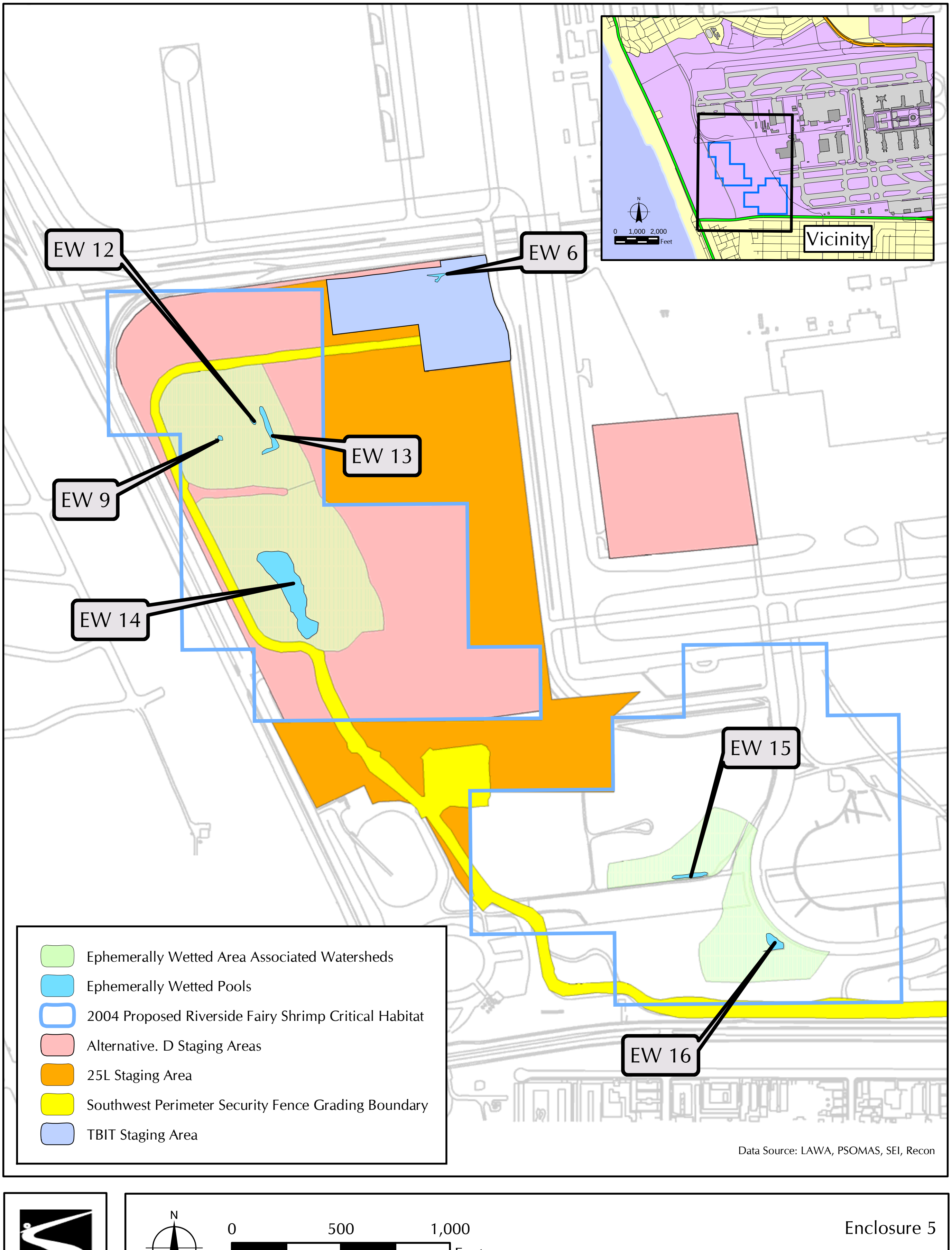
2004 Proposed Riverside Fairy Shrimp Critical Habitat

Watershed Conservation Areas

Ehemeraly Wetted Pools

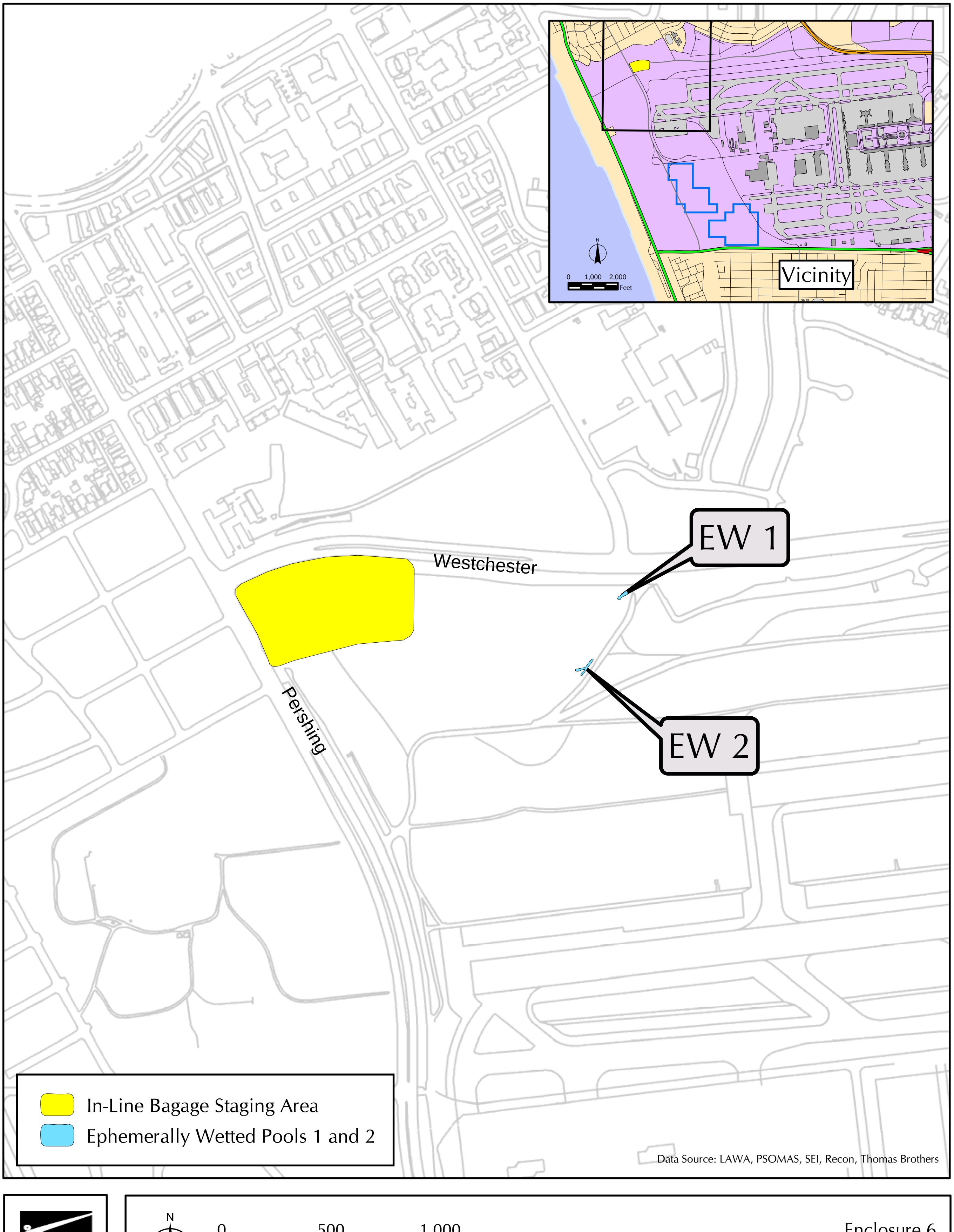
Enclosure 4

Southwest Perimeter Security Fence Project



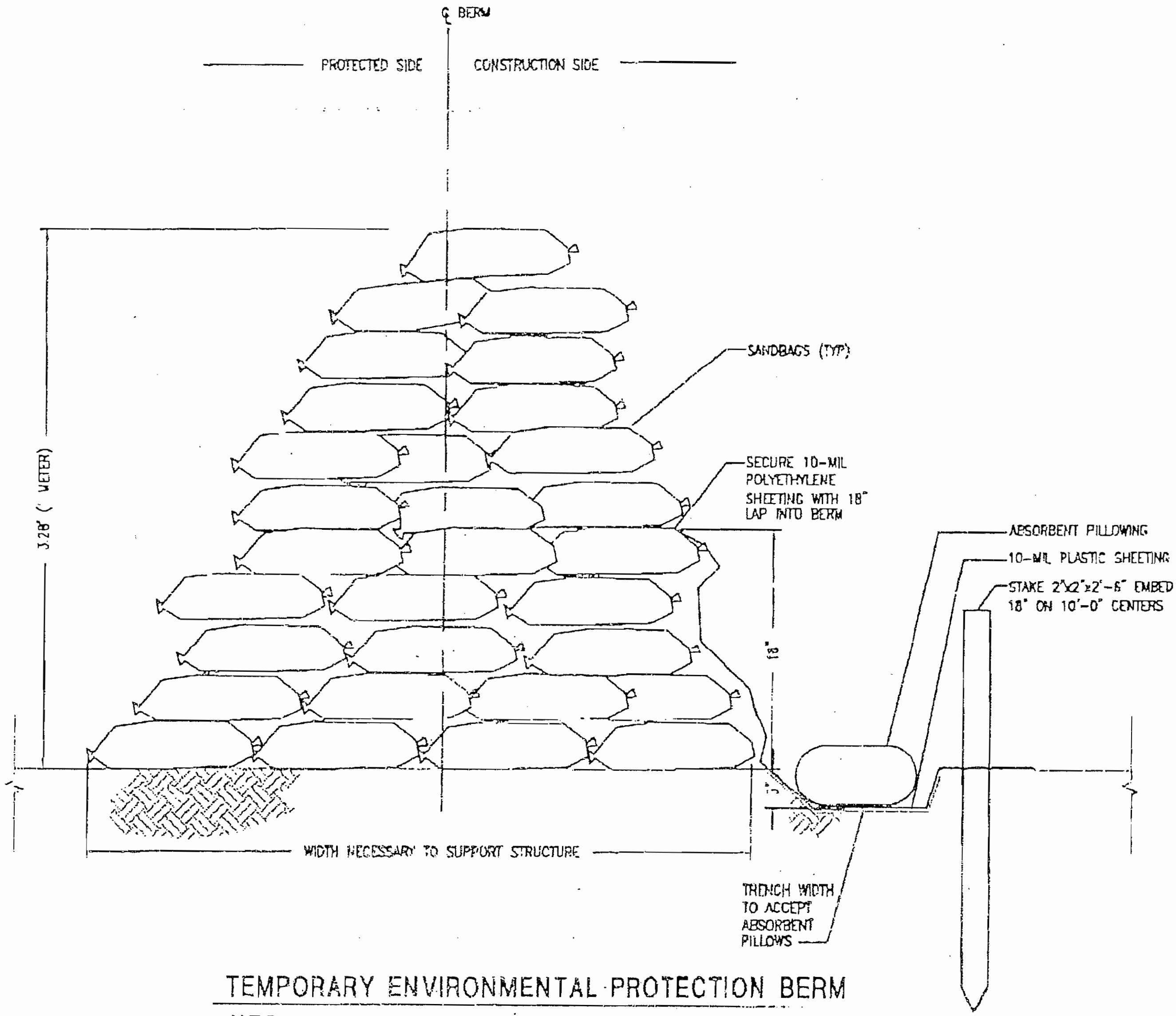
Enclosure 5

Project Staging Areas Within the South Airfield



Enclosure 6

In-Line Baggage Staging Area Within the North Airfield

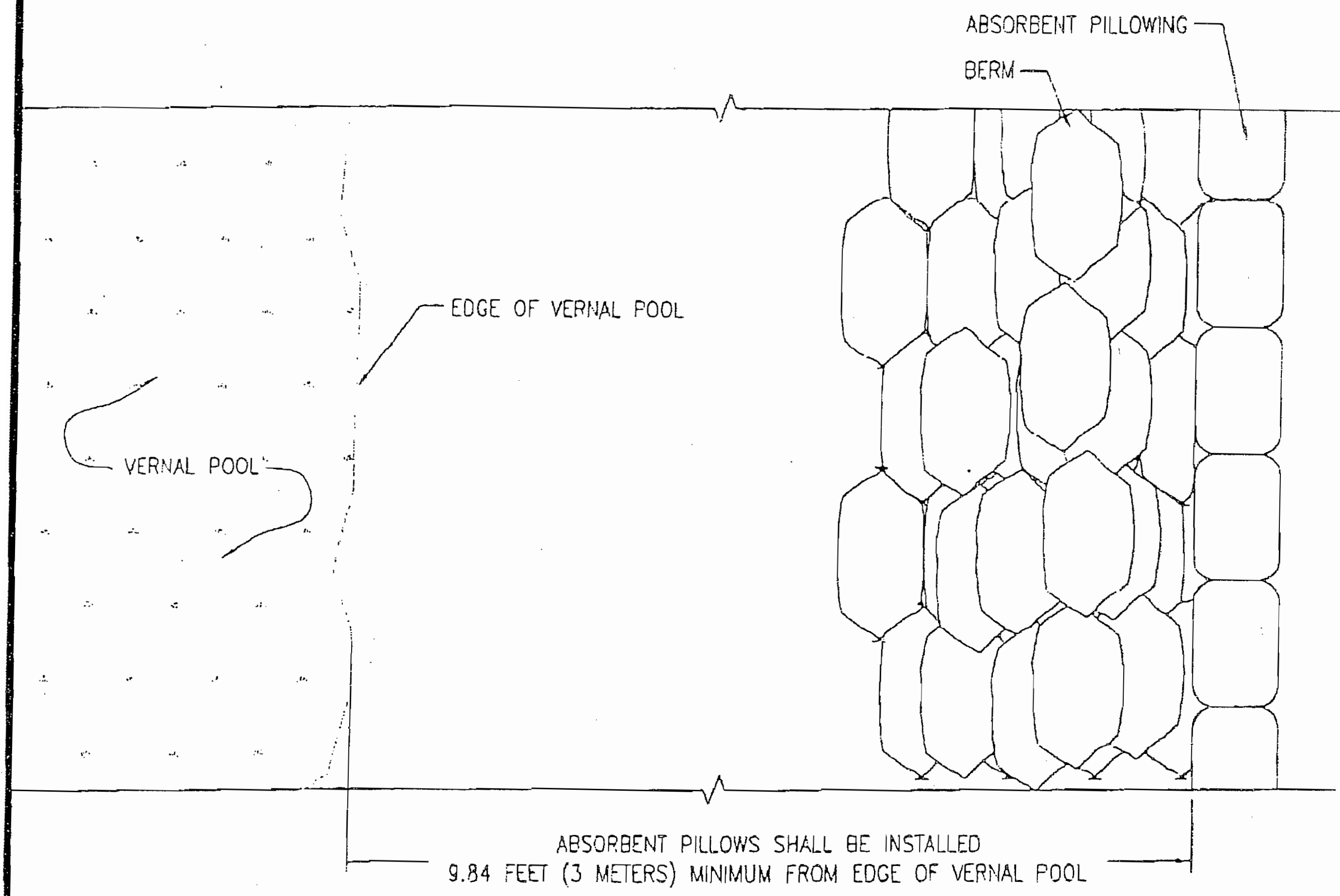


TEMPORARY ENVIRONMENTAL PROTECTION BERM

NTS

URS
AIRPORT SERVICES GROUP
CENTURY SQUARE
1501 4TH AVENUE, SUITE 1400
SEATTLE, WA 98101
PHONE: (206) 438-2700
FAX: (206) 438-2699

LOS ANGELES INTERNATIONAL AIRPORT		
REFERENCE SHEET: --		
RFI:		
DATE: 08/05/04	BY: JS	SHEET: SK-XX1
SCALE: NONE		



TEMPORARY ENVIRONMENTAL PROTECTION BERM - PLAN VIEW

NTS

URS

LOS ANGELES INTERNATIONAL AIRPORT

REFERENCE SHEET: --	
RFI:	
DATE: 08/05/04	BY: JS
SCALE: NONE	SHEET: SK-XX2