4.7 Construction Surface Transportation

4.7.1 Introduction

The traffic analysis presented in this section addresses the construction traffic impacts specific to the proposed MSC North Project. The construction traffic impacts were determined for both the peak construction period for the proposed MSC North Project (December 2018) and the peak cumulative condition (December 2018). The peak construction month for the proposed MSC North Project corresponds to the peak cumulative condition, which includes traffic from the construction of other known projects anticipated to be under construction during the approximate 60-month construction schedule.

Implementation of the future phase(s) of the MSC Program would also generate vehicle traffic associated with workers traveling to and from the construction employee parking areas, associated shuttle trips between the parking areas and the construction site, haul/delivery trips, and miscellaneous construction-related travel. These trips could result in traffic impacts on the local roadway system during the construction period. However, these construction trips were analyzed in the LAX Master Plan EIR at a program level and would not be substantively different. Thus, construction traffic for the future phase(s) of the MSC Program is not analyzed in this EIR, as identified in the Initial Study (see **Appendix A**).

This proposed MSC North Project construction traffic analysis incorporates relevant analysis and assumptions from the Los Angeles International Airport (LAX or the Airport) Master Plan EIR,[1] the South Airfield Improvement Project (SAIP) EIR,[2] the Crossfield Taxiway Project (CFTP) EIR,[3] Bradley West Project EIR,[4] Central Utility Plant Replacement Project (CUP-RP) EIR,[5] Runway 7L/25R Runway Safety Area (RSA) and Associated Improvements Project Draft EIR,[6] and the West Aircraft Maintenance Area (WAMA) Project Draft EIR.[7] The traffic conditions resulting from the construction of the CFTP, Bradley West Project, CUP-RP, Runway 7L/25R RSA Project, WAMA Project, and the proposed MSC North Project are similar in terms of regional approach/departure patterns and construction peaking characteristics. Therefore, the

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1 City of Los Angeles, Final Environmental Impact Report for Los Angeles International Airport (LAX) Proposed Master Plan Improvements, April 2004.

2 City of Los Angeles, Los Angeles World Airports, Final Environmental Impact Report for South Airfield Improvement Project, Los Angeles International Airport (LAX), October 2005.

3 City of Los Angeles, Los Angeles World Airports, Final Environmental Impact Report for Crossfield Taxiway Project, Los Angeles International Airport (LAX), January 2009.

4 City of Los Angeles, Los Angeles World Airports, Final Environmental Impact Report for Bradley West Project, Los Angeles International Airport (LAX), September 2009.

5 City of Los Angeles, Los Angeles World Airports, Final Environmental Impact Report for Central Utility Plant Project, Los Angeles International Airport (LAX), October 2009.

6 City of Los Angeles, Los Angeles World Airports, Draft Environmental Impact Report for Los Angeles International Airport Runway 7L/25R Runway Safety Area (RSA) and Associated Improvements Project, September 2013.

7 City of Los Angeles, Los Angeles World Airports, Draft Environmental Impact Report for West Aircraft Maintenance Area (WAMA) Project, October 2013.

analysis procedures and data already known from these other projects were applied and updated as appropriate for the proposed MSC North Project.

Construction employee parking and material staging for deliveries associated with the construction of the proposed MSC North Project would be split between two lots located on the west side of the Airport. One lot is at the eastern end of World Way West used for all construction employee parking and some material staging and one lot is bounded by Westchester Parkway on the north and Pershing Drive on the west, which will be used for material staging only. This analysis assesses anticipated construction-related traffic impacts at off-airport intersections associated with the construction of the proposed MSC North Project, including the traffic impacts of construction employee vehicles, construction equipment, material delivery trucks, and truck trips associated with the MSC North Project.

This analysis addresses, in particular, the impacts from construction-related traffic that would occur during the peak construction period for the proposed MSC North Project. The construction traffic analysis combines peak Project-related traffic volumes (which do not correspond with commuter peak hours) with roadway traffic volumes occurring adjacent to the AM and PM commuter peak hours. The analysis provides an estimate of the construction-related traffic impacts within the off-Airport public roadway system serving construction-related vehicles generated by the proposed MSC North Project.

Prior to the preparation of this EIR, an Initial Study (see Appendix A) was prepared using the CEQA Environmental Checklist Form to assess potential environmental impacts associated with transportation/circulation. For several issues related to transportation/circulation the Initial Study found that the proposed MSC North Project and future phase(s) of the MSC Program would result in “no impact” and thus, no further analysis of these topics in an EIR was required. The thresholds not addressed further include:

- Potential impacts from a change in air traffic patterns, including either an increase in traffic levels or a change in location, that would result in substantial safety risks were evaluated and determined to have "No Impact" in the Initial Study as the proposed MSC North Project and future phase(s) of the MSC Program would not change air traffic patterns or increase air traffic levels.
- Potential impacts related to substantially increased hazards due to a design feature (e.g., sharp curves) or incompatible uses (e.g., farm equipment); potential impacts that would result in inadequate emergency access; or potential impacts that would result in a conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities, were evaluated and determined to have "No Impact" in the Initial Study. As the proposed MSC North Project and future phase(s) of the MSC Program would not change existing road alignments or geometrics, would not include new public streets, and would not remove existing public streets further analysis of these topics in an EIR was not required. Furthermore, the proposed MSC North Project would not change existing bicycle or pedestrian facilities, and would not create new demand for bicycle, pedestrian, or transit facilities and services. Changes in demand for bicycle, pedestrian, or transit facilities and services associated with the future phase(s) of the MSC Program were adequately addressed in the Master Plan EIR.
- Potential operational impacts related to conflicts with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation

system and potential conflicts with an applicable Congestion Management Program (CMP), including, but not limited to level of service standards (LOS) and travel demand measures were determined to be less than significant. As the future operation of the proposed MSC North Project would not result in operational changes to traffic activity and traffic flows within the Airport study area, the proposed MSC North Project would not increase the number of employees or airline passengers traveling to/through LAX. Therefore, an operational analysis of future traffic activity associated with proposed MSC North Project operations is not necessary. However, because the future phase(s) of the MSC Program assumes that passenger vehicles will continue to access the CTA, which is different than what was assumed in the LAX Master Plan EIR, a program-level operational traffic analysis was performed for the future phase(s) of the MSC Program (see Section 4.6 of this EIR).

4.7.2 Methodology

4.7.2.1 Overview

As noted above, this analysis focuses on construction impacts of the proposed MSC North Project. The analysis methodology for this EIR is based largely on the approach and data used for the Bradley West Project EIR, CUP-RP EIR, RSA South EIR, and WAMA EIR. The analyses procedures and data from these previous projects are applicable to the proposed MSC North Project because the construction of the projects overlap and share many of the same characteristics related to vehicle peaking patterns and travel paths.

The traffic study area includes intersections and roadways anticipated to be directly or indirectly affected by the construction of the proposed MSC North Project. Construction employee parking and material staging for the MSC North Project are proposed at two locations in the vicinity of the Airport, as further described below. The traffic study area for this analysis includes those roads and intersections that would most likely be used by employee and truck traffic associated with construction of the proposed MSC North Project. The procedures are also consistent with the information and requirements defined in City of Los Angeles Department of Transportation (LADOT) *Traffic Study Policies and Procedures*, notwithstanding that a construction traffic analysis is not typically required by LADOT.

The following steps and assumptions were used to develop the analysis methodology:

- The traffic study area was defined according to the travel paths that would be used by construction traffic to access the MSC North Project site, equipment, materials staging, and parking areas. Construction delivery vehicle travel paths would be regulated according to the construction traffic management plan required through the LAX Master Plan Mitigation Monitoring and Reporting Program (MMRP).[8] The construction of the proposed MSC North Project would occur at the eastern end of World Way West, with primary access for construction employee vehicles provided by Pershing Drive and World Way West. A second lot used for staging is located along Westchester Parkway near the intersection of Pershing Drive, with access provided via Westchester Parkway.

[8] LAX Master Plan commitments that are applicable to construction traffic are applied to this Project to mitigate potential construction-related impacts.

- Intersection turning movement traffic volume data were collected at the key traffic study area intersections on Tuesday, April 30, 2013, and on Wednesday, May 15, 2013, from 6:00 AM to 10:00 AM and from 3:00 PM to 6:00 PM. These extended traffic count periods were established to obtain traffic count data during the (a) AM peak inbound hour for construction employees and deliveries and (b) the PM peak outbound hour for construction employees and deliveries. Pursuant to the mitigation requirements set forth in the LAX Master Plan EIR, construction truck delivery and construction employee traffic activity would not be scheduled during the morning or afternoon commute peak periods which were also counted during the data collection survey. The estimated peak hours for construction-related traffic were determined by reviewing the estimated hourly construction-related trip activity for the proposed MSC North Project developed for this study.[9] The AM peak construction hour was determined to be 6:00 AM to 7:00 AM and the PM peak construction hour was determined to be 3:30 PM to 4:30 PM, both of which occur outside of the normal peak commuter periods.
- Key off-Airport intersections, including intersections with freeway ramps in the proposed traffic study area, were analyzed. Impacts to roadway segments and freeway links were not analyzed because construction-related traffic activity is anticipated to occur outside of peak commute periods.

The following describes the methodology and assumptions underlying the various traffic conditions considered in this traffic analysis, and how the proposed MSC North Project's direct and indirect (cumulative) impacts were identified relative to those conditions.

4.7.2.2 Determination of Existing Traffic Conditions

Baseline conditions used in the analysis of Project-related construction traffic impacts are defined as the existing conditions within the traffic study area at the time the Notice of Preparation (NOP) was published (February 2013). Intersection turning movement volumes were collected in April and May 2013. These volumes were used as a basis for preparing the traffic analysis and assessing potential Project-related traffic impacts. The following steps were taken to develop baseline traffic conditions information.

Prepare Model of Study Area Roadways and Intersections--A model of traffic study area roadways and intersections was developed to assist with intersection capacity analysis (i.e., geometric configuration, quantitative delineation of capacity, and operational characteristics of intersections likely to be affected by the proposed MSC North Project's traffic). The model was developed using TRAFFIX,[10] a traffic analysis software program designed for developing traffic forecasts and analyzing intersection and roadway capacities. The model uses widely accepted traffic engineering methodologies and procedures, including the Transportation Research Board Critical Movement Analysis (CMA) Circular 212 Planning Method,[11] which is the required intersection analysis methodology for traffic impact studies conducted within the City of Los Angeles.

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9 CONNICO, Incorporated, LAX MSC North Vehicle Schedule REV2 2013.08.09.pdf, August 2013 (employee trip volumes, truck trips, vehicle schedule times).

10 Dowling Associates, TRAFFIX Version 7.7.

11 Transportation Research Board, Transportation Research Circular No. 212, Interim Materials on Highway Capacity, January 1980.

Calculate Baseline Levels of Service--Intersection levels of service were calculated using the 2013 intersection traffic volumes coinciding with the AM construction peak hour (6:00 AM to 7:00 AM) and the PM construction peak hour (3:30 PM to 4:30 PM). These levels of service defined existing baseline conditions which served as a basis of comparison for assessing potential impacts generated by construction of the proposed MSC North Project.

4.7.2.3 Determination of Baseline Plus Peak Proposed Project Traffic Conditions

This traffic analysis was designed to assess the direct impacts associated with the construction of the proposed MSC North Project, as well as the effects of future cumulative conditions. For purposes of determining direct Project-related impacts, a traffic scenario was developed consisting of baseline traffic described above plus the additional traffic that would be generated by the proposed MSC North Project construction activity during the peak construction period. The following steps were conducted to determine the Baseline Plus Peak proposed MSC North Project traffic volumes.

Analyze Peak Proposed Project Construction Activity--Vehicle trips associated with construction of the proposed MSC North Project during the peak month of construction activity were estimated and distributed throughout the traffic study area network. The trips were estimated based on a review of the proposed MSC North Project construction schedules and associated workforce levels and equipment, including trucks and other construction vehicles. Project-related construction trips were summarized to delineate peak month inbound and outbound construction employee trips and truck trips by hour of the day. The estimate of proposed MSC North Project construction trips was based on construction employee workload schedules prepared for the proposed MSC North Project.[12] The construction employee trip distribution patterns were based on regional patterns developed for the proposed MSC North Project and previous LAWA construction traffic studies using the modeling results prepared for the LAX Master Plan EIR, specific haul route information, airline passenger survey information, and regional population distributions.

Estimate Baseline Plus Peak Proposed Project Traffic Volumes--The estimated Baseline Plus Peak proposed MSC North Project (referred to hereinafter as Baseline Plus) traffic volumes were estimated by adding the MSC North Project volumes during the peak proposed Project activity period (anticipated to occur in December 2018) to the baseline volumes.

4.7.2.4 Delineation of Future Cumulative Traffic Conditions

In addition to the Baseline Plus Project condition described above, future cumulative traffic conditions were analyzed. In accordance with Section 15355 of the *CEQA Guidelines*, cumulative impacts are defined as "two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts." For this traffic analysis, cumulative traffic conditions were assessed for the period during the overall proposed MSC North Project construction program when the cumulative traffic associated with other LAX development programs would be greatest. This peak cumulative period was estimated to occur during December 2018.

[12] CONNICO, Incorporated, LAX MSC North Vehicle Schedule REV2 2013.08.09.pdf, August 2013.

In accordance with *CEQA Guidelines* Section 15130(b), there are essentially two options for delineating cumulative development for evaluating potential impacts:

a. List past, present, and reasonably foreseeable future projects producing related or cumulative impacts, including, if necessary, those projects outside the control of the agency, or

b. Summarize projections contained in an adopted general plan or related planning document, or in a prior adopted or certified environmental document, which described or evaluated regional or area wide conditions contributing to the cumulative impact.

For purposes of the proposed MSC North Project, the first of the two options, commonly referred to as "the list approach," was used to delineate cumulative projects - see Section 4.7.5 below for a description of cumulative projects and specific project listings and descriptions regarding how and when the traffic generation related to those projects would overlap with that of the proposed MSC North Project. Background traffic was increased to reflect additional growth from non-specific projects, which adds an element of the second option to result in a cumulative impacts analysis that is more conservative.

Cumulative conditions were determined using a process that requires the development of the two sets of future cumulative traffic volume conditions, as described below.

Cumulative Traffic (December 2018) Without Project

This scenario combines baseline traffic volumes with growth from all sources other than the MSC North Project to determine the overall peak cumulative traffic conditions during the construction period for the proposed MSC North Project. The following steps were taken to develop the traffic volumes for this scenario.

Develop December 2018 Focused Traffic Study Area Roadway Network--The TRAFFIX model was updated, as necessary, to reflect any committed and funded traffic study area transportation improvements that would be in place by December 2018.

Estimate December 2018 Cumulative Traffic Volumes--Cumulative (December 2018) traffic volumes were estimated using the following process:

- Baseline 2013 traffic volumes were multiplied by a growth factor of two percent per year to account for local background traffic growth through 2018. This annual growth rate assumption is consistent with previous direction first provided by LADOT for use in the SAIP[13] and subsequently used for construction traffic studies prepared for the CFTP EIR, Bradley West Project EIR, CUP-RP EIR, Runway 7L/25R RSA Project Draft EIR, and the WAMA Project Draft EIR.
- Construction trips for development projects on Airport property that are expected to commence during the period of proposed MSC North Project construction were directly estimated and included in the analysis. Construction trips associated with the peak period of cumulative construction (December 2018) were estimated based on the estimated labor component of total construction cost and the timeline for each concurrent project. The related projects that were considered as part of this analysis

[13] City of Los Angeles, Los Angeles World Airports, Final Environmental Impact Report for South Airfield Improvement Project, Los Angeles International Airport (LAX), October 2005.

and the estimated trips associated with these related projects are described in more detail below.

Future Cumulative Traffic (December 2018) With Project

The Project-related construction traffic volumes occurring during the peak cumulative period were added to the Cumulative Traffic (December 2018) "Without Project" traffic volumes described in the previous section. This is a realistic traffic scenario that is intended to represent the estimated total peak hour traffic volumes (consisting of background traffic, traffic related to ambient growth, traffic related to other projects, and proposed MSC North Project construction traffic) that would use the traffic study area intersections during the overall cumulative peak in December 2018.

4.7.2.5 Delineation of Impacts and Mitigation Measures

The following steps were conducted to calculate intersection levels of service, identify impacts, and identify potential mitigation measures, if necessary.

Analyze Intersection and Roadway Levels of Service--The levels of service on the traffic study area intersections and roadways were analyzed using TRAFFIX. Intersection LOS was estimated using the CMA planning level methodology, as defined in Transportation Research Board Circular 212,[14] in accordance with LADOT *Traffic Studies Policies and Procedures* guidelines,[15] and the *L.A. CEQA Thresholds Guide*.[16] Intersection LOS was analyzed for the following conditions:

- Existing;
- Existing Plus Peak Project Traffic;
- Future Cumulative Traffic (December 2018) Without Project; and
- Future Cumulative Traffic (December 2018) With Project.

Identify Project Impacts--Project-related impacts associated with construction of the proposed MSC North Project were identified. Intersections that were anticipated to be significantly affected by Project-related construction were identified according to the criteria established in the LADOT Traffic Studies Policies and Procedures guidelines. Impacts were determined by comparing the LOS results for the following:

- **Baseline Plus Peak Proposed Project Compared with Baseline:** This comparison is utilized to isolate the potential impacts of the proposed MSC North Project.
- **Cumulative Impacts:** Cumulative impacts were determined using a two-step process. Initially, the Cumulative Traffic (December 2018) With Project condition was compared to the baseline condition to determine if a cumulative impact would occur relative to baseline. An impact was deemed significant if it would exceed the allowable threshold of significance defined in the *LADOT Guidelines*. If a cumulative impact were determined,

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[14] Transportation Research Board, Transportation Research Circular No. 212, Interim Materials on Highway Capacity, January 1980.

[15] Los Angeles Department of Transportation, Traffic Study Policies and Procedures, December 2010.

[16] City of Los Angeles, Department of City Planning, *L*.A. CEQA Thresholds Guide, Your Resource for Preparing CEQA Analysis in Los Angeles, 2006.

then a second comparison of the With Project vs. the Without Project LOS conditions was made to determine if the project's contribution of the cumulative impact is determined to be "cumulatively considerable" in accordance with the impact thresholds defined in Section 4.7.6 below.

Identify Potential Mitigation Measures: The traffic analysis methodology included provisions to identify mitigation measures, as necessary, for intersections determined to be significantly affected by construction-related traffic. The identification of appropriate mitigation measures includes integration of the applicable LAX Master Plan commitments intended to address construction-related impacts.

4.7.3 Existing Conditions

4.7.3.1 Regulatory Context

The *Guide for the Preparation of Traffic Impact Studies* (California Department of Transportation [Caltrans] 2002) identifies circumstances under which Caltrans believes that a Traffic Impact Study would be required, information that Caltrans believes should be included in the study, analysis scenarios, and guidance on acceptable analysis methodologies. However, a Caltrans Traffic Impact Study was not required for the proposed MSC North Project given that the proposed MSC North Project would not contribute vehicle trips to use the study area roadways and freeways during the commuter peak hour periods.

The LADOT *Traffic Study Policies and Procedures* manual requires that a Traffic Study be prepared if the following criteria are met:

- A project is likely to add 500 or more daily trips
- A project is likely to add 43 or more AM or PM peak hour trips

Based on LADOT criteria, a Traffic Study would not be required as neither condition mentioned above would be met.

In addition, the LADOT *Traffic Study Policies and Procedures* manual provides Congestion Management Program (CMP) Guidelines to assist local agencies in evaluating impacts of land use projects on the CMP system through the preparation of a regional transportation impact analysis (TIA). A CMP TIA is necessary for all projects that include, at a minimum, the following:

- 50 or more trips added to intersections during either the weekday AM or PM peak hours
- 150 or more trips added to the freeway during either the weekday AM or PM peak hours

Because the proposed MSC North Project is not anticipated to generate traffic during the AM or PM peak commute periods, it is not expected that the MSC North Project would meet or exceed the criteria set forth by Caltrans or LADOT. Therefore, a Traffic Impact Study is not required for the proposed MSC North Project. Additionally, because the proposed MSC North Project would not alter roadway circulation patterns or increase traffic volumes subsequent to construction, a CMP analysis is not required for post-construction traffic operations. Furthermore, during the scoping of the SAIP traffic study, LADOT indicated that no Traffic Impact Study was required because there was “no requirement to assess the temporary impacts of a project resulting from

construction activities." Thus, the proposal to prepare a Traffic Impact Study is voluntary.[17] LAWA determined at that time and continues to believe that the preparation of a Traffic Impact Study is useful in order to provide a full assessment and documentation of the potential impacts that may be generated by the construction of the proposed MSC North Project.

4.7.3.2 Baseline Conditions

As indicated above, baseline conditions relate to the facilities and general conditions that existed during a typical weekday in 2013 for the hours that would coincide with peak construction-related traffic activity, i.e., 6:00 AM to 7:00 AM and 3:30 PM to 4:30 PM.

4.7.3.3 Traffic Study Area

The construction traffic study area is depicted in **Figure 4.7-1**. The scope of the traffic study area was determined by identifying the intersections most likely to be used by construction-related vehicles accessing (1) the proposed MSC North Project construction site, construction employee parking area, and delivery staging areas and (2) the construction employee parking and staging areas for other concurrent construction projects in the vicinity of LAX. The traffic study area is generally bounded by I-405 to the east, I-105 and Imperial Highway to the south, Pershing Drive to the west, and Westchester Parkway, Sepulveda Boulevard, and Howard Hughes Parkway to the north. Figure 4.7-1 depicts the proposed MSC North Project construction site, which is located at the eastern end of World Way West. The construction employee parking and materials staging area are split between the MSC North Project construction site, which contains all the construction employee parking and some material staging, and a lot located south of Westchester Parkway, which will only be used for the staging of materials.

4.7.3.4 Traffic Study Area Roadways

The principal freeways and roadways serving as access routes within the construction traffic study area include the following:

- **I-405 (San Diego Freeway)** - This north-south freeway generally forms the eastern boundary of the construction traffic analysis traffic study area and provides regional access to the Airport and the surrounding area. Access to the traffic study area is provided via ramps at Howard Hughes Parkway, Century Boulevard, I-105, Imperial Highway, and three locations along La Cienega Boulevard.
- **I-105 (Glenn M. Anderson or Century Freeway)** - Along with Imperial Highway (described below), this east-west freeway forms the southern boundary of the construction traffic study area, and extends from the San Gabriel Freeway (I-605) on the east to Sepulveda Boulevard on the west. Access to the traffic study area is provided via ramps at Sepulveda Boulevard and along Imperial Highway. The westbound off-ramp from the I-105 Freeway to northbound Sepulveda Boulevard was widened to three lanes in March 2010.

[17] Email from LADOT to LAWA on July 29, 2004.

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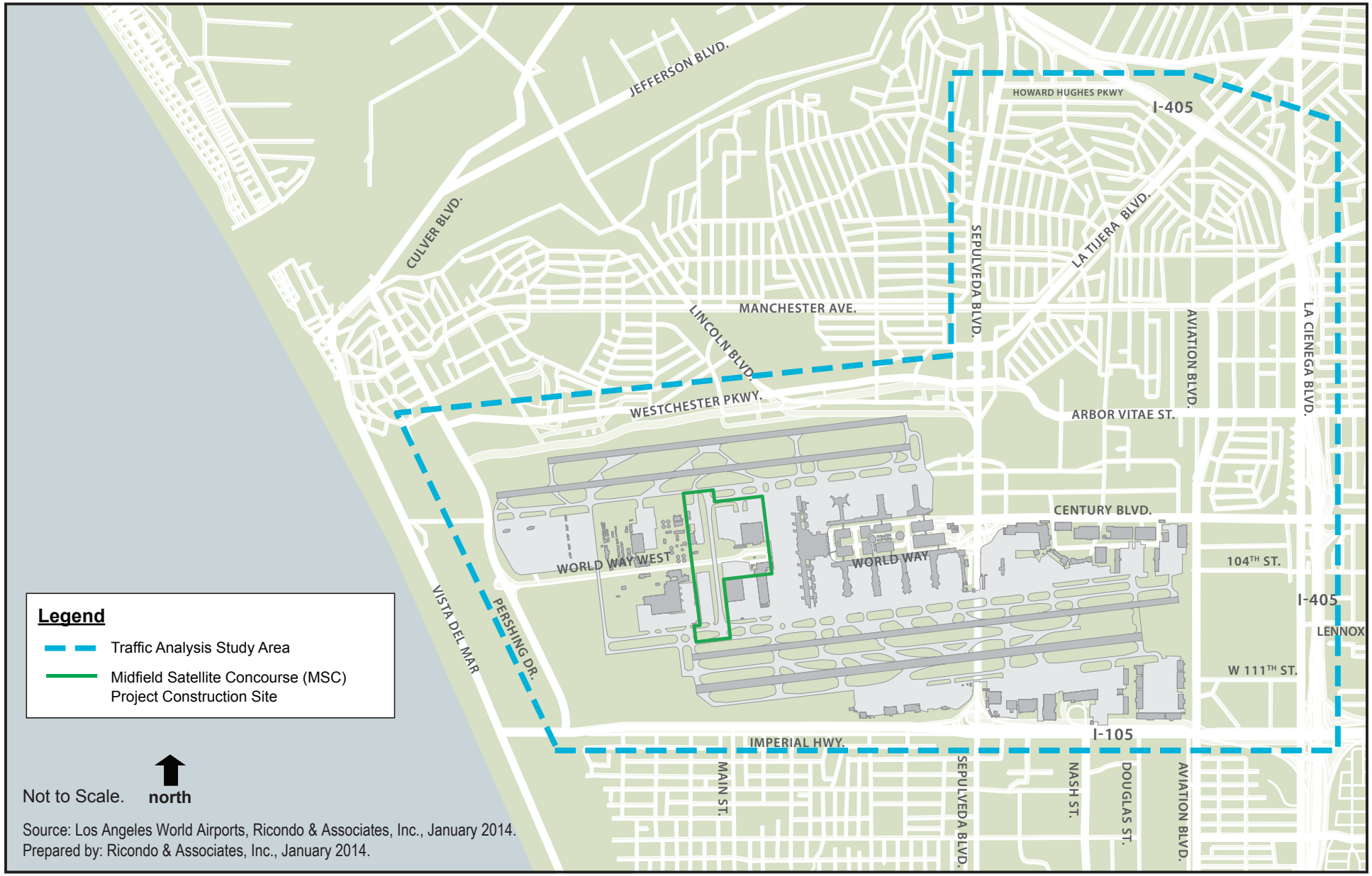

Source: Los Angeles World Airports, Ricondo & Associates, Inc., January 2014.
Prepared by: Ricondo & Associates, Inc., January 2014.

LAX Midfield Satellite Concourse Draft EIR

Construction Traffic Analysis Study Area

Figure **4.7-1**

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- **Aviation Boulevard** - This north-south four-lane roadway bisects the traffic study area.
- **Century Boulevard** - This eight-lane divided roadway serves as the primary entry to the LAX CTA. This roadway also provides access to off-airport businesses and hotels and on-airport aviation-related facilities (e.g., air cargo facilities) located between the CTA and I-405.
- **Imperial Highway** - This east-west roadway is located at-grade and beneath much of the elevated I-105 freeway. The number of lanes on this roadway varies from six-lanes east of the merge with I-105 to four-lanes west of the merge with I-105.
- **La Cienega Boulevard** - This north-south roadway parallels I-405 at the east boundary of the traffic study area. The roadway varies from four to six lanes.
- **Pershing Drive** - This north-south four-lane divided roadway forms the western boundary of the construction traffic study area.
- **Westchester Parkway** - This east-west four-lane divided arterial roadway forms a portion of the northern boundary of the traffic study area.
- **Sepulveda Boulevard (State Route 1 south of Lincoln Boulevard)** - This major north-south six-lane arterial roadway provides direct access to the Airport via I-405 and Westchester Parkway on the north and via I-105 on the south. Sepulveda Boulevard between I-105 and Century Boulevard is located in a tunnel section beneath the south airfield runways.
- **111th Street -** This east-west roadway has one lane in each direction separated by a continuous two-way left turn lane.

4.7.3.5 Existing Traffic Conditions

Traffic conditions at the traffic study area intersections and existing traffic activity (peak month, hourly, and annual) are discussed below.

Traffic Study Area Intersections

Intersection locations and intersection control and geometry are discussed below.

Intersection Locations

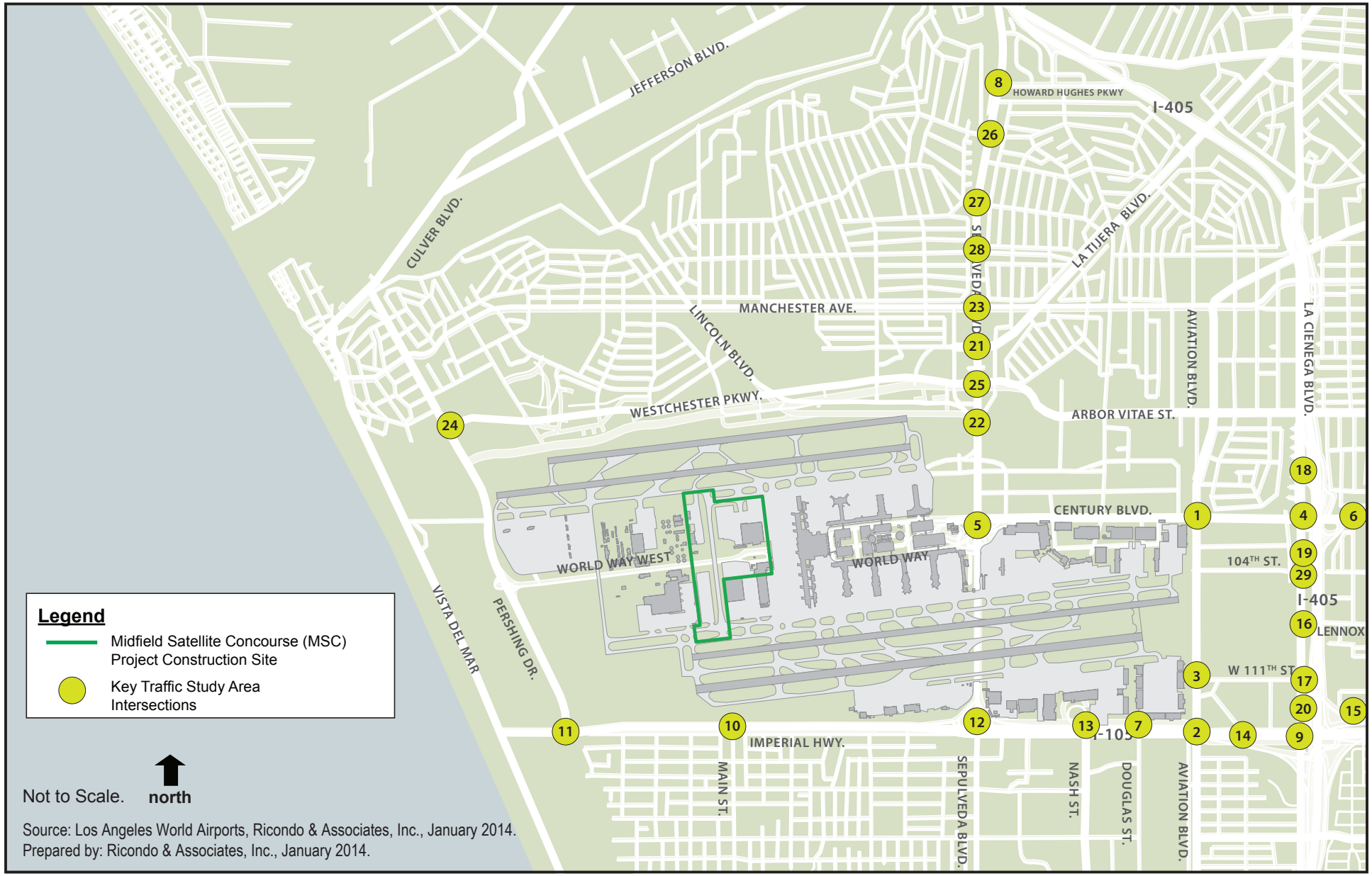
The anticipated routes utilized by construction-related vehicles were reviewed to identify the intersections likely to be used by vehicles accessing the construction employee parking/staging site associated with the proposed MSC North Project or the other concurrent construction project sites in the vicinity of LAX. Based on this review, the key intersections to be analyzed are listed below in **Table 4.7-1** and depicted in **Figure 4.7-2**.

Table 4.7-1

Study Area Intersections

Intersection Number	Intersection Location
1.	Aviation Boulevard and Century Boulevard
2.	Imperial Highway and Aviation Boulevard
3.	Aviation Boulevard and 111th Street
4.	La Cienega Boulevard and Century Boulevard
5.	Sepulveda Boulevard and Century Boulevard
6.	Century Boulevard and I-405 Northbound Ramps East of La Cienega Boulevard
7.	Imperial Highway and Douglas Street
8.	Sepulveda Boulevard and Howard Hughes Parkway
9.	Imperial Highway and La Cienega Boulevard
10.	Imperial Highway and Main Street
11.	Imperial Highway and Pershing Drive
12.	Imperial Highway and Sepulveda Boulevard
13.	Imperial Highway and Nash Street
14.	Imperial Highway and I-105 Ramp
15.	Imperial Highway and I-405 Northbound Ramp
16.	La Cienega Boulevard and Lennox Boulevard
17.	La Cienega Boulevard and 111th Street
18.	La Cienega Boulevard and I-405 Southbound Ramps North of Century Boulevard
19.	La Cienega Boulevard and I-405 Southbound Ramps South of Century Boulevard
20.	La Cienega Boulevard and I-405 Southbound Ramps North of Imperial Highway
21.	Sepulveda Boulevard and La Tijera Boulevard
22.	Sepulveda Boulevard and Lincoln Boulevard
23.	Sepulveda Boulevard and Manchester Avenue
24.	Westchester Parkway and Pershing Drive
25.	Sepulveda Boulevard and Westchester Parkway
26.	Sepulveda Boulevard and 76th/77th Street
27.	Sepulveda Boulevard and 79th/80th Street
28.	Sepulveda Boulevard and 83rd Street
29.	La Cienega Boulevard and 104th Street

Source: Los Angeles World Airports, Ricondo & Associates, Inc. September 2013.



LAX Midfield Satellite Concourse Draft EIR

Construction Traffic Study Area Intersections

Figure **4.7-2**

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Intersection Control and Geometry

All of the traffic study area intersections listed above and depicted in Figure 4.7-2 are signalized. In addition, all of the intersections are included in LADOT's Automated Traffic Surveillance and Control (ATSAC) system, except Imperial Highway and the I-405 northbound ramps east of La Cienega Boulevard (Intersection #15) and Century Boulevard and the I-405 northbound ramps east of La Cienega Boulevard (Intersection #6). The ATSAC system provides for monitoring of intersection traffic conditions and the flexibility to adjust traffic signal timing in response to current conditions.

Project-Related Peak Hours

Certain project commitments identified in the LAX Master Plan EIR are required to be implemented in conjunction with LAX Master Plan development projects and are also being required for LAX projects independent of the LAX Master Plan. Many of these commitments would have a direct effect on the traffic generated by the construction associated with the proposed MSC North Project. Specifically, LAX Master Plan Commitments ST-12 (Designated Truck Delivery Hours) and ST-14 (Construction Employee Shift Hours) are designed to control truck deliveries and construction employee trip activity to avoid the AM (7:00 AM to 9:00 AM) and PM (4:30 PM to 6:30 PM) peak commute periods, and would apply to the proposed MSC North Project. These commitments, along with other transportation-related commitments relevant to the proposed MSC North Project, are listed in Section 4.7.7 below.

The anticipated Project-related traffic peak hours were identified by reviewing estimates of the construction-related traffic associated with the proposed MSC North Project. Using these data, the peak hours analyzed for the proposed MSC North Project were determined to be the following:

- **Project Construction AM Peak Hour (6:00 AM to 7:00 AM)** - The proposed MSC North Project construction AM peak hour represents the peak period for construction employees arriving at the construction employee parking lot during the morning. Based on review of the draft construction resource schedule of hourly construction trips, employees are anticipated to arrive between 6:00 AM and 7:00 AM.[18]
- **Project Construction PM Peak Hour (3:30 PM to 4:30 PM)** - The proposed MSC North Project construction PM peak hour represents the peak period for construction employees leaving the construction employee parking lot during the evening. Based on review of the draft construction resource schedule of hourly construction trips, employees are anticipated to depart between 3:00 PM and 4:00 PM.[19] Although this construction-related traffic activity is estimated to end 30 minutes before the start of the PM peak commute period (4:30 PM to 6:30 PM), it was determined that combining these exiting construction volumes with the background traffic volume anticipated to occur between 3:30 PM and 4:30 PM, the period directly adjacent to the PM commuter peak hour, would produce a more conservative estimate of activity in the event that the future

[18] CONNICO, Incorporated, LAX MSC North Vehicle Schedule REV2 2013.08.09.pdf, August 2013 (employee trip volumes, truck trips, vehicle schedule times).

[19] CONNICO, Incorporated, LAX MSC North Vehicle Schedule REV2 2013.08.09.pdf, August 2013 (employee trip volumes, truck trips, vehicle schedule times).

construction employees need to exit prior to the desired "cut-off" time of 4:30 PM, just prior to the start of the evening peak commute period.

4.7.3.6 Baseline Intersection Volumes

Baseline traffic volumes consist of the traffic volumes that represent traffic activity at the time the NOP for the EIR was published (February 2013). Baseline volumes are based on actual 2013 data collected during the AM and PM construction-related peak hours. Baseline intersection traffic volumes are provided in **Appendix F, Attachment F.2**.

4.7.3.7 Baseline Intersection Analyses

Intersection LOS was analyzed using the CMA methodology to assess the estimated operating conditions during baseline conditions for the AM and PM construction peak hours. LOS is a qualitative measure that describes traffic operating conditions (e.g., delay, queue lengths, congestion). Intersection level of service ranges from A (i.e., excellent conditions with little or no vehicle delay) to F (i.e., excessive vehicle delays and queue lengths). LOS definitions for the CMA methodology are presented in **Table 4.7-2**.

In accordance with LADOT analysis procedures, the volume/capacity (v/c) ratio calculated using the CMA methodology is further reduced by 0.07 for those intersections included within the ATSAC system to account for the improved operation and increased efficiency from the ATSAC system that is not captured as part of the CMA methodology. Application of the ATSAC reduction is described in Attachment D of the LADOT *Traffic Study Policies and Procedures*.[20]

Table 4.7-2

Level of Service Thresholds and Definitions for Signalized Intersections

Level of Service (LOS)	Volume/Capacity Ratio Threshold	Definition
A	0 - 0.6	EXCELLENT. No vehicle waits longer than one red light and no approach phase is fully used.
B	0.601 - 0.7	VERY GOOD. An occasional approach phase is fully used; many drivers begin to feel somewhat restricted within groups of vehicles.
C	0.701 - 0.8	GOOD. Occasionally, drivers may have to wait through more than one red light; backups may develop behind turning vehicles.
D	0.801 - 0.9	FAIR. Delays may be substantial during portions of the rush hours, but enough lower volume periods occur to permit clearing of developing lines, preventing excessive backups.
E	0.901 - 1.0	POOR. Represents the most vehicles that intersection approaches can accommodate; may be long lines of waiting vehicles through several signal cycles.
F	Greater than - 1.0	FAILURE. Backups from nearby intersections or on cross streets may restrict or prevent movement of vehicles out of the intersection approaches. Tremendous delays with continuously increasing queue lengths.

Source: Transportation Research Board, Transportation Research Circular No. 212, *Interim Materials on Highway Capacity*, January 1980.

[20] Los Angeles Department of Transportation, Traffic Study Policies and Procedures, December 2010.

The estimated intersection LOS for baseline conditions is provided in **Table 4.7-3**. As shown in **Table 4.7-3**, most of the intersections operated at LOS C or better during the baseline construction AM and PM peak periods analyzed for the proposed MSC North Project. The one exception occurred at the intersection of Imperial Highway and Sepulveda Boulevard (Intersection #12), which was estimated to operate at LOS F during the construction PM peak hour.

The level of service results from the TRAFFIX program, including the volume, geometry and other inputs used to produce these results are provided in **Appendix F, Attachment F.3**.

Table 4.7-3

Baseline Intersection Analysis Results

Intersection	Peak Hour[1]	V/C[2]	LOS[3]
1. Aviation Blvd. & Century Blvd.	Construction AM	0.467	A
	Construction PM	0.594	A
2. Imperial Hwy. & Aviation Blvd.	Construction AM	0.500	A
	Construction PM	0.512	A
3. Aviation Blvd. & 111th St.	Construction AM	0.295	A
	Construction PM	0.404	A
4. La Cienega Blvd. & Century Blvd.	Construction AM	0.626	B
	Construction PM	0.762	C
5. Sepulveda Blvd. and Century Blvd.	Construction AM	0.424	A
	Construction PM	0.590	A
6. Century Blvd. & I-405 N/B Ramp	Construction AM	0.634	B
	Construction PM	0.459	A
7. Imperial Hwy. & Douglas St.	Construction AM	0.199	A
	Construction PM	0.375	A
8. Sepulveda Blvd. & H. Hughes Pkwy.	Construction AM	0.219	A
	Construction PM	0.419	A
9. Imperial Hwy. & La Cienega Blvd.	Construction AM	0.191	A
	Construction PM	0.453	A
10. Imperial Hwy. & Main St.	Construction AM	0.499	A
	Construction PM	0.439	A
11. Imperial Hwy. & Pershing Dr.	Construction AM	0.184	A
	Construction PM	0.316	A
12. Imperial Hwy. & Sepulveda Blvd.	Construction AM	0.496	A
	Construction PM	1.004	F
13. Imperial Hwy. & Nash St.	Construction AM	0.362	A
	Construction PM	0.239	A
14. Imperial Hwy. & I-105 Ramp	Construction AM	0.513	A
	Construction PM	0.471	A
15. Imperial Hwy. & I-405 NB Ramp	Construction AM	0.211	A
	Construction PM	0.480	A

Table 4.7-3

Baseline Intersection Analysis Results

Intersection	Peak Hour[1]	V/C[2]	LOS[3]
16. La Cienega Blvd. & Lennox Blvd.	Construction AM	0.164	A
	Construction PM	0.306	A
17. La Cienega Blvd. & 111th St.	Construction AM	0.128	A
	Construction PM	0.311	A
18. La Cienega Blvd. & I-405 Southbound Ramps North of Century	Construction AM	0.387	A
	Construction PM	0.410	A
19. La Cienega Blvd. & I-405 Southbound Ramps South of Century	Construction AM	0.135	A
	Construction PM	0.284	A
20. La Cienega Blvd. & I-405 Southbound Ramps North of Imperial	Construction AM	0.136	A
	Construction PM	0.218	A
21. Sepulveda Blvd. & La Tijera Blvd.	Construction AM	0.337	A
	Construction PM	0.613	B
22. Sepulveda Blvd. & Lincoln Blvd.	Construction AM	0.457	A
	Construction PM	0.750	C
23. Sepulveda Blvd. & Manchester Ave.	Construction AM	0.395	A
	Construction PM	0.711	C
24. Westchester Pkwy. & Pershing Dr.	Construction AM	0.151	A
	Construction PM	0.213	A
25. Sepulveda Blvd. & Westchester Pkwy.	Construction AM	0.309	A
	Construction PM	0.649	B
26. Sepulveda Blvd. & 76th/77th St.	Construction AM	0.337	A
	Construction PM	0.440	A
27. Sepulveda Blvd. & 79th/80th St.	Construction AM	0.253	A
	Construction PM	0.513	A
28. Sepulveda Blvd. & 83rd St.	Construction AM	0.211	A
	Construction PM	0.458	A
29. La Cienega Blvd. & 104th St.	Construction AM	0.111	A
	Construction PM	0.276	A

Notes:
1 The hours of analysis include the construction AM peak (6:00 AM - 7:00 AM) and the construction PM peak (3:30 PM - 4:30 PM).
2 Volume to capacity ratio.
3 LOS range: A (excellent) to F (failure).

Source: Ricondo & Associates, Inc., using TRAFFIX, August 2013.

4.7.3.8 LAWA's Coordination and Logistic Management Team

Subsequent to the approval of the LAX Master Plan, LAWA established the Coordination and Logistic Management (CALM) team. Working in cooperation with LAWA staff including Terminal Operations, Airport Police, Capital Programming & Planning Group, and Commercial

Development Group, the CALM team monitors construction traffic, coordinates lane and roadway closures, and analyzes traffic conditions to determine the need for additional traffic controls, lane restriping, and traffic signal modifications. An approval process for proposed construction work has been established in which contractors submit request forms describing the work, when the work is proposed to take place, duration, coordination efforts with other projects, etc. If pedestrian or vehicular traffic will be impacted, the submittal form will include proposed traffic control plans. These requests are reviewed by staff from the CALM team and various LAWA divisions, and any concerns are addressed prior to approval. The CALM team also develops an informational campaign for construction activities, including wayfinding signage for pedestrians to locate ground transportation facilities and parking during construction, information for commercial shuttle drivers regarding lane closures and detours, and traffic alerts on LAWA's website for the public and airport employees. A real-time traffic conditions map for the LAX CTA was recently added to the LAWA website. Regular meetings occur to discuss minimizing the construction impacts of current and future projects. Coordination with outside agencies is conducted as the individual projects necessitate.

4.7.4 Project-Generated Traffic

Traffic that would be generated by the proposed MSC North Project is defined below for the anticipated peak period of traffic generation.

4.7.4.1 Project Construction Traffic During Project Peak (December 2018)

The peak construction period for the proposed MSC North Project is anticipated to occur during December 2018. Construction employee and truck trips were estimated on an hourly basis over the typical busy day (with the exception of the peak AM and PM commute periods) during the peak construction period. Based on the resource loaded schedule developed for the proposed MSC North Project, which assumes a double-shift work schedule during the Project peak, it is estimated that 663 construction employees (536 in the AM and 127 in the PM) would access the MSC North Project construction site on a daily basis during the peak period of construction.[21] Vehicle occupancy was assumed to be 1.15 employees per vehicle. According to a study published by the Southern California Association of Governments (SCAG), the average vehicle occupancy on several regional roadways in the Los Angeles region ranged from approximately 1.15 to 1.30.[22] Provided the temporary nature of construction employment and the lower likelihood of rideshare opportunities, a conservative estimate of vehicle occupancy of 1.15 employees per vehicle was assumed. By applying the assumed vehicle occupancy factor, it was projected that 576 construction employee vehicles per day during the proposed MSC North Project construction peak period would access and egress the traffic study area in support of proposed MSC North Project construction.

For purposes of the intersection analyses, all vehicle trips were converted to "passenger car equivalents" (PCEs) to account for the additional impact that large vehicles, such as trucks,

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21 CONNICO, Incorporated, LAX MSC North Vehicle Schedule REV2 2013.08.09.pdf, August 2013.

22 Southern California Association of Governments, Regional High-Occupancy Vehicle Lane System Performance Study, November 4, 2004.

would have on roadway traffic operations. As such, the number of construction-related vehicle trips was multiplied by the following PCE factors, consistent with the assumptions in the LAX Master Plan EIR:

Vehicle Type	PCE Factor
Construction employees[23]	1.0
Construction delivery trucks	2.5

The employees working on the proposed MSC North Project are assumed to park onsite or in the surface lots with direct access to the on-airport service road system; therefore, it is assumed that any required shuttle trips would be accommodated within the airport boundary and, consequently, would not access the public roadway system and intersections analyzed for this traffic study.

Delivery trucks carrying construction equipment and material would enter and exit the materials staging areas. It is estimated that approximately 39 construction-related truck delivery round trips would access the site during the construction AM and PM peak hours. Using an assumed PCE factor of 2.5 per vehicle and distributing these volumes in accordance with the anticipated delivery schedule, it was estimated that 98 PCEs enter and exit the study area during the construction AM and PM peak periods.

The estimated Project-related construction trips (in PCEs) during the proposed MSC North Project construction peak in December 2018 are summarized by hour in **Table 4.7-4**. The table includes construction employee vehicle trips and construction delivery truck trips used to haul soil from the site and to transfer goods to the construction staging area(s). As shown, during the morning peak construction period, employees were assumed to enter the site between 6:00 AM and 7:00 AM. During the afternoon peak construction period, employees were assumed to exit between 3:00 PM and 4:00 PM. Using a similar conservative approach, it was assumed these trips would occur during the PM period 3:30 PM to 4:30 PM directly adjacent to the start of the PM peak commuter period. The proposed MSC North Project construction volumes used for the AM and PM construction peak hour analysis are summarized at the bottom of Table 4.7-4.

[23] It should be noted that a different conversion factor was applied to determine the number of construction employee vehicles that would access the Project area. A vehicle occupancy factor of 1.15 employees per vehicle was used to convert from employees to vehicles. This conversion factor is different than the PCE factor discussed here, which is used to adjust for the additional impact that large vehicles have on roadway traffic operations.

Table 4.7-4

Project Peak (December 2018) – Proposed Project-Related Construction Traffic PCEs

Hour		Employee [1]		Truck [2]		Total Construction PCEs
		Trips In	Trips Out	Trips In	Trips Out	
0:00	1:00					
1:00	2:00					
2:00	3:00		110			110
3:00	4:00					
4:00	5:00					
5:00	6:00					
6:00	**7:00**	**466**		**98**	**98**	**662**
7:00	8:00					
8:00	9:00					
9:00	10:00			98	98	196
10:00	11:00			98	98	196
11:00	12:00			98	98	196
12:00	13:00			98	98	196
13:00	14:00			98	98	196
14:00	15:00			98	98	196
15:00	**16:00**	**110**	**466**	**98**	**98**	**772**
16:00	17:00					
17:00	18:00					
18:00	19:00					
19:00	20:00			25	25	50
20:00	21:00			13	13	26
21:00	22:00			13	13	26
22:00	23:00			13	13	26
23:00	0:00					
Total		**576**	**576**	**848**	**848**	**2,848**
Summary of Modeled Traffic PCEs						
Construction AM Peak (6:00 AM– 7:00 AM)		**466**		**98**	**98**	**662**
Construction PM Peak (3:30 PM – 4:30 PM)		**110**	**466**	**98**	**98**	**772**

Notes:

1 Estimate is based on 663 peak day construction employees. An occupancy factor of 1.15 employees per vehicle is included in the employee trip calculations.

2 Truck trips (i.e., delivery and transfer) were converted at a rate of 2.5 PCEs per vehicle.

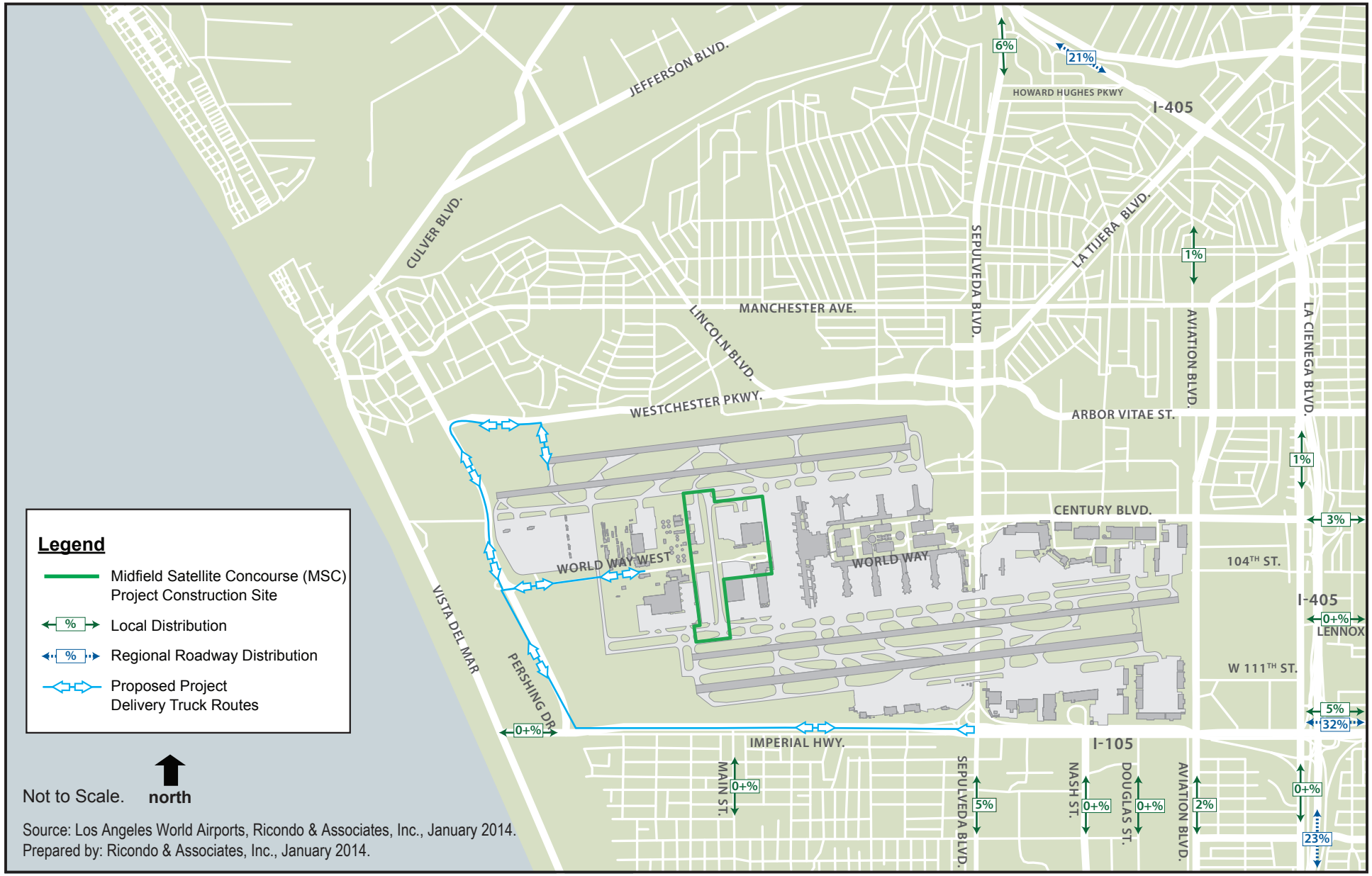
Source: CONNICO, Incorporated, LAX MSC North Vehicle Schedule REV2 2013.08.09.pdf, August 2013 (employee trip volumes, truck trips, vehicle schedule times).

4.7.4.2 Proposed Project Construction Trip Distribution

As shown in **Figure 4.7-3**, trucks are anticipated to use the regional freeway system (I-405 and I-105), Imperial Highway, and Pershing Drive to access the materials and equipment staging area. The regional and local traffic flow distributions are also provided in Figure 4.7-3.

For purposes of distributing traffic on the traffic study area roadway network, it was assumed that construction employee and delivery vehicle trips would originate from geographic locations in proportion to the distribution of regional population and specific street routing assumptions obtained from the LAX Master Plan EIR and the LAX Air Passenger Survey. As shown in Figure 4.7-3, it was estimated that approximately 21 percent of the construction-related traffic would access the Airport from I-405 north, 23 percent from I-405 south, 32 percent from I-105 east, and 24 percent from local roadways. These route characteristics represent the roadways that a construction-related vehicle would use to access the traffic study area.

In assigning traffic to the traffic study area roadways, it was assumed that construction vehicles, consisting of trucks and construction employee automobiles, would approach the traffic study area in proportion to the regional population distributions described above. Truck traffic, however, is limited to accessing the MSC North Project site during construction via Imperial Highway and Pershing Drive in accordance with LAX Master Plan Commitment ST-22 (Designated Truck Routes) which stipulates that deliveries for dirt, aggregate, and other materials will use designated freeways and non-residential streets. The freeway ramps, roadways, and intersections representing the travel paths for construction-related vehicles within the traffic study area were determined by reviewing the potential paths that would be used by vehicles traveling to the employee parking lots and to the construction staging areas, and assigning those trips to the most logical routes. The analysis is not particularly sensitive to the regional approach assumptions, given that a large proportion of the construction-related trips would access the traffic study area via a limited number of freeway access points that may accommodate traffic originating from several regional directions. The assumed traffic study area circulation routes for construction employees and trucks are described in **Appendix F, Attachment F.4**.



LAX Midfield Satellite Concourse Draft EIR

Proposed Project Construction Vehicle Routes & Trip Distribution

Figure **4.7-3**

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4.7.5 Future Cumulative Traffic

The components of traffic for the future cumulative traffic condition are described in this section. The future cumulative traffic condition takes into consideration past, present, and reasonably foreseeable projects and includes growth in ambient background traffic and both airport and non-airport developments in the vicinity of the Airport. Known development projects in the Airport vicinity that may contribute traffic to the traffic study area roadway system during the peak construction period for the proposed MSC North Project were also considered. These trips would result from either the construction or the operation of those development projects. The list of related projects is constantly changing as projects rotate off the list and new projects are approved and added to the list. Given that approval, construction, and operation of local area development projects is a continuous process, the traffic associated with the construction and operation of many past and current local area developments are represented in the traffic volume data used as a basis for the traffic study. The development schedule and traffic characteristics of larger projects in close proximity to the traffic study area were reviewed and their effects were incorporated into the cumulative analysis.

4.7.5.1 Cumulative Projects

Development projects considered in the cumulative impacts analysis include LAX Master Plan projects as well as other capital improvement projects undertaken by LAWA and other local agencies. Based on information available at the time the construction traffic analysis for the proposed MSC North Project was prepared, the development projects anticipated to be under construction concurrent with the proposed MSC North Project construction and of a nature that would contribute to cumulative traffic impacts were identified.

Table 4.7-5 summarizes the estimated construction costs, and the assumed start and end dates of construction for the proposed MSC North Project and each of the cumulative projects that are anticipated to be under construction concurrent with the proposed MSC North Project. The estimated labor component of the total construction cost is a key element associated with estimating construction employee hours and resulting employee vehicle trips.

The activity characteristics of the resource loaded schedule and associated construction-related vehicle trip activity developed for the Bradley West Project were used to estimate the construction activity associated with the other concurrent projects for which detailed construction-related trip data were not available. Specifically, the ratio of total construction employee hours to total labor cost was calculated for the Bradley West Project. This ratio was applied to the estimated labor costs associated with the other cumulative projects to provide an estimate of total employee hours required over the course of each of these other projects. In addition, the general distribution of employee hours over the course of the Bradley West Project construction program was used to allocate total employee hours over the course of the individual projects on a monthly basis. This methodology was considered appropriate for this analysis as the Bradley West Project provided detailed information related to construction activity, costs, and associated vehicle trip activity, and provided detailed information related to the primary variables involved with determining labor schedules (i.e. project costs and timeline). Although it is likely that the other cumulative projects may experience different peaking patterns, the profile of the monthly distribution of employee hours over the course of the Bradley West Project provides a model profile calculated based on a comprehensive resource loaded

schedule, which is anticipated to provide a realistic surrogate for use in estimating activity from other cumulative projects for which detailed construction data are not available.

Table 4.7-5

Construction Projects Concurrent with the Proposed Project Construction Period

Project No.	Concurrent Construction Project	Estimated Total Construction Cost (millions)	Start Date	End Date	Estimated Employee Hours During Projects (Total)
N/A[1]	Midfield Satellite Concourse - North	$666.5	Jul-14	Jul-19	5,593,000
1	RSA Improvements – South Airfield	$106.3	Feb-14	Feb-15	238,000
2	RSA Improvements – North Airfield	$139.1	Jun-14	Jun-19	312,000
3	Bradley West Project – Remaining Work	$603.7	Nov-13	Dec-17	1,353,000
4	Terminal 3 Connector	$175	Jul-19	Jan-22	---[2]
5	North Terminals Improvements	$380	Aug-13	Aug-17	852,000
6	South Terminals Improvements	$665	Nov-11	Feb-18	1,491,000
7	Central Utility Plant Replacement Project – Remaining Work	$120.6	Sep-13	Dec-14	216,000
8	Miscellaneous Projects/Improvements	$945.5	Jan-14	Jul-20	605,000
9	West Aircraft Maintenance Area Project	$175	Jan-14	Dec-18	425,000
10	LAX Northside Development	N/A[1]	Jan-15	Dec-22	N/A[1]
11	LAX Master Plan Alt. D/SPAS Development[3]	$16,391	Jun-15	Jun-25	15,907,000
12	Metro Crenshaw / LAX Transit Corridor and Station[4]	$404	Dec-15	Apr-19	453,000

Notes:
1 N/A = Not Applicable
2 Project is not anticipated to result in overlapping employee hours during the estimated combined peak day.
3 LAWA evaluated nine development alternatives for the LAX Specific Plan Amendment Study and in February 2013 the Board of Airport Commissioners (BOAC) selected one alternative; however, all the approvals necessary to implement that alternative have not yet occurred. For the purposes of the cumulative construction impacts analysis, an assumption is made that the LAX Master Plan improvements, as previously approved, and as reflected in the LAX Specific Plan Amendment Study's Alternative 3, are implemented, which provides a more conservative analysis than if one were to assume the BOAC-selected alternative (i.e., more development would occur under the LAX Master Plan scenario than under the BOAC-selected alternative).
4 Estimated budget and schedule based on information obtained from Crenshaw/LAX Transit Corridor Project FEIR and project website.

Sources: CDM Smith (list and characteristics of proposed Project and concurrent projects); Email from CDM Smith (Anthony Skidmore) on September 24, 2013 (project schedules and cost for projects 1 - 8, & 10); Crenshaw/LAX Transit Corridor Project FEIR (Metro Crenshaw/LAX Transit Corridor cost), August 2011; www.metro.net/projects/crenshaw_corridor.com (Metro Crenshaw/LAX Transit Corridor schedule), accessed November 12, 2012; Ricondo & Associates, Inc. (estimated employee hours for all other projects), August 2013.

This approach was used to estimate construction employee hours and vehicle trips associated with all concurrent projects with the exception of the LAX Northside Area Development project, for which construction trip information and monthly construction employee hour data were obtained from the traffic consultants involved in preparation of the traffic study for the LAX Northside Area Development EIR.

Figure 4.7-4 provides estimated employee hours by month for the proposed MSC North Project and the cumulative construction projects that are anticipated to be under construction concurrent with the proposed MSC North Project construction period. The figure includes all anticipated construction projects that are expected to occur over the course of the construction period for the proposed MSC North Project. As shown in the figure, the peak period for proposed MSC North Project construction is estimated to occur in December 2018, while the overall cumulative peak during construction of the proposed MSC North Project is also estimated to occur in December 2018.

The assumed conservative two percent annual growth in background traffic is anticipated to produce a conservative traffic volume scenario that would account for additional construction-related traffic in the event that additional construction projects are initiated during the timeframe evaluated for this study.

Estimated AM and PM construction peak hour vehicle trips associated with the proposed MSC North Project and the six concurrent construction projects during December 2018 (cumulative peak period) are provided in **Table 4.7-6**. Traffic volumes associated with the proposed MSC North Project during the peak period for cumulative traffic are equivalent to the traffic volumes during the MSC North Project peak, as both peaks occur in December 2018. Traffic volumes associated with each concurrent construction project were estimated by calculating the ratio of vehicle trips to employee hours for the Bradley West Project and multiplying this ratio by the estimated total number of employee hours for each project during the cumulative peak month in December 2018, except for those projects where vehicle trips were estimated specifically for those projects (i.e., the LAX Northside Area Development and trips from previous LAWA traffic studies related to the West Aircraft Maintenance Area and Bradley West Project, which were calculated based on their respective project information). The percentage of vehicle trips arriving at and departing the traffic study area by hour of the day, for each of the cumulative projects, were assumed to coincide with the peak construction periods for the proposed MSC North Project. Furthermore, it is assumed that all construction projects would use a single work shift with the exception of the LAX SPAS Development Project[24] which has a total construction cost of over $16 billion. This project was assumed to utilize a double-shift work schedule with the same shift split characteristics as the MSC North Project.

[24] LAWA evaluated nine development alternatives for the LAX Specific Plan Amendment Study and in February 2013 the Board of Airport Commissioners (BOAC) selected one alternative; however, all the approvals necessary to implement that alternative have not yet occurred. For the purposes of the cumulative construction impacts analysis, an assumption is made that the LAX Master Plan improvements, as previously approved, and as reflected in the LAX Specific Plan Amendment Study's Alternative 3, are implemented, which provides a more conservative analysis than if one were to assume the BOAC-selected alternative (i.e., more development would occur under the LAX Master Plan scenario than under the BOAC-selected alternative).

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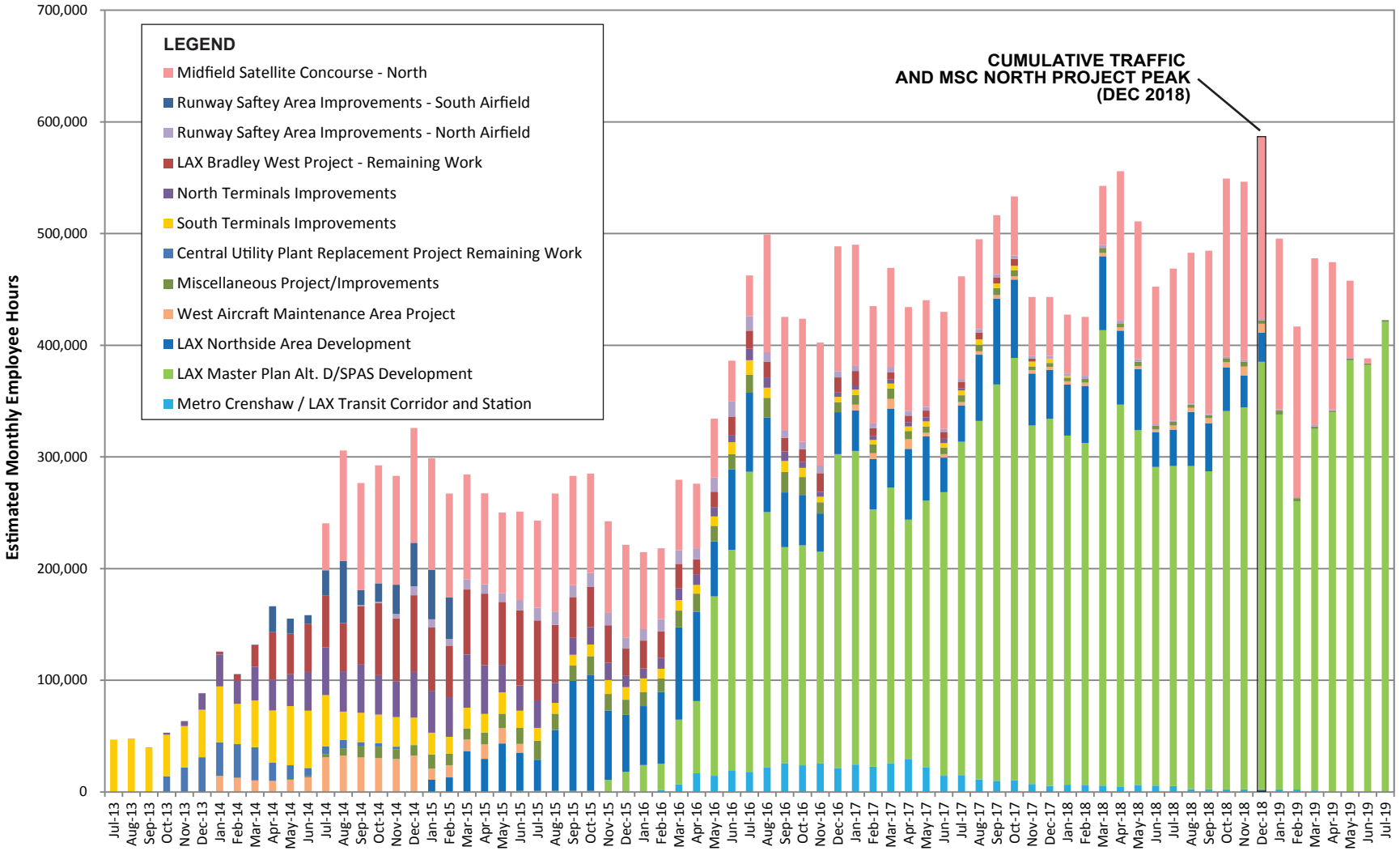

Sources: CDM Smith (construction cost and schedule), Gibson Transportation Consulting, Inc. (LAX Northside Area Development), Ricondo & Associates, Inc., (estimated employee hours for all other projects) October 2013.
Prepared by: Ricondo & Associates, Inc., October 2013.

LAX Midfield Satellite Concourse Draft EIR	**Estimated Employee Hours for Proposed Project and Other Concurrent Construction Projects**	Figure **4.7-4**

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Table 4.7-6

AM and PM Construction Peak Hour Traffic PCEs at Overall Cumulative Peak by Project

	Construction Trips in Passenger Car Equivalents (PCEs)							
	Construction AM Peak Hour (6:00 AM - 7:00 AM)				Construction PM Peak Hour (3:30 PM - 4:30 PM)			
	Employees[1]		Trucks		Employees[1]		Trucks	
Project	**In**	**Out**	**In**	**Out**	**In**	**Out**	**In**	**Out**
Proposed Project (December 2018)[1]	466	0	98	98	110	466	87	87
Other Concurrent Projects in December 2018 [2]								
2. RSA Improvements – North Airfield	4	0	1	1	0	4	1	1
8. Miscellaneous Projects/Improvements	12	0	3	3	0	12	3	3
9. West Aircraft Maintenance Area Project	39	0	18	18	0	39	18	18
10. LAX Northside Area Development[3]	320	0	0	0	0	320	0	0
11. LAX Master Plan Alt. D/SPAS Development[4]	1,094	0	226	226	257	1,094	226	226
12. Metro Crenshaw / LAX Corridor and Station	9	0	2	2	0	9	2	2
Total for Other Concurrent Projects in December 2018	1,478	0	250	250	257	1,478	250	250

Notes:
1 The proposed MSC North Project trips shown here are based on 536 peak day construction employees generating 466 daily employee vehicles.
2 The ratio of peak hour trips over total monthly employee construction hours for other concurrent projects was assumed to be equal to that calculated for the proposed MSC North Project, unless other project-specific data were available.
3 Peak hour trips provided by Gibson Transportation Consulting.
4 Assumed to operate with a double-shift work schedule similar to the MSC North Project.

Sources: Gibson Transportation Consulting, Inc., pages from Detailed ResourcesV1.pdf (LAX Northside Area Development trips); Ricondo & Associates, Inc., August 2013.

For purposes of distributing traffic within the traffic study area, it was necessary to identify the employee parking and staging locations for the concurrent projects. The location of the construction employee parking and material staging area as well as general access and circulation patterns of construction-related vehicle activity for the proposed MSC North Project are depicted in **Figure 4.7-5**. The anticipated contractor employee parking and staging areas for the six concurrent construction projects are also depicted in Figure 4.7-5, as well as other available staging locations in the area. The exhibit depicts parking and staging areas associated with the projects that were anticipated to be under construction concurrent with the peak cumulative period analyzed for this study. The regional and local area distribution patterns are anticipated to be generally the same as for the proposed MSC North Project, with adjustments as necessary for access to the individual sites.

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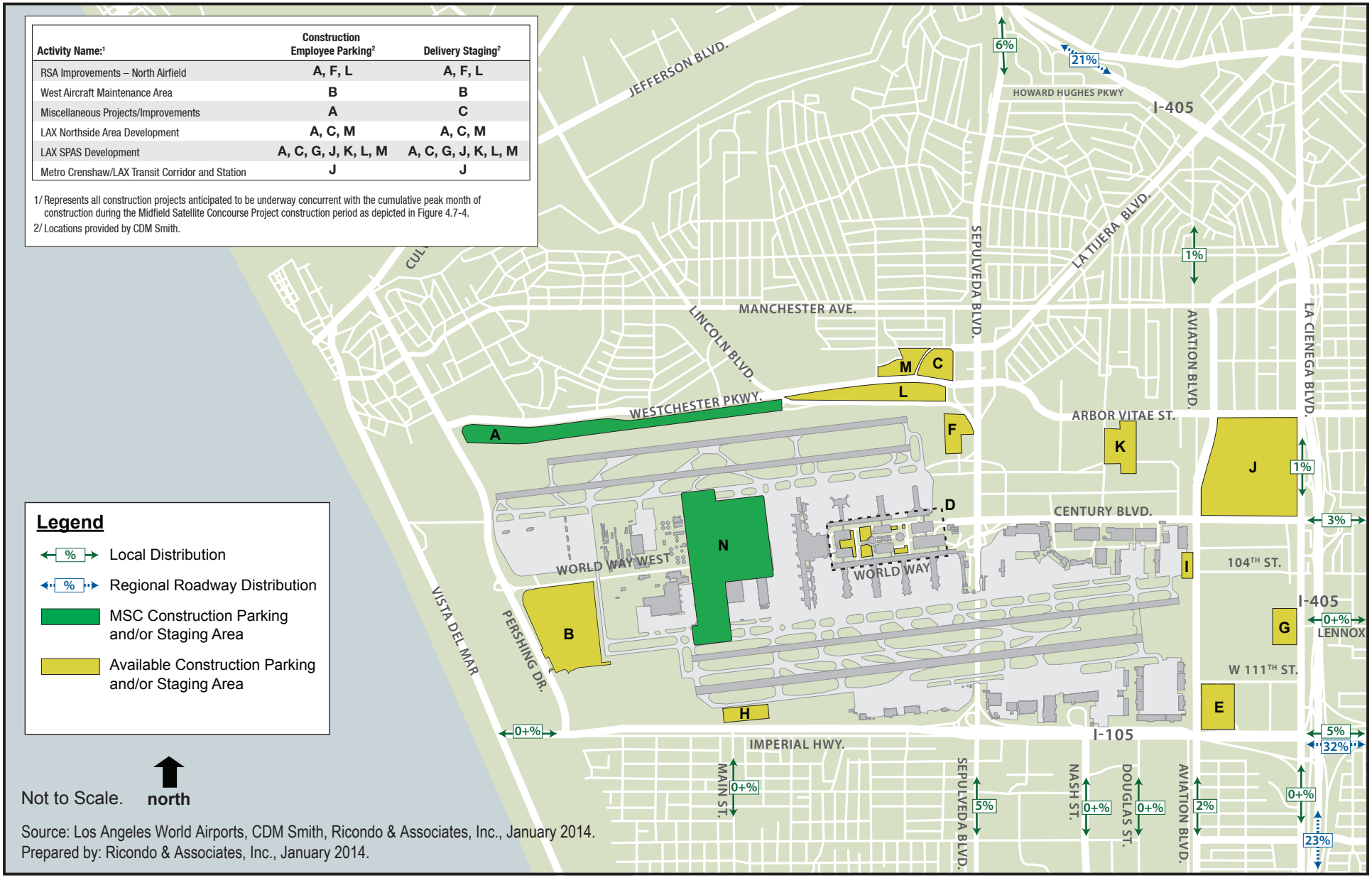
Activity Name:[1]	Construction Employee Parking[2]	Delivery Staging[2]
RSA Improvements – North Airfield	A, F, L	A, F, L
West Aircraft Maintenance Area	B	B
Miscellaneous Projects/Improvements	A	C
LAX Northside Area Development	A, C, M	A, C, M
LAX SPAS Development	A, C, G, J, K, L, M	A, C, G, J, K, L, M
Metro Crenshaw/LAX Transit Corridor and Station	J	J

1/ Represents all construction projects anticipated to be underway concurrent with the cumulative peak month of construction during the Midfield Satellite Concourse Project construction period as depicted in Figure 4.7-4.
2/ Locations provided by CDM Smith.



Legend

- % Local Distribution
- % Regional Roadway Distribution
- MSC Construction Parking and/or Staging Area
- Available Construction Parking and/or Staging Area

Not to Scale. north

Source: Los Angeles World Airports, CDM Smith, Ricondo & Associates, Inc., January 2014.
Prepared by: Ricondo & Associates, Inc., January 2014.

LAX Midfield Satellite Concourse Draft EIR

Employee Parking and Staging Locations for Proposed Project and Other Projects at Construction Peak

Figure **4.7-5**

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4.7.5.2 Planned Transportation Network Improvements

The Bradley West Project EIR identifies several intersection improvements throughout the study area to mitigate potential future impacts[25]. The following study area intersections that were anticipated to be significantly impacted by the Bradley West Project would be improved when traffic activity levels reach certain activity thresholds at which an impact would be triggered.

- Imperial Highway and Sepulveda Boulevard (Intersection #12)
- La Cienega Boulevard and I-405 Ramps N/O Century Boulevard (Intersection #18)
- La Tijera Boulevard and Sepulveda Boulevard (Intersection #21)
- Sepulveda Boulevard and 76th/77th Street (Intersection #26)

Though it is possible improvements would be in place prior to the peak cumulative traffic period (December 2018), for purposes of this study it has been conservatively assumed that these improvements would not be in place. Therefore, it is not anticipated that any transportation improvements would be implemented during the timeframe analyzed for this study that would alter traffic patterns or modify the intersection capacity assumptions in such a way that would affect the assessment of potential traffic impacts associated with the proposed MSC North Project.

4.7.6 Thresholds of Significance

The traffic study area intersections either fall entirely within the City of Los Angeles or share a boundary with the City of El Segundo and the City of Inglewood. The intersections which fall entirely within the City of Los Angeles were evaluated for potential traffic impacts using the LADOT significant traffic impact criteria. Intersections lying on the boundary of multiple jurisdictions were evaluated using the more conservative threshold of significance criteria; in all of these cases the LADOT criteria had the most conservative thresholds.

4.7.6.1 City of El Segundo Impact Criteria

In the City of El Segundo, an impact is considered significant if one of the following thresholds is exceeded:[26]

- The LOS is E or F, its final volume/capacity (V/C) ratio is 0.901 or greater, and the project-related increase in V/C is 0.020 or greater.

4.7.6.2 City of Inglewood Impact Criteria

In the City of Inglewood, an impact is considered significant if one of the following thresholds is exceeded:[27]

- The LOS is F, its final V/C ratio is 1.001 or greater, and the project-related increase in V/C is 0.020 or greater.

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25 City of Los Angeles, Los Angeles World Airports, Final Environmental Impact Report for Bradley West Project, *Los Angeles International Airport (LAX)*, September 2009, Section 4.2.9

26 Samaras, Paul, Principal Planner, City of El Segundo, Personal Communication, April 21, 2009.

27 Mai, Alan, Associate Traffic Engineer, City of Inglewood, Personal Communication, January 6, 2009.

4.7.6.3 City of Los Angeles Impact Criteria

In accordance with LADOT criteria defined in its *Traffic Study Policy and Procedures*,[28] an impact is considered to be significant if one of the following thresholds is exceeded:

- The LOS is C, its final 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 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 V/C ratio is 0.901 or greater, and the project-related increase in V/C is 0.010 or greater.

The "final V/C ratio" as defined by LADOT consists of the future V/C ratio at an intersection that includes volume from the project, baseline, ambient background growth, and other related projects, but without proposed intersection traffic mitigation as potentially required by the project.

The "project-related increase" is defined as the change in the unmitigated LOS condition between the (a) future V/C "with" the project, baseline, ambient background growth (for the cumulative analysis), and other related project growth, and (b) the future V/C without the project, but with baseline, ambient background growth, and other related project growth.

For purposes of this analysis and in accordance with CEQA, proposed MSC North Project impacts were determined by comparing the level of service results for the following conditions:

- **Project Impacts--**The direct impacts of the proposed MSC North Project are determined by calculating the difference in LOS for the Baseline Plus Peak Project LOS and the Baseline LOS. This comparison is required to isolate the direct impacts of the proposed MSC North Project. The difference in LOS is compared to the thresholds identified earlier in this section to determine if the proposed MSC North Project would result in a significant impact.
- **Cumulative Impacts--**The cumulative impacts analysis is intended to provide a comparison of future traffic conditions, consisting of traffic generated by all anticipated sources described previously in this document. Cumulative impacts were analyzed using a two-step process. Initially, the cumulative With Project LOS condition was compared with the baseline condition to determine if a cumulative impact would occur relative to the baseline. A cumulative impact was deemed significant if it exceeded the allowable threshold of significance defined earlier in this section. If a cumulative impact was determined, then a second comparison was conducted by calculating the difference in V/C for the With Project and Without Project levels of service to determine the proposed MSC North Project's contribution. If the calculated differences in V/C exceed the threshold guidelines defined in this section, then it was determined that the proposed MSC North Project component would represent a cumulatively considerable contribution (significant impact).

[28] Los Angeles Department of Transportation, Traffic Study Policies and Procedures, Revised December 2010.

4.7.7 Applicable LAX Master Plan Commitments

LAWA is requiring that applicable commitments identified in the LAX Master Plan MMRP be implemented as part of the proposed MSC North Project. The following transportation-related commitments identified in the LAX Master Plan MMRP would be applied to the proposed MSC North Project and thus are included as part of the proposed MSC North Project for purposes of environmental review:

C-1. Establishment of a Ground Transportation/Construction Coordination Office.

- Establish this office for the life of the construction projects to coordinate deliveries, monitor traffic conditions, advise motorists and those making deliveries about detours and congested areas, and monitor and enforce delivery times and routes. LAWA would periodically analyze traffic conditions on designated routes during construction to see whether there is a need to improve conditions through signage and other means.

  This office may undertake a variety of duties, including but not limited to:

  - Inform motorists about detours and congestion by use of static signs, changeable message signs, media announcements, airport website, etc.;
  - Work with airport police and the Los Angeles Police Department to enforce delivery times and routes;
  - Establish staging areas;
  - Coordinate with police and fire personnel regarding maintenance of emergency access and response times;
  - Coordinate roadway projects of Caltrans, City of Los Angeles, and other jurisdictions with those of the Airport construction projects;
  - Monitor and coordinate deliveries;
  - Establish detour routes;
  - Work with residential and commercial neighbors to address their concerns regarding construction activity; and
  - Analyze traffic conditions to determine the need for additional traffic controls, lane restriping, signal modifications, etc.

  Note: Subsequent to the approval of the LAX Master Plan, LAWA established a "Ground Transportation/Construction Coordination Office" in the form of the CALM team. The CALM team coordinates and monitors construction traffic, coordinates with agencies as necessary, and reviews traffic control plans to address any concerns prior to approval. The CALM team, discussed in detail in Subsection 4.7.3.8, (under Regulatory Context), above, provides implementation of the LAX Master Plan Commitment C-1.

C-2. Construction Personnel Airport Orientation.

- All construction personnel will be required to attend an airport project-specific orientation (pre-construction meeting) that includes where to park, where staging areas are located, construction policies, etc.

ST-9. Construction Deliveries.

- Construction deliveries requiring lane closures shall receive prior approval from the Construction Coordination Office. Notification of deliveries shall be made with sufficient time to allow for any modifications to approved traffic detour plans.

ST-12. Designated Truck Delivery Hours.

- Truck deliveries shall be encouraged to use night-time hours and shall avoid the peak periods of 7:00 AM to 9:00 AM and 4:30 PM to 6:30 PM.

ST-14. Construction Employee Shift Hours.

- Shift hours that do not coincide with the heaviest commuter traffic periods (7:00 AM to 9:00 AM, 4:30 PM to 6:30 PM) would be established. Work periods will be extended to include weekends and multiple work shifts, to the extent possible and necessary.

ST-16. Designated Haul Routes.

- Every effort will be made to ensure that haul routes are located away from sensitive noise receptors.

ST-17. Maintenance of Haul Routes.

- Haul routes on off-airport roadways will be maintained periodically and will comply with City of Los Angeles or other appropriate jurisdictional requirements for maintenance. Minor striping, lane configurations, and signal phasing modifications would be provided as needed.

ST-18. Construction Traffic Management Plan.

- A complete construction traffic plan will be developed to designate detour and/or haul routes, variable message and other sign locations, communication methods with airport passengers, construction deliveries, construction employee shift hours, construction employee parking locations and other relevant factors.

ST-22. Designated Truck Routes.

- For dirt and aggregate and all other materials and equipment, truck deliveries will be on designated routes only (freeways and non-residential streets). Every effort will be made for routes to avoid residential frontages. The designated routes on City of Los Angeles streets are subject to approval by LADOT's Bureau of Traffic Management and may include, but will not necessarily be limited to: Pershing Drive (Westchester Parkway to Imperial Highway); Florence Avenue (Aviation Boulevard to I-405); Manchester Boulevard (Aviation Boulevard to I-405); Aviation Boulevard (Manchester Avenue to Imperial Highway); Westchester Parkway/Arbor Vitae Street (Pershing Drive to I-405); Century Boulevard (Sepulveda Boulevard to I-405); Imperial Highway (Pershing Drive to I-405); La Cienega Boulevard (north of Imperial Highway); Airport Boulevard (Arbor Vitae Street to Century Boulevard); Sepulveda Boulevard (Westchester Parkway to Imperial Highway); I-405; and I-105.

4.7.8 Impact Analysis

4.7.8.1 Impact Comparison 1: Peak Project Traffic Plus Baseline Traffic Measured Against Baseline

This comparison provides the basis for determining Project-related impacts. The comparison is based on Project-specific traffic generation during the peak construction period (December 2018) added to baseline traffic volumes (during peak times adjusted to overlap with commuter hours for a conservative analysis). The resulting levels of service were compared to the levels of service associated with the baseline condition. A significant impact would be realized if/when the thresholds of significance are met or exceeded. Impact comparisons between the proposed MSC North Project's peak traffic added to the baseline compared to the baseline is depicted in **Table 4.7-7**. As shown in Table 4.7-7, no significant impacts would occur during December 2018 under the proposed MSC North Project.

4.7.8.2 Impact Comparison 2: Cumulative Traffic (December 2018) Measured against Baseline

This comparison was conducted in two steps, which is consistent with CEQA Guidelines Section 15130. An initial comparison was conducted by comparing the level of service associated with peak cumulative traffic volumes with the baseline levels of service. This initial comparison was conducted to determine if there would be a significant cumulative impact. If a significant cumulative impact was determined, then an additional comparison was conducted to determine if the proposed MSC North Project would produce a cumulatively considerable contribution to the significant cumulative impact. This second comparison was conducted by comparing cumulative conditions both with and without the proposed MSC North Project. Cumulatively considerable contributions are realized when the thresholds of significance defined above are met or exceeded.

The impact comparison for this condition is depicted in **Table 4.7-8**. As shown in the table, it is anticipated that the following intersections would experience cumulative impacts where the project-component would be cumulatively considerable:

- Imperial Highway and Main Street (Intersection #10).
- Sepulveda Boulevard and Manchester Avenue (Intersection #23).
- Sepulveda Boulevard and Westchester Parkway (Intersection #25).

Table 4.7-7

Proposed Project - Level of Service Analysis Results - Impact Comparison 1: Baseline Compared to Project Plus Baseline

	Intersection	Peak Hour[1]	Baseline V/C[2]	Baseline LOS[3]	Project Plus Baseline V/C[2]	Project Plus Baseline LOS[3]	Change in V/C	Significant Impact[4]
1.	Aviation Boulevard and Century Boulevard	Construction AM	0.467	A	0.471	A	0.004	--
		Construction PM	0.594	A	0.597	A	0.003	--
2.	Imperial Highway and Aviation Boulevard	Construction AM	0.500	A	0.500	A	0.000	--
		Construction PM	0.512	A	0.520	A	0.008	--
3.	Aviation Boulevard and 111th Street	Construction AM	0.295	A	0.295	A	0.000	--
		Construction PM	0.404	A	0.405	A	0.001	--
4.	La Cienega Boulevard and Century Boulevard	Construction AM	0.626	B	0.629	B	0.003	--
		Construction PM	0.762	C	0.762	C	0.000	--
5.	Sepulveda Boulevard and Century Boulevard	Construction AM	0.424	A	0.429	A	0.005	--
		Construction PM	0.590	A	0.592	A	0.002	--
6.	Century Boulevard and I-405 Northbound Ramp	Construction AM	0.634	B	0.637	B	0.003	--
		Construction PM	0.459	A	0.461	A	0.002	--
7.	Imperial Highway and Douglas Street	Construction AM	0.199	A	0.199	A	0.000	--
		Construction PM	0.375	A	0.384	A	0.009	--
8.	Sepulveda Boulevard and Howard Hughes Parkway	Construction AM	0.219	A	0.243	A	0.024	--
		Construction PM	0.419	A	0.429	A	0.010	--
9.	Imperial Highway and La Cienega Boulevard	Construction AM	0.191	A	0.193	A	0.002	--
		Construction PM	0.453	A	0.458	A	0.005	--
10.	Imperial Highway and Main Street	Construction AM	0.499	A	0.686	B	0.187	--
		Construction PM	0.439	A	0.583	A	0.144	--
11.	Imperial Highway and Pershing Drive	Construction AM	0.184	A	0.432	A	0.248	--
		Construction PM	0.316	A	0.474	A	0.158	--
12.	Imperial Highway and Sepulveda Boulevard	Construction AM	0.496	A	0.496	A	0.000	--
		Construction PM	1.004	F	1.009	F	0.005	--
13.	Imperial Highway and Nash Street	Construction AM	0.362	A	0.363	A	0.001	--
		Construction PM	0.239	A	0.249	A	0.010	--
14.	Imperial Highway and I-105 Ramp	Construction AM	0.513	A	0.523	A	0.010	--
		Construction PM	0.471	A	0.475	A	0.004	--

Table 4.7-7

Proposed Project - Level of Service Analysis Results - Impact Comparison 1: Baseline Compared to Project Plus Baseline

	Intersection	Peak Hour[1]	Baseline V/C[2]	Baseline LOS[3]	Project Plus Baseline V/C[2]	Project Plus Baseline LOS[3]	Change in V/C	Significant Impact[4]
15.	Imperial Highway and I-405 Northbound Ramp	Construction AM	0.211	A	0.216	A	0.005	--
		Construction PM	0.480	A	0.485	A	0.005	--
16.	La Cienega Boulevard and Lennox Boulevard	Construction AM	0.164	A	0.164	A	0.000	--
		Construction PM	0.306	A	0.306	A	0.000	--
17.	La Cienega Boulevard and 111th Street	Construction AM	0.128	A	0.128	A	0.000	--
		Construction PM	0.311	A	0.312	A	0.001	--
18.	La Cienega Blvd. & I-405 Southbound Ramps North of Century	Construction AM	0.387	A	0.387	A	0.000	--
		Construction PM	0.410	A	0.411	A	0.001	--
19.	La Cienega Blvd. & I-405 Southbound Ramps South of Century	Construction AM	0.135	A	0.135	A	0.000	--
		Construction PM	0.284	A	0.284	A	0.000	--
20.	La Cienega Blvd. & I-405 Southbound Ramps North of Imperial	Construction AM	0.136	A	0.136	A	0.000	--
		Construction PM	0.218	A	0.218	A	0.000	--
21.	Sepulveda Boulevard and La Tijera Boulevard	Construction AM	0.337	A	0.337	A	0.000	--
		Construction PM	0.613	B	0.622	B	0.009	--
22.	Sepulveda Boulevard and Lincoln Boulevard	Construction AM	0.457	A	0.457	A	0.000	--
		Construction PM	0.750	C	0.755	C	0.005	--
23.	Sepulveda Boulevard and Manchester Avenue	Construction AM	0.395	A	0.395	A	0.000	--
		Construction PM	0.711	C	0.742	C	0.031	--
24.	Westchester Parkway and Pershing Drive	Construction AM	0.151	A	0.252	A	0.101	--
		Construction PM	0.213	A	0.386	A	0.173	--
25.	Sepulveda Boulevard and Westchester Parkway	Construction AM	0.309	A	0.309	A	0.000	--
		Construction PM	0.649	B	0.677	B	0.028	--
26.	Sepulveda Boulevard and 76th/77th Street	Construction AM	0.337	A	0.337	A	0.000	--
		Construction PM	0.440	A	0.451	A	0.011	--
27.	Sepulveda Boulevard and 79th/80th Street	Construction AM	0.253	A	0.253	A	0.000	--
		Construction PM	0.513	A	0.519	A	0.006	--
28.	Sepulveda Boulevard and 83rd Street	Construction AM	0.211	A	0.211	A	0.000	--
		Construction PM	0.458	A	0.464	A	0.006	--
29.	La Cienega Boulevard and 104th Street	Construction AM	0.111	A	0.112	A	0.001	--

Table 4.7-7

Proposed Project - Level of Service Analysis Results - Impact Comparison 1: Baseline Compared to Project Plus Baseline

Intersection	Peak Hour[1]	Baseline V/C[2]	Baseline LOS[3]	Project Plus Baseline V/C[2]	Project Plus Baseline LOS[3]	Change in V/C	Significant Impact[4]
	Construction PM	0.276	A	0.277	A	0.001	--

Notes:
1 The hours of analysis include the construction AM peak (6:00 AM - 7:00 AM), and the construction PM peak (3:30 PM - 4:30 PM.).
2 Volume to capacity ratio. Includes an LADOT ATSAC benefit applied at each intersection with the exception of intersections #6 and #15, which are not a part of the LADOT system.
3 Level of Service range: A (excellent) to F (failure).
4 -- Indicates "No Impact"

Source: Ricondo & Associates, Inc., using TRAFFIX, September 2013.

Table 4.7-8

Proposed Project - Level of Service Analysis Results - Impact Comparison 2: Cumulative Traffic (December 2018)

			Baseline [A]		Cumulative Peak (December 2018) Without Project [B]		Cumulative Peak (December 2018) With Project[1] [C]		Cumulative Impact Determination [C]-[A]		Cumulative Considerable Determination/Significant Impact [C]-[B]	
	Intersection	Peak Hour[1]	V/C[2]	LOS[3]	V/C[2]	LOS[3]	V/C[2]	LOS[3]	Change in V/C	Cumulative Impact?	Change in V/C	Cumulatively Considerable Contribution?
1.	Aviation Boulevard and Century Boulevard	Construction AM	0.467	A	0.584	A	0.588	A	0.121	--	0.004	--
		Construction PM	0.594	A	0.755	C	0.758	C	0.164	Yes	0.003	--
2.	Imperial Highway and Aviation Boulevard	Construction AM	0.500	A	0.623	B	0.623	B	0.123	--	0.000	--
		Construction PM	0.512	A	0.643	B	0.651	B	0.139	--	0.008	--
3.	Aviation Boulevard and 111th Street	Construction AM	0.295	A	0.371	A	0.371	A	0.076	--	0.000	--
		Construction PM	0.404	A	0.486	A	0.487	A	0.083	--	0.001	--
4.	La Cienega Boulevard and Century Boulevard	Construction AM	0.626	B	0.754	C	0.756	C	0.130	Yes	0.002	--
		Construction PM	0.762	C	1.045	F	1.045	F	0.283	Yes	0.000	--
5.	Sepulveda Blvd. and Century Blvd.	Construction AM	0.424	A	0.581	A	0.576	A	0.152	--	-0.005	--
		Construction PM	0.590	A	0.697	B	0.702	C	0.112	Yes	0.005	--
6.	Century Boulevard and I-405 Northbound Ramp	Construction AM	0.634	B	0.751	C	0.754	C	0.120	Yes	0.003	--
		Construction PM	0.459	A	0.543	A	0.545	A	0.086	--	0.002	--
7.	Imperial Highway and Douglas Street	Construction AM	0.199	A	0.227	A	0.228	A	0.029	--	0.001	--
		Construction PM	0.375	A	0.463	A	0.472	A	0.097	--	0.009	--
8.	Sepulveda Boulevard and Howard Hughes Parkway	Construction AM	0.219	A	0.314	A	0.338	A	0.119	--	0.024	--
		Construction PM	0.419	A	0.495	A	0.506	A	0.087	--	0.011	--
9.	Imperial Highway and La Cienega Boulevard	Construction AM	0.191	A	0.215	A	0.232	A	0.041	--	0.017	--
		Construction PM	0.453	A	0.526	A	0.531	A	0.078	--	0.005	--
10.	Imperial Highway and Main Street	Construction AM	0.499	A	0.589	A	0.764	C	0.265	Yes	0.175	Yes

Table 4.7-8

Proposed Project - Level of Service Analysis Results - Impact Comparison 2: Cumulative Traffic (December 2018)

Intersection	Peak Hour[1]	Baseline [A] V/C[2]	Baseline [A] LOS[3]	Cumulative Peak (December 2018) Without Project [B] V/C[2]	Cumulative Peak (December 2018) Without Project [B] LOS[3]	Cumulative Peak (December 2018) With Project[1] [C] V/C[2]	Cumulative Peak (December 2018) With Project[1] [C] LOS[3]	Cumulative Impact Determination [C]-[A] Change in V/C	Cumulative Impact Determination [C]-[A] Cumulative Impact?	Cumulative Considerable Determination/Significant Impact [C]-[B] Change in V/C	Cumulative Considerable Determination/Significant Impact [C]-[B] Cumulatively Considerable Contribution?
	Construction PM	0.439	A	0.555	A	0.693	B	0.254	--	0.138	--
11. Imperial Highway and Pershing Drive	Construction AM	0.184	A	0.427	A	0.589	A	0.405	--	0.162	--
	Construction PM	0.316	A	0.485	A	0.636	B	0.320	--	0.151	--
12. Imperial Highway and Sepulveda Boulevard	Construction AM	0.496	A	0.631	B	0.631	B	0.135	--	0.000	--
	Construction PM	1.004	F	1.186	F	1.191	F	0.187	Yes	0.005	--
13. Imperial Highway and Nash Street	Construction AM	0.362	A	0.513	A	0.524	A	0.162	--	0.011	--
	Construction PM	0.239	A	0.312	A	0.321	A	0.082	--	0.009	--
14. Imperial Highway and I-105 Ramp	Construction AM	0.513	A	0.644	B	0.654	B	0.141	--	0.010	--
	Construction PM	0.471	A	0.581	A	0.585	A	0.114	--	0.004	--
15. Imperial Highway and I-405 Northbound Ramp	Construction AM	0.211	A	0.250	A	0.256	A	0.045	--	0.006	--
	Construction PM	0.480	A	0.547	A	0.552	A	0.072	--	0.005	--
16. La Cienega Boulevard and Lennox Boulevard	Construction AM	0.164	A	0.199	A	0.199	A	0.035	--	0.000	--
	Construction PM	0.306	A	0.348	A	0.348	A	0.042	--	0.000	--
17. La Cienega Boulevard and 111th Street	Construction AM	0.128	A	0.146	A	0.148	A	0.020	--	0.002	--
	Construction PM	0.311	A	0.365	A	0.365	A	0.054	--	0.000	--
18. La Cienega Blvd. & I-405 Southbound Ramps North of Century	Construction AM	0.387	A	0.438	A	0.438	A	0.051	--	0.000	--
	Construction PM	0.410	A	0.464	A	0.464	A	0.054	--	0.000	--
19. La Cienega Blvd. & I-405 Southbound Ramps South of Century	Construction AM	0.135	A	0.179	A	0.179	A	0.044	--	0.000	--
	Construction PM	0.284	A	0.409	A	0.409	A	0.125	--	0.000	--

Table 4.7-8

Proposed Project - Level of Service Analysis Results - Impact Comparison 2: Cumulative Traffic (December 2018)

		Baseline [A]		Cumulative Peak (December 2018) Without Project [B]		Cumulative Peak (December 2018) With Project[1] [C]		Cumulative Impact Determination [C]-[A]		Cumulative Considerable Determination/Significant Impact [C]-[B]	
Intersection	Peak Hour[1]	V/C[2]	LOS[3]	V/C[2]	LOS[3]	V/C[2]	LOS[3]	Change in V/C	Cumulative Impact?	Change in V/C	Cumulatively Considerable Contribution?
20. La Cienega Blvd. & I-405 Southbound Ramps North of Imperial	Construction AM	0.136	A	0.168	A	0.168	A	0.032	--	0.000	--
	Construction PM	0.218	A	0.286	A	0.286	A	0.068	--	0.000	--
21. Sepulveda Boulevard and La Tijera Boulevard	Construction AM	0.337	A	0.441	A	0.471	A	0.134	--	0.030	--
	Construction PM	0.613	B	1.008	F	1.015	F	0.402	Yes	0.007	--
22. Sepulveda Boulevard and Lincoln Boulevard	Construction AM	0.457	A	0.561	A	0.561	A	0.104	--	0.000	--
	Construction PM	0.750	C	0.963	E	0.968	E	0.218	Yes	0.005	--
23. Sepulveda Boulevard and Manchester Avenue	Construction AM	0.395	A	0.481	A	0.511	A	0.116	--	0.030	--
	Construction PM	0.711	C	0.867	D	0.897	D	0.186	Yes	0.030	Yes
24. Westchester Parkway and Pershing Drive	Construction AM	0.151	A	0.395	A	0.486	A	0.335	--	0.091	--
	Construction PM	0.213	A	0.413	A	0.575	A	0.362	--	0.162	--
25. Sepulveda Boulevard and Westchester Parkway	Construction AM	0.309	A	0.857	D	0.949	E	0.640	Yes	0.092	Yes
	Construction PM	0.649	B	1.072	F	1.113	F	0.464	Yes	0.041	Yes
26. Sepulveda Boulevard and 76th/77th Street	Construction AM	0.337	A	0.385	A	0.385	A	0.048	--	0.000	--
	Construction PM	0.440	A	0.568	A	0.596	A	0.156	--	0.028	--
27. Sepulveda Boulevard and 79th/80th Street	Construction AM	0.253	A	0.292	A	0.320	A	0.067	--	0.028	--
	Construction PM	0.513	A	0.586	A	0.592	A	0.079	--	0.006	--
28. Sepulveda Boulevard and 83rd Street	Construction AM	0.211	A	0.253	A	0.281	A	0.070	--	0.028	--
	Construction PM	0.458	A	0.526	A	0.532	A	0.074	--	0.006	--
29. La Cienega Boulevard and 104th Street	Construction AM	0.111	A	0.130	A	0.131	A	0.020	--	0.001	--

Table 4.7-8

Proposed Project - Level of Service Analysis Results - Impact Comparison 2: Cumulative Traffic (December 2018)

		Baseline [A]		Cumulative Peak (December 2018) Without Project [B]		Cumulative Peak (December 2018) With Project[1] [C]		Cumulative Impact Determination [C]-[A]		Cumulative Considerable Determination/Significant Impact [C]-[B]	
Intersection	**Peak Hour[1]**	**V/C[2]**	**LOS[3]**	**V/C[2]**	**LOS[3]**	**V/C[2]**	**LOS[3]**	**Change in V/C**	**Cumulative Impact?**	**Change in V/C**	**Cumulatively Considerable Contribution?**
	Construction PM	0.276	A	0.326	A	0.326	A	0.050	--	0.000	--

Notes:
1 The hours of analysis include the construction AM peak (6:00 AM - 7:00 AM) and the construction PM peak (3:30 PM - 4:30 PM).
2 Volume to capacity ratio. Includes an LADOT ATSAC benefit applied at each intersection with the exception of intersections #6 and #15, which are not a part of the LADOT system
3 Level of Service range: A (excellent) to F (failure).
4 -- Indicates "No Impact"

Source: Ricondo & Associates, Inc., using TRAFFIX, September 2013.

4.7.9 Mitigation Measures

As described above in Section 4.7.8, the MSC North Project would result in significant construction-related traffic impacts. In some cases, it was determined that improvements would not be feasible to implement and that the impact would be significant and unavoidable. In other cases, it would be feasible to implement the mitigation under consideration. The discussion below presents both those improvements that were considered but determined to be infeasible, as well as those improvements that would be feasible and are thereby included in the recommended mitigation program.

4.7.9.1 Intersection Improvements Considered but Determined to be Infeasible

The following improvements were identified at the intersections that were anticipated to be significantly impacted by construction-related traffic generated by the MSC North Project, but were determined to be infeasible to implement. For each intersection, the improvement is described, as is the reason it is not considered to be feasible to implement.

- Imperial Highway and Main Street (Intersection #10)

  To mitigate the anticipated impacts, the westbound direction of Imperial Highway would need to be widened to provide one additional through lane. The resulting westbound lane configuration would consist of two left-turn lanes, two through lanes, and one through/right-turn lane. Implementation of this potential mitigation is determined infeasible due to right-of-way constraints along Imperial Highway and given that the short-term nature of the construction-related impact would not justify the widening of the intersection.

- Sepulveda Boulevard and Westchester Parkway (Intersection #25)

  To mitigate the anticipated impacts, the northbound direction of Sepulveda Boulevard would need to be widened to provide two left-turn lanes. The resulting northbound lane configuration would consist of two left-turn lanes, three through lanes, and a right-turn lane. Implementation of this potential mitigation is determined to be infeasible due to right-of-way constraints along Sepulveda Boulevard and given that the short-term nature of the construction-related impact would not justify the widening of the intersection.

4.7.9.2 Intersection Improvements Determined to be Feasible

The following improvements were identified at the intersections that were anticipated to be significantly impacted by construction-related traffic generated by the MSC North Project, and were determined to be feasible to implement.

- Sepulveda Boulevard and Manchester Avenue (Intersection #23)

  To mitigate construction-related impacts at this intersection, the westbound approach of Manchester Avenue would be widened to provide a right-turn lane and left-turn lane. The resulting westbound lane configuration would be comprised of two left-turn lanes, two through lanes, and one right-turn lane. Implementation of this mitigation measure

would reduce the impact to a less-than-significant level for all scenarios and all impact comparisons.

4.7.10 Level of Significance After Mitigation

Table 4.7-9 summarizes the final LOS with all feasible intersection improvements identified in Section 4.7.9. Given the physical constraints adjacent to two impacted intersections, Imperial Highway and Main Street (Intersection #10) and Sepulveda Boulevard and Westchester Parkway (Intersection #25), and the temporary nature of the construction-related impacts, these improvements are infeasible and will not be implemented. As a result, impacts to these intersections would be significant and unavoidable.

Table 4.7-9

Level of Service With Feasible Intersection Improvements

			Cumulative Peak (December 2018)						
			Without Project (Without Improvements) [A]		With Project (Without Improvements) [B]		With Project (With Improvements)[1] [C]		
	Intersection	Peak Hour[1]	V/C[2]	LOS[3]	V/C[2]	LOS[3]	V/C[2]	LOS[3]	Significant Impact with Improvements?
23.	Sepulveda Boulevard and Manchester Avenue	Construction PM	0.867	D	0.897	D	0.847	D	No

Notes:
1 The hours of analysis include the construction AM peak (6:00 AM - 7:00 AM) and the construction PM peak (3:30 PM - 4:30 PM).
2 Volume to capacity ratio. Includes an LADOT ATSAC benefit applied at the intersection.
3 Level of Service range: A (excellent) to F (failure).

Source: Ricondo & Associates, Inc., using TRAFFIX, September 2013.