LAX MASTER PLAN

MITIGATION MONITORING AND REPORTING PROGRAM (MMRP)

2009 ANNUAL

PROGRESS REPORT

PUBLISHED APRIL 2010

Los Angeles World Airports

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Prepared by

Los Angeles World Airports

LAX Master Plan MMRP Annual Progress Report
December 2009

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C. Status and Implementation of Program Plans dated December 2009

D. Sustainable Airport Planning, Design and Construction Guidelines dated February 2010

1.0 Executive Summary

Los Angeles City Council certified the LAX Master Plan Final Environmental Impact Report (FEIR) and adopted the LAX Master Plan Mitigation Monitoring and Reporting Program (MMRP) on December 7, 2004. Pursuant to Section 15097 of the California State CEQA Guidelines, the lead agency, Los Angeles World Airports (LAWA) is responsible for reporting, monitoring, and ensuring implementation of all applicable mitigation measures in accordance with the adopted MMRP. This document is the fifth annual progress report for the LAX Master Plan MMRP. This report provides a status update on applicable mitigation activities, policies and programs that have been and are being implemented by LAWA to ensure compliance with mitigation measures identified in the LAX Master Plan FEIR.

Additional project specific mitigation measures were identified in the Crossfield Taxiway Project Final Environmental Impact Report (CFTP FEIR), the second project-level tiered environmental review document for the LAX Master Plan Program. Los Angeles City Council approved the CFTP and certified the FEIR on February 9, 2009. Los Angeles City Council also adopted a CFTP MMRP to mitigate or avoid potentially significant effects on the environment during construction of the project. The status of the CFTP project-specific mitigation measures are also reported in this document.

Mitigation measures applicable to the LAX Master Plan and the CFTP are in the process of being implemented. Mitigation measures are implemented, monitored, and reported on in accordance to four main categories: (1) Program plans; (2) Construction-related mitigation measures; (3) Design mitigation requirements; and (4) “Stand-alone” mitigation plans.

Program plans are documents that address program-wide mitigation measures specified in the LAX Master Plan MMRP and provide a framework to clearly identify the mitigation measure, define the process of implementation, and establish monitoring and reporting requirements. Some of the program plans are required to update existing operating procedures within appropriate LAWA Divisions and some program plans may be required to develop new procedures and guidelines. Examples of updating existing operations include the maintenance of applicable elements of existing Aircraft Noise Abatement Program (ANAP) or implementing a Revised Aircraft Noise Mitigation Program. New program plans were developed to address specific mitigation measures from the MMRP, such as, the Mitigation Plan for Air Quality (MPAQ) to address air quality impacts. To mitigate or avoid potential significant impacts on the environment during construction, construction-related mitigation measures were implemented by requiring the Construction Contractors to comply with specific environmental requirements. Key areas of mitigation include reduction of traffic impacts by requiring construction deliveries not to coincide with peak traffic periods; and construction equipment replacements and/or retrofit for noise control and reduction of air pollution. Some mitigation measures, such as measures to maximize use of reclaimed water, were incorporated into the design of the CFTP project and will be incorporated into all other LAX Master Plan projects during the design process. “Stand-alone” mitigation plans are specifically developed to address specific impacts that are not linked to any particular project within the LAX Master Plan. These stand-alone plans are summarized in Section 6.0 of this report.

2.0 Introduction/Background

In December 2004, the Los Angeles City Council approved the LAX Master Plan and related entitlements for the future development of LAX. The LAX Master Plan allows for the first major new facilities for, and improvements to, the airport since 1984, and plans how projected growth in passengers and cargo at LAX can be accommodated, in part, through the year 2015. The approved LAX Master Plan includes airfield modifications, development of new terminals, and new landside facilities to accommodate passenger and employee traffic, parking, and circulation. The LAX Master Plan serves as a broad policy statement regarding the conceptual strategic planning framework for future improvements at LAX and working guidelines to be consulted by Los Angeles World Airports (LAWA) as it formulates and processes site-specific projects under the LAX Master Plan program.

Together with its approval of the LAX Master Plan, the Los Angeles City Council certified the LAX Master Plan Final Environmental Impact Report (FEIR) and adopted the LAX Master Plan Mitigation Monitoring and Reporting Program (MMRP). The MMRP (reference ***Appendix A***) documents all mitigation measures set forth in the FEIR. The basic framework of, and requirements for, the MMRP were established in conjunction with approval of the LAX Master Plan and are anticipated to remain in effect throughout implementation of the Master Plan. If additional new mitigation measures are required in conjunction with subsequent environmental (i.e., CEQA) review of individual projects proposed under the Master Plan, such as the Crossfield Taxiway Project (CFTP), the MMRP will be updated in a similar manner to include such additional project-specific measures. ***Appendix B*** includes the subsequent project-specific MMRP documents for the CFTP: (1) an MMRP index delineating which Master Plan commitments and mitigation measures are included within the overall MMRP; (2) Administrative refinements to the LAX Master Plan; (3) and four project-specific new mitigation measures applicable to the CFTP.

An MMRP Index included in Appendix B provides a comprehensive delineation of all Master Plan commitments, Master Plan mitigation measures, and project-specific mitigation measures adopted to date, and indicates where within Appendix A the complete text of each measure can be found, as well as an indication of the origin of each measure (i.e., the LAX Master Plan FEIR, the FAA Final Environmental Impact Statement and Record of Decision, or the Crossfield Taxiway Project FEIR). The MMRP Index provides the most current and comprehensive delineation of which Master Plan commitments and mitigation measures are included within the overall MMRP, recognizing that, if other new mitigation measures are added, the MMRP Index will be updated accordingly.

The primary purpose of this report is to document and report on the status of the current and recently completed mitigation measures set forth in the LAX Master Plan MMRP.

3.0 LAX Master Plan Program Plans

Over half of the mitigation measures from the LAX Master Plan MMRP can be addressed by implementing comprehensive program plans such as those identified in ***Appendix C*****.** Program plans are documents that address program-wide mitigation measures under the Master Plan by providing a framework to clearly identify these measures, define the process of implementation, and establish monitoring and reporting requirements. Program plans provide sufficient detail and functionality to address the compliance activities needed to satisfy the mitigation measures (i.e. Aircraft Noise Mitigation Program, Mitigation Plan for Air Quality, etc.). Appendix C lists program plans associated with the LAX Master Plan MMRP with applicable mitigation measures addressed and a brief description of each plan. Appendix C also identifies which program plans are triggered by the CFTP and the status of each plan as of December 2009. Denoted by **BOLD** font, there are 10 program plans triggered by the CFTP.

Status→ Implemented:
Ten (10) of the seventeen (17) program plans are applicable or were triggered by the LAX Master Plan project, the CFTP.

4.0 Design-Related Mitigation Requirements

Design mitigation measures are requirements that are being incorporated during the design phase of all on-going Master Plan Projects.

Examples of design mitigation measures that are being incorporated into upcoming and on-going Master Plan Projects are briefly described below:

MMRP Commitment or Mitigation Measure	Implementation Requirement
E-2 Coordination with Utility Providers	E-2 is a commitment from the LAX Master Plan MMRP. During the design process, the project design team will coordinate with all affected utility providers to ensure compatibility.
W-1 Maximize Use of Reclaimed Water	W-1 is a commitment from the LAX Master Plan MMRP. During the design process, the project design team will include a design requirement for the Contractor to utilize reclaimed water as feasible to satisfy this commitment.
FP-1 LAFD Design Recommendations	FP-1 is a commitment from the LAX Master Plan MMRP. This requires the Design team to work with LAFD to prepare plans that contain appropriate design features, such as emergency access, fire flow

requirements, fire hydrants, private roadway access for fire department equipment, and other recommendations.

Status→ On-going
Design plans will and have incorporated the above requirements during the design phase of a Master Plan project. Master Plan Projects that are actively in the design phase include the West and East Aprons and Taxilane T Projects.

5.0 Construction-Related Mitigation – Crossfield Taxiway Project (CFTP)

As shown in the MMRP Index in Appendix B, the CFTP Final EIR identified mitigation measures from the LAX Master Plan MMRP and four project-specific mitigation measures, MM-HA(CFTP)-1, MM-PA(CFTP)-1, MM-PA(CFTP)-2, and MM-BC(CFTP)-1 applicable to the construction of the CFTP. Construction related mitigation measures were complied with by incorporating mitigation requirements into the construction contract specifications for the CFTP. For a detailed description of each mitigation measure, please reference Appendix A, the LAX Master Plan MMRP. All applicable CFTP mitigation measures are being implemented during construction and monthly progress reports were available at the project construction site. Described herein is a brief progress summary on key mitigation measures, such as air quality, noise, and traffic for the CFTP.

5.1 Project Description

The Crossfield Taxiway Project (CFTP) is the second LAX Master Plan project to be implemented. The CFTP is located near the center of Los Angeles International Airport (LAX). As one of the airfield improvements included in the LAX Master Plan, the LAX CFTP encompasses improvements to a portion of the existing taxiway system that supports aircraft access between the north runway complex and the south runway complex. In particular, the project will provide a new crossfield taxiway, identified as Taxiway C13. In addition, a new parallel service road along Taxiway C13 would be built and an existing aircraft parking area would be relocated alongside the south end of Taxiway C13.

The new taxiway and associated improvements will help alleviate periodic congestion that currently occurs at or near existing crossfield Taxiways Q and S, will improve the safety and efficiency of aircraft ground movement during such times, and reduce aircraft taxi time and delay. This project will provide for both near-term and long-term environmental benefits, particularly as related to reduced air quality pollution, including greenhouse gas emissions, and reduced fuel consumption.

The new crossfield taxiway is designed to accommodate ADG VI aircraft (i.e., NLA such as the Airbus A380 and Boeing 747-8). Commercial operation of the A380 at LAX began in October 2008 and is anticipated to increase substantially by early 2012.

The project began construction in May 2009 and anticipated completion date is June 2010.

5.2 Key Construction-Related Mitigation Measures Implemented

5.2.1 Air Quality:

In accordance with the LAX MMRP MM-AQ-1, LAWA developed a Final Draft LAX Master Plan Mitigation Plan for Air Quality (LAX MP-MPAQ) in October 2005. This Plan was comprised of the Framework (MM-AQ-1), Construction-Related Mitigation Measures (MM-AQ-2), Transportation-Related Mitigation Measures (MM-AQ-3, and Operations-Related Mitigation Measures (MM-AQ-4). The purpose of the LAX MP-MPAQ was to reduce air pollutant emissions associated with implementation of the LAX Master Plan to levels equal to, or less than, the thresholds of significance identified in the Final EIR for the project. The LAX MP-MPAQ included feasible mitigation measures grouped into three (3) categories: 1) Construction-Related Measures; 2) Transportation-Related Measures, and; 3) Operations-Related Measures. Please see Section 6.2, Mitigation Plan for Air Quality, for an update of the "stand-alone" air quality mitigation plans MM-AQ-1 through MM-AQ-4.

The second component of the LAX MP-MPAQ, MM-AQ-2 Construction-Related Mitigation Measures is applicable to the Crossfield Taxiway Project (CFTP). In accordance with MM-AQ-2, the below list of applicable measures, grouped in six (6) categories, are being implemented during the entire construction duration of the CFTP.

5.2.1.1 Fugitive Dust Source Controls: Fugitive Dust Source Controls were designed to reduce the generation of wind-blown dust from construction areas, haul roads and stockpiles of raw materials. LAWA approved a Fugitive Dust Control Plan (FDCP) submitted by the CFTP construction contractor and enforced measures identified in the plan. In general, the CFTP project construction complies with Rule 403 of the South Coast Air Quality Management District (SCAQMD). Watering, dust suppressants, and non-toxic chemical stabilizers are the primary dust control measures for earth moving operations, disturbed soils and surface areas, unpaved roads, crushing operations, and all other construction activities that had the potential to contribute to the formation of fugitive dust. A publicly visible sign is posted within 50 feet of the project site entrance that included a contact person and phone number for dust-related complaints.

5.2.1.2 On-Road Mobile Source Controls: On-Road Mobile Source Controls are designed to reduce the potential impact from the exhaust of construction-worker vehicles and other construction vehicles and equipment on the public roadway network. The CFTP construction employee work/commute hours are scheduled during off-peak hours and the construction contractor has on-site lunch trucks available during construction to minimize off-site worker vehicle trips. Also, LAWA enforces the CARB Vehicle Idling Rule (Airborne Toxic Control Measure (ACTM)) to Limit Diesel Commercial Motor Vehicle Idling, CCR Title 13 Section 2485 for all on-road construction-related vehicles. This included briefings to vehicle drivers and equipment operators as well as the posting of idling restriction signage at construction area access gates and vehicle staging areas.

5.2.1.3 Non-Road Mobile Source Controls: Non-road Mobile Source Controls are designed to reduce potential impacts from the exhaust of heavy construction vehicles and equipment operating on the construction site. LAWA enforces the Contractor Vehicle Idling Rule as strictly as CARB commercial idling restrictions. Another mitigation measure prohibits staging or parking of construction vehicles (including workers' vehicles) on streets adjacent to sensitive receptors such as schools, daycare centers, and hospitals. A designated staging area and batch plant facility has been established for the CFTP project site to minimize off-site truck haul trips. A contractor employee parking area has also been designated.

In addition, LAWA requires all construction contractors to utilize Best Available Emission Control Technology (BACT) for all diesel equipment used during construction to reduce diesel emissions of particulate matter (PM), including fine PM, and secondarily, to reduce emissions of oxides of nitrogen (NOx). Exemptions are granted only if the Contractor provides written findings, based upon appropriate market research, that the best available emission control device for a particular piece of equipment is unavailable or interferes with the equipment operator's visual line-of-sight and thus imposes a safety concern. Exemptions are also approved for construction equipment used on the construction site for fewer than 20 calendar days per calendar year.

In addition, LAWA contracted with an independent third party to monitor the above BACT requirement in accordance with the Community Benefits Agreement. Additional detailed information on the BACT requirement, monitoring, and reporting is described in a separate report, the 2009 Community Benefits Agreement Progress Report, that is available at LAWA and posted on LAWA's website http://www.laxmasterplan.org for review.

5.2.1.4 Stationary Point Source Controls: Stationary Point Source Controls are designed to reduce emissions from generators and other power-producing devices used on the construction site. The CFTP construction contactor is required to use Ultra Low Sulfur Diesel fuel for all construction equipment, including stationary generators. LAWA and the construction contractor coordinate with the City's Department of Water and Power (DWP) to utilize electric grid power to operate stationary equipment when feasible.

5.2.1.5 Mobile and Stationary Source Controls: The Mobile and Stationary Source controls are designed to reduce the potential impact from construction activities during pollution alert periods and to reduce overall emissions by using appropriate equipment and fuels. In accordance with the CFTP contract specifications, the construction contractor is required to submit a daily log of air quality forecast monitoring/second-stage smog alert periods in the immediate vicinity of the Project. If and when a second-stage smog alert occurred, the Contractor is obligated to suspend use of all construction equipment. To date, there have been no second stage smog alerts issued during the CFTP construction.

Although not specifically required by the MMRP, the Contractor is required by California law to use Ultra Low Sulfur Diesel for all on-road and off-road

construction-related equipment. In addition, the Contractor is required to utilize construction equipment having the minimum practical engine size (i.e., lowest appropriate horsepower rating for intended job). LAWA requires all construction equipment to be properly maintained in accordance with manufacturers' specifications and schedules and monitors compliance with equipment maintenance schedules. All maintenance and has been adopted prohibiting the contractor from tampering with construction equipment to increase horsepower or to defeat emission control devices.

5.2.1.6 Administrative Controls: Administrative Controls call for the designation and employment of Mitigation Monitors to monitor and report on the implementation of mitigation measures contained in MM-AQ-2. LAWA designated an environmental mitigation monitor from the Construction Management Team to coordinate with the Contractor's environmental compliance officer to ensure implementation of all components of the construction-related measures. This is accomplished through direct inspections, records reviews, and investigation of complaints.

5.2.2 Traffic:

In accordance with the LAX MMRP, a number of mitigation measures relating to traffic impacts were applicable to the CFTP. LAWA and the CFTP construction contractor implemented a Construction Traffic Management Plan (CTMP) to mitigate potential traffic congestion during both peak and off-peak periods. Haul routes were located away from residential areas and were maintained regularly by the Contractor. Construction signage was provided for traffic management. Construction employee work hours were established to avoid peak and off-peak periods to minimize employee trips to and from the project site. LAWA established a designated employee parking location for construction workers with a shuttle system to transport workers to and from the project site.

Status→ In Progress:
Construction mitigation measures are included as specification language in the Contractor's contract documents and are enforceable with penalty clauses for non-compliance. These construction mitigation requirements will remain in effect throughout the construction period and will be monitored and reported on weekly.

6.0 "Stand-Alone" Mitigation Plans

"Stand-alone" mitigation plans are derived from specific mitigation measures to address the overall impacts of the LAX Master Plan. These stand-alone plans are not linked to any particular project within the LAX Master Plan. Stand-alone plans are divided into five (5) major impact areas: Noise, Air Quality, Biotic Communities, Hydrology and Water Quality, and Environmental Justice. Table 1 below provides a summary status of all "stand-alone" mitigation plans. Brief descriptions of each stand-alone plan are discussed in the following subsections.

Table 1: "Stand-Alone" Mitigation Plans - Summary Status			Completed	In Progress	Existing Policy	Future Plan
6.1	*Noise Mitigation Plans*					
6.1.A	N-1	Maintenance of Aircraft Noise Abatement Program			X	
6.1.B	MM-N-4	Update the Aircraft Noise Abatement Program				X
6.1.C	MM-N-5	Conduct Part 161 Study		X		
6.1.D	MM-LU-1	Implement Revised Aircraft Noise Mitigation Program		X		
6.1.E	MM-LU-2	Incorporate Residential Dwelling Units Exposed to Single Event Awakenings Threshold into Aircraft Noise Mitigation Program		X		
6.1.F	MM-LU-3	Conduct Study of the Relationship Between Aircraft Noise Levels and the Ability for Children to Learn		X		
6.1.G	MM-LU-4	Provide additional sound insulation for schools shown by MM-LU-3 to be significantly impacted by aircraft noise				X
6.1.H	MM-LU-5	Upgrade and Expand Noise Monitoring Program	X			
6.2	*Air Quality Mitigation Plans*					
6.2.A	MM-AQ-1	Mitigation Plan for Air Quality	X			
6.2.B	MM-AQ-2	Construction-Related Mitigation Measures	X			
6.2.C	MM-AQ-3	Transportation-Related Mitigation Measures		X		
6.2.D	MM-AQ-4	Operations-Related Mitigation Measures		X		
6.2.E	AQ-1	Air Quality Source Apportionment Study		X		
6.2.F	AQ-2	School Air Filters				X
6.2.G	AQ-3	Mobile Health Research Lab				X
6.3	*Biotic Communities*					
6.3.A	MM-ET-1	Riverside Fairy Shrimp Habitat Restoration		X		
6.3.B	MM-BC-8	Replacement of Habitat Units associated with the SAIP		X		
6.3.C	MM-BC-9	Conservation of Faunal Resources associated with the SAIP	X			
6.4	*Hydrology and Water Quality*					
6.4.A	HWQ-1	Develop Conceptual Drainage Plan	X			
6.6	*Environmental Justice*					
6.6.A	EJ-1	Aviation Curriculum		X		
6.6.B	EJ-2	Aviation Academy		X		
6.6.C	EJ-3	Job Outreach Center		X		
6.6.D	EJ-4	Community Mitigation Monitoring		X		

6.1 Noise Mitigation Plans

The following subsections describe the status of "stand-alone" noise mitigation plans that relate to existing LAX policies or newly developed programs to reduce noise impacts that may result from airport operations, air traffic dispersion, aircraft departures and other factors (N-1, MM-N-4, MM-N5). Mitigation Measures MM-LU-1 and MM-LU-5 address potential impacts on adjacent residential and other noise-sensitive uses newly exposed to high noise levels or significant increases in existing noise levels. MM-LU-2 addresses potential impacts on residential uses newly exposed to high single event noise levels that result in nighttime awakening that are located outside the current Aircraft Noise Mitigation Program (ANMP) boundaries. MM-LU-3 and MM-LU-4 address classroom disruption due to exposure to high single event or cumulative noise levels.

6.1.A N-1 Maintenance of Applicable Elements of Existing Aircraft Noise Abatement Program (ANAP)

The LAX Master Plan MMRP states:

"Maintenance of Applicable Elements of Existing Aircraft Noise Abatement Program*. All components of the current airport noise abatement program that pertain to aircraft noise will be maintained."*

The existing ANAP at LAX is currently maintained by LAWA's Noise Management Division (NMD). The existing ANAP at LAX sets forth LAWA's noise abatement traffic, flight, and runway use procedures. All aircraft operations at LAX must comply with FAA regulations and procedures for noise abatement and noise emission standards and with all rules, policies, procedures, resolutions and ordinances established by the City of Los Angeles, LAWA, and LAWA's Board of Airport Commissioners relative to noise abatement. LAWA's NMD will continue to maintain the Noise Abatement Program throughout implementation of the LAX Master Plan projects. Actions indicating compliance include submission of the Quarterly Report per the 2005 Stipulated Variance to the County of Los Angeles. Included in each quarterly report is a short summary of actions indicating compliance with each condition of the variance, including "continuing, in full force and effect, the implementation and enforcement of the…noise abatement policies."

Status→ Existing Policy:
LAWA has complied with this commitment by continually maintaining the existing Aircraft Noise Abatement Program (ANAP) at LAX.

6.1.B. MM-N-4 Update the Aircraft Noise Abatement Program Elements as applicable to adapt to the future Airfield configuration

The LAX Master Plan MMRP states:

*"**Update the Aircraft Noise Abatement Program Elements as applicable to adapt to the future Airfield configuration.** When existing runways are relocated or reconstructed as part of the Master Plan, the aircraft noise abatement actions*

associated with those runways shall be modified and re-established as appropriate to assure continuation of the intent of the existing program."

Status→ Not required at this time:
No changes to the ANAP were required as a result of the completion in September 2008 of SAIP construction. The existing Preferential Runway Use Policy is still in full force and effect.

6.1.C MM-N-5 Conduct Part 161 Study to Make Over-Ocean Procedures Mandatory

The LAX Master Plan MMRP states:

"Conduct Part 161 Study to Make Over-Ocean Procedures Mandatory. *A 14CFR Part 161 Study shall be initiated to seek federal approval of a locally-imposed Noise and Access Restriction on departures to the east during Over-Ocean Operations, or when Westerly Operations remain in effect during the Over-Ocean Operations time period."*

The Part 161 Study is a technical and legal study regarding implementation of a Noise and Access Restriction. The proposed restriction includes departures between the hours of midnight and 6:30 a.m. over the communities to the east of LAX, when LAX is operating under normal weather conditions (when LAX is either in over-ocean operations or remains in westerly operations and excluding times when LAX operates in easterly operations). (49 U.S.C. Section 47521 *et seq.*) The Part 161 Study must meet the relevant requirements of the Airport Noise and Capacity Act of 1990 (ANCA) and the Part 161 regulations (14 C.F.R. Part 161).

Status→ In Progress:
LAWA began the Part 161 Study for LAX in June 2005 and was originally expected to take approximately 3 to 5 years to complete, but will take about five and one-half to six years. The Part 161 Study process encompasses three general elements including: (1) data collection and analysis to justify the LAX Proposed Restriction; (2) evaluation and explanation of the legal, environmental, and economic impacts of the proposed restriction; and (3) preparation and submittal to the FAA of the required reports and application materials. Work on the study was suspended in January 2007, but was resumed in 2009 upon receipt of new fleet mix forecasts and conversion of the forecasts to a format usable in the Integrated Noise Model.

6.1.D. MM-LU-1 Implement Revised Aircraft Noise Mitigation Program

The LAX Master Plan MMRP states:

*"**Implement Revised Aircraft Noise Mitigation Program.*** *LAWA shall expand and revise the existing Aircraft Noise Mitigation Program (ANMP) in coordination with affected neighboring jurisdictions, the State, and the FAA. The expanded Program shall mitigate land uses that would be rendered incompatible by noise impacts associated with implementation of the LAX Master Plan, unless such uses are subject to an existing avigation easement and have been provided with noise mitigation funds. LAWA shall accelerate the ANMP's timetable for achieving full*

compatibility of all land uses within the existing noise impact area pursuant to the requirements of the California Airport Noise Standards (California Code of Regulations, Title 21, Subchapter 6) and current Noise Variance. With the exception of a possible new interior noise level standard for schools to be established through the study required by Mitigation Measure MM-LU-3, Conduct Study of the Relationship Between Aircraft Noise Levels and the Ability of Children to Learn, the relevant performance standard to achieve compatibility for land uses that are incompatible due to aircraft noise (i.e., residences, schools, hospitals and churches) is adequate acoustic performance (sound insulation) to ensure an interior noise level of 45 CNEL or less. As an alternative to sound insulation, incompatible property may also achieve compatibility if the incompatible use is converted to a noise-compatible use.

LAWA shall revise the ANMP to incorporate new, or expand existing measures, including, but not necessarily limited to, the following:

- *Continued implementation of successful programs to convert existing incompatible land uses to compatible land uses through sound insulation of structures and the acquisition and conversion of incompatible land use to compatible land use.*

- *Ongoing monitoring and provision of annual updates in support of the requirements of the current LAX Noise Variance pursuant to the California Airport Noise Standards, with the updates made available (upon request) to affected local jurisdictions, the Airport Land Use Commission of Los Angeles County, and other interested parties.*

- *Continue the current pre- and post-insulation noise monitoring to ensure achievement of interior noise levels at or below 45 CNEL.*

- *Accelerated rate of land use mitigation to eliminate noise impact areas in the most timely and efficient manner possible through:*

  - *Increased annual funding by LAWA for land use mitigation;*

  - *Reevaluating avigation easements requirements with sound insulation mitigation;*

  - *Provision by LAWA of additional technical assistance, where needed, to local jurisdictions to support more rapid and efficient implementation of their land use mitigation programs;*

  - *Reduction or elimination, to the extent feasible, of structural and building code compliance constraints to mitigation of sub-standard housing.*

- *Revised criteria and procedures for selection and prioritization of properties to be sound insulated or acquired in consideration of the following:*

  - *Insulation or acquisition of properties within the highest CNEL measurement zone;*

- *Acceleration of the fulfillment of existing commitments to owners wishing to participate within the current ANMP boundaries prior to proceeding with newly eligible properties;*

- *Insulation or acquisition of incompatible properties with high concentrations of residents or other noise-sensitive occupants such as those housed in schools or hospitals.*

- *Amend the ANMP to include libraries as noise-sensitive uses eligible for aircraft noise mitigation.*

- *Upon completion of the acquisition and/or soundproofing commitment under the current Program, expand the boundaries of the ANMP as necessary over time. LAWA will continue preparing quarterly reports that monitor any expansion of the 65 CNEL noise contours beyond the current ANMP boundaries. Based upon these quarterly reports, LAWA will evaluate and adjust the ANMP boundaries, periodically as appropriate, so that as the 65 CNEL noise contours expand, residential and noise sensitive uses newly impacted by 65 CNEL noise levels would be included within the Program."*

  The Aircraft Noise Mitigation Program (ANMP) describes the ongoing efforts by LAWA to convert existing incompatible land uses surrounding LAX to compatible land uses through the implementation of two noise mitigation strategies: (1) sound insulation of structures; and (2) acquisition of property followed by the conversion of its incompatible land use to compatible land use (land recycling).

  LAWA implements the ANMP in an effort to reduce adverse impacts of airport noise and achieve airport standards as set forth in Chapter 6 of Title 21 of the California Code of Regulations. ANMP reports are also specifically required by the State of California as a formal condition of approval of the three-year variances granted by the State to LAWA airports that have not achieved land use compatibility. Based on current data and funding commitments, the ANMP documents the progress made toward achieving land use compatibility and projects the ultimate date when full compatibility will be reached.

Status→ In Progress:
As previously described, LAWA has an existing program in place with periodic updates to the State of California and the County of Los Angeles. The last update was the 2005 ANMP which was submitted in October of 2006. The status of LAWA's existing Aircraft Noise Mitigation Program is also reported in **Appendix C**. In addition, specific updates are as follows:

- LAWA continues to implement two very successful programs to convert existing incompatible land uses to compatible land uses through sound insulation of structures and the acquisition and conversion of incompatible land use to compatible land use.

- Annual updates in support of the requirements of the current LAX Noise Variance

pursuant to the California Airport Noise Standards are submitted with the Quarterly Report for the second quarter each year, with the updates provided to all affected jurisdictions, and made available upon request to other interested parties.

- Pre- and post-insulation noise monitoring audits are regularly conducted to ensure achievement of interior noise levels at or below 45 CNEL.

- Land use mitigation programs are being implemented as fast as possible given that participation in the program is voluntary.

- LAWA makes available land use mitigation funds as soon as requested.

- Avigation easements are no longer required.

- Under very limited circumstances, as required by California Airport Noise Standards where acoustical treatments alone are insufficient to convert residential land uses to compatible uses with airport operations, noise easements are required for residential sound insulation mitigation.

- LAWA makes available the resources for timely technical assistance, where needed, to local jurisdictions to support more rapid and efficient implementation of their land use mitigation programs.

- Selection of and prioritization of properties to be sound insulated or acquired are in consideration of the following:

    a. Insulation or acquisition of properties within the highest CNEL measurement zone.

    b. Acceleration of the fulfillment of existing commitments to owners wishing to participate within the current ANMP boundaries prior to proceeding with newly eligible properties.

6.1.E. MM-LU-2 Incorporate Residential Dwelling Units Exposed to Single Event Awakenings Threshold into Aircraft Noise Mitigation Program

The LAX Master Plan MMRP states:

*"**Incorporate Residential Dwelling Units Exposed to Single Event Awakenings Threshold into Aircraft Noise Mitigation Program.** In addition to any restrictive measures that may be implemented resulting from completion of Mitigation Measure MM-N-5, Conduct Part 161 Study to Make Over-Ocean Departure Procedures Mandatory, the boundaries of the ANMP will be expanded to include residential uses newly exposed to single event exterior nighttime noise levels of 94 dBA SEL, based on the Master Plan alternative that is ultimately approved and periodic reevaluation and adjustments by LAWA. Uses that are newly exposed would be identified based on annual average conditions as derived from the most current monitored data."*

Status→ In Progress:
A methodology to produce single event noise contours for a given calendar year was developed in October 2006. However, as a result of the recent completion of construction on the south airfield complex, the first year of normal operations will be in 2009 and the single event contours will then be produced within the first quarter of 2010. Contours will then be updated annually and will be incorporated into a database. Once LAWA receives the number and the exact location of the affected properties, the current program will then be re-evaluated. All of the newly impacted areas, by definition, would be outside of the 65 CNEL area as defined by the ANMP. Therefore, they will be prioritized accordingly. As part of the standard Variance requirements, annual ANMP progress reports and periodic ANMP report updates will continue to be submitted to the County of Los Angeles.

6.1.F MM-LU-3 Conduct Study of the Relationship Between Aircraft Noise Levels and the Ability of Children to Learn

The LAX Master Plan MMRP states:

*"**Conduct Study of the Relationship Between Aircraft Noise Levels and the Ability of Children to Learn.** Current Studies of aircraft noise and the ability of children to learn have not resulted in the development of a statistically reliable predictive model of the relative effect of changes in aircraft noise levels on learning. Therefore a comprehensive study shall be initiated by LAWA to determine what, if any, measurable relationship may be present between learning and the disruptions caused by aircraft noise at various levels. An element of the evaluation shall be the setting of an acceptable replacement threshold of significance for classroom disruption by both specific and sustained aircraft noise events."*

Status→ In Progress:
The Transportation Research Board's (TRB's) Airport Cooperative Research Program (ACRP) has allocated $450,000 to perform a study entitled *Evaluating the Impact of Aviation Noise on Learning*. An RFP for this project was issued on January 29, 2010**,** and selection of the contractor to perform the work is scheduled for April 19, 2010. The actual study will commence shortly thereafter. One LAWA staff member is on the panel created by the TRB to define the scope and objectives of the study, select the contractor performing the work, evaluate the work, and review and comment on the draft and final report.

The objectives of the ACRP study, as currently defined, will be to determine when aircraft noise impacts student learning and what noise metric(s) best defines impact on learning. The study is expected to take 20 months once the selection is made and the consultant is under contract with the TRB.

Upon completion of the study, LAWA will assess the conclusions of the study against the goal of setting an acceptable threshold of significance for classroom disruption by both specific and sustained aircraft noise events. If the goals are met, then further study will not be necessary. If the goals are not met, or only partially met, then LAWA will assess the need for additional study, as required.

6.1.G MM-LU-4 Provide Additional Sound Insulation for Schools Shown by MM-LU-3 to be Significantly Impacted by Aircraft Noise.

The LAX Master Plan MMRP states:

*"**Provide Additional Sound Insulation for Schools Shown by MM-LU-3 to be Significantly Impacted by Aircraft Noise.** Prior to completion of the study required by Mitigation Measure MM-LU-3, Conduct Study of the Relationship Between Aircraft Noise Levels and the Ability of Children to Learn, and within six months of the commissioning of any relocated runways associated with implementation of the LAX Master Plan, LAWA shall conduct interior noise measurements at schools that could be newly exposed to noise levels that exceed the interim LAX interior noise thresholds for classroom disruption of 55 dB Lmax, 65 dB Lmax, or 35 Leq(h), as presented in Section 4.1 Noise, of the Final EIS/EIR. All school classroom buildings (except those within schools subject to an avigation easement) that are found through the noise measurements to exceed the interim interior noise thresholds, as compared to the 1996 baseline conditions presented in the Final EIS/EIR, would become eligible for soundproofing under the ANMP.*

Upon completion of the study required by Mitigation Measure MM-LU-3 and acceptance of its results by peer review of industry experts, any schools found to exceed a newly established threshold of significance for classroom disruption based on comparison with 1996 baseline conditions due to implementation of the LAX Master Plan, shall be eligible for participation in the ANMP administered by LAWA, unless they are subject to an existing avigation easement. A determination of which schools become eligible will be made following application of the new threshold based on measured data."

Status→ Not required at this time:
LAWA will implement this measure's requirements contingent on the results from the study required by MM-LU-3. It should be noted that there is ongoing work related to settlement agreements that were reached between LAWA and both the Inglewood Unified and Lennox School Districts. LAWA is actively assisting each school district in their efforts to mitigate the schools within the ANMP boundary, per those agreements. Current efforts have included submitting a letter to the FAA asking that a determination be made related to which schools are impacted. Per instructions from the FAA, this determination will be made as part of the PFC application process. LAWA is proceeding with the PFC application pending information from each school district sufficient for the FAA to make such a determination.

6.1.H MM-LU-5 Upgrade and Expand Noise Monitoring Program

The LAX Master Plan MMRP states:

***"Upgrade and Expand Noise Monitoring Program.** LAWA shall upgrade and expand its existing noise monitoring program in surrounding communities through new system procurement, noise monitor location, and equipment installation. Permanent or portable monitors shall be located in surrounding communities to record noise data 24 hours per day, seven days per week for correlation with FAA radar data to cross-reference noise episodes with flight patterns. The upgraded*

system will support LAWA and other jurisdictional ANMP's when considering adjustments to airport noise mitigation boundaries."

Status→ Complete:
On April 18, 2005, LAWA issued a contract to upgrade and expand the Aircraft and Noise Monitoring and Management System (ANMMS) for LAWA at LAX, ONT, and VNY. LAWA entered into a contract with Lochard Corporation in July 1995 to install the latest software called the Aircraft Noise and Operations Monitoring System (ANOMS) version 8x. The Site Acceptance Testing (SAT) was completed in October 2008 and the 30-day Reliability Testing was conducted in mid 2009. Full acceptance of the system, including new design components (all hardware, software, web applications, and reporting capabilities) is complete at this time. The System Acceptance Certificates were issued for all three LAWA airports as of November 2009. In December 2009, LAWA submitted the required ANOMS documentation to the State of California, Department of Transportation (CalTrans) for approval per the requirement of CCR Title 21, Subchapter 6. On February 4, 2010, CalTrans approved LAWA's Noise Monitoring Plan for LAX, ONT, and VNY airports. The system is fully functional and a specific number of remaining issues are included as punchlist items to be resolved before final payment is made to Lochard.

As part of the new system design, LAWA replaced all of the actual noise monitoring equipment located throughout the communities impacted by LAX operations. LAWA installed many new permanent noise monitors to better represent the actual noise levels in different areas, including areas well outside of the current 65 dB CNEL Noise Impact Area. A total of 39 noise monitors have been installed at LAX and all are operational with the exception of 3 sites that are awaiting approval for power. These monitors are all permanent sites, and will be collecting data continuously. Data from each site is downloaded nightly into the ANOMS system, and processed with the flight data to determine the noise levels associated with airport operations. The data is then used to calculate the annual noise levels represented in the State-required Quarterly Reports.

6.2 Mitigation Plans for Air Quality

The following subsections describe the status of "stand-alone" air quality mitigation plans that serve to reduce air quality impacts associated with implementation of the LAX Master Plan. While the LAX Master Plan FEIR identifies the general function, purpose, and orientation of various air quality mitigation measures, the following mitigation plans provide specifics regarding the design and implementation of those measures.

6.2.A MM-AQ-1 LAX Master Plan – Mitigation Plan for Air Quality (Framework)

The LAX Master Plan MMRP states, in part:

***"LAX Master Plan - Mitigation Plan for Air Quality** - LAWA shall expand and revise the existing air quality mitigation programs at LAX through the development of an LAX Master Plan –Mitigation Plan for Air Quality (LAX MP-MPAQ)."*

Status→ Completed:
In 2005, LAWA completed a Mitigation Plan for Air Quality that established the overall framework for the implementation of specific measures for mitigating air quality impacts associated with the LAX Master Plan. The MM-AQ-1 Plan was adopted by the Board of Airport Commissioners in December 2005, in conjunction with approval of the SAIP (i.e., prior to implementation of the first project under the LAX Master Plan).

6.2.B MM-AQ-2 Construction-Related Mitigation Measures

The LAX Master Plan MMRP states, in part:

"Construction-Related Mitigation Measures *- The required components of the construction-related air quality mitigation measures are itemized below [starting on page 4-725 of the FEIR]. These components include numerous specific actions to reduce emissions from on-road and non-road mobile sources and stationary engines. All of these measures must be in place prior to commencement of the first Master Plan construction project and must remain in place through build out of the Master Plan. An implementation plan will be developed which provides available details as to how each of the elements of this construction-related mitigation measures will be implemented and monitored."*

Status→ Completed:
LAWA completed a Construction-Related Mitigation Plan that set forth specific implementation requirements for the measures referenced in the FEIR. The MM-AQ-2 Plan was adopted by the Board of Airport Commissioners in December 2005, in conjunction with approval of the SAIP (i.e., prior to implementation of the first project under the LAX Master Plan) and have been integrated into the CFTP construction specifications as appropriate. The execution of this implementation plan (i.e., the MM-AQ-2 Plan) will occur in conjunction with construction of each Master Plan project.

6.2.C MM-AQ-3 Transportation-Related Mitigation Measures

The LAX Master Plan MMRP states, in part:

"Transportation-Related Mitigation Measure *- The primary feature of the transportation-related air quality mitigation measure is the development and construction of at least eight (8) additional sites with Flyaway service similar to the service provided by the Van Nuys Flyaway currently operated by LAWA. The intent of these FlyAway sites is to reduce the quantity of traffic going to and from LAX by providing regional locations where LAX employees and passengers can pick up an LAX-dedicated, clean-fueled bus that will transport them from a FlyAway closer to their home or office into LAX and back."*

Status→ In Progress:
LAWA operates four FlyAway routes between LAX and remote boarding locations at Van Nuys, Union Station, Westwood, and Irvine. The Irvine Station FlyAway began service on November 16, 2009 and data is incomplete for emissions mitigation due to the short period of operation. The other three

existing routes now demonstrate a consistent and mature level of passenger demand, despite a decline in 2009 mirroring the percentage drop in air passenger volume at LAX. In 2009, the network realized an average daily ridership of over 3,800 passengers, reduced vehicle emissions by almost 25 tons per day, and removed 3,275 vehicles per day, travelling a combined total of 65,750 miles on roads approaching LAX each day.

Table 1, below, summarizes the FlyAway network mitigation data for years 2008 through 2009. Note that the ridership on the Westwood FlyAway is down in 2009, from 2008, but more emissions have been mitigated due to increased efficiency (service reductions resulted in fewer bus trips for about the same number of passengers). Also note, driving costs reported by AAA for 2009 changed very little from 2008.

Van Nuys	**CY 2008**	**CY 2009**
Ridership	987,705	880,024
Vehicle Trips Saved	839,491 (2,300/day)	747,969 (2,049/day)
Reduction in Vehicle Miles Traveled	17.6 million miles	15.7 million miles
Emissions reduced [(1)]	7,400.6 tons	6,455.5 tons
Auto operating cost savings	$11.0 million	$9.8 million
Union Station	**CY 2008**	**CY 2009**
Ridership	433,216	409,491
Vehicle Trips Saved	368,208 (1,009/day)	348,043 (954/day)
Reduction in Vehicle Miles Traveled	7.3 million miles	6.9 million miles
Emissions reduced [(1)]	2,549.8 tons	2,322.2 tons
Auto operating cost savings	$4.5 million	$4.3 million

Westwood	**CY 2008**	**CY 2009**
Ridership	125,288	115,048
Vehicle Trips Saved	106,487 (292/day)	97,784 (268/day)
Reduction in Vehicle Miles Traveled	1.3 million miles	1.2 million miles
Emissions reduced [(1)]	67.7 tons	211.9 tons
Auto operating cost savings	$796,000	$731,000
Irvine	**CY 2008**	**CY 2009**
Ridership	N/A	1,500
Vehicle Trips Saved	N/A	1,275
Reduction in Vehicle Miles Traveled	N/A	60,000 miles
Emissions reduced [(1)]	N/A	N/A (insufficient data)
Auto operating cost savings	N/A	$40,000

[(1)] Emissions reported include NOX, CO, ROG, PM10 and CO2

The LAX Master Plan MMRP states, in part:

***"Transportation-Related Mitigation Measure** – Other feasible mitigation elements may be developed to ensure that the emission reductions for this transportation-related measure are achieved. These may include, for example"… Clean Vehicle Fleets measures such as:*

- *Promoting commercial vehicles/trucks/vans using terminal areas (LAX and regional intermodal) to install SULEZ/ZEV engines to reduce vehicle air emissions.*

Status→ In Progress:
LAWA's fleet is the largest Alternative Fuel Vehicle (AFV) airport fleet in the nation and includes over 550 AFVs. Currently, over 71% of LAWA's fleet vehicles and equipment at LAX are AFV's. Additionally, 100% of the LAX courtesy shuttle fleet is powered by natural gas. LAWA has designed and built a state-of-the-art, high-technology LNG/LCNG fueling station at LAX and acquired over $5 million in grant funding to offset the differential cost of AFVs. LAWA has partnered with the Department of Water and Power to install 32 public access electric vehicle charging stations at LAX and partnered with Praxair, BP, SCAQMD, California Energy Commission, and the U.S. DOE to build the first retail hydrogen fueling station at an airport.

The AFV program has been recognized as one of the most successful airport AFV programs in the nation and a world-class model for airports and other agencies. Awards and recognition include:

- Clean Air Awards from the Coalition for Clean Air and South Coast Air Quality Management District
- Certificate of Distinguished Achievement from the California Natural Gas Vehicle Coalition
- Clean Cities Certificate for participation in the U.S. Department of Energy's Clean Cities Program
- Recognized by the U.S. Department of Energy Clean Cities Program as a "success story for airports"

6.2.D. MM-AQ-4 Operations-Related Mitigation Measures

The LAX Master Plan MMRP states in part:

***"Operations-Related Mitigation Measure:** The primary component of the operations-related air quality mitigation measure consists of one airside item, the conversion of ground support equipment (GSE) to extremely low emission technology (such as electric power, fuel cells, or other future technological developments)."*

Status→ In Progress:
LAWA is continuing to evaluate the goals of MM-AQ-4 and investigate available technology and potential technological developments regarding extremely low emission GSE.

6.2.E. AQ-1 Air Quality Source Apportionment Study

The LAX Master Plan MMRP states in part:

"Air Quality Source Apportionment Study. *LAWA will conduct an air quality source apportionment study to evaluate the contribution of on-airport aircraft emissions to off-airport air pollutant concentrations."*

Status→ In Progress:
LAWA commenced an Air Quality and Source Apportionment Study (AQSAS) to assess air quality in areas adjacent to LAX. This AQSAS will be the most comprehensive air monitoring, modeling, and data analysis program to be undertaken by LAWA for one of its facilities.

This study will include the installation-monitoring stations in selected areas to collect and measure both criteria and toxic air pollutants on site at LAX and at sites in the communities surrounding LAX. This study was planned to be conducted in three phases. The first phase commenced in March 2008. The second phase included a Technology and Methodology Feasibility Demonstration Project (Demonstration Project) where data was collected continuously at five on-airport sites during June, July, and August 2008 to assess the feasibility of the approach and methodology for Phase 3. The results of the Demonstration Project will be used to validate the scientific approach of the long-term study.

The Study's scope or Work Plan was developed by a Technical Working Group (TWG) comprised of representatives from U.S. Environmental Protection Agency (EPA), Federal Aviation Administration (FAA), California Air Resources Board, South Coast Air Quality Management District, State of California Office of Environmental Health Hazard Assessment, Desert Research Institute, University of Southern California, research experts in the fields of receptor modeling and air pollutant monitoring, and representatives from community organizations.

Several meetings were held in 2008 to communicate the status, progress and results of the study to a larger Briefing Group consisting of a diverse panel of environmental and public health regulatory agencies, as well as Federal, State and Local elected officials.

At the commencement of the Demonstration Project, LAWA only authorized funding for the consultant to perform Phases 1 and 2 since a detailed scope for Phase 3 could not be developed until the Demonstration Project was completed and the data fully analyzed. In 2008, the Study's TWG reviewed the draft documentation from the Technology and Methodology Feasibility Demonstration Project (Demonstration Project) and recommended that before launching into the Long-Term Study (Phase 3), additional evaluation of the Demonstration Project data was needed prior to preparing a technical work plan for Phase 3. In 2009, planning commenced and continues in the development of an approach to complete the study.

In 2008, the Study's TWG reviewed the draft documentation from the Technology and Methodology Feasibility Demonstration Project (Demonstration Project) and recommended that additional evaluation of the data was needed prior to

developing an approach and work plan for Phase 3. Planning is currently underway to develop an approach to complete the study.

In September 2008, a website was created to make project information available to the public. The website includes background information on the study, the schedule and photographs of the Demonstration Project, and handout materials and presentations. The website will continue to be updated as project information becomes available. The website address is http://www.lawa.org/welcome_lax.aspx?id=1060.

6.2.F AQ-2 School Air Filters

The LAX Master Plan MMRP states:

"School Air Filters. *LAWA will provide funding for air filtration system at qualifying public schools with air conditioning systems in place. The qualifying schools will be determined based upon review of the conclusions and recommendations of the Air Quality Source Apportionment Study to be conducted in Master Plan Commitment AQ-1."*

Status→ Not required at this time:
LAWA will initiate the process of identifying qualifying schools following completion of AQ-1, Air Quality Source Apportionment Study.

6.2.G AQ-3 Mobile Health Research Lab

The LAX Master Plan MMRP states:

"***Mobile Health Research Lab****. LAWA will explore the ability to fund/co-fund, to the extent feasible and permissible by federal and local regulations, or seek funding sources to support the goal of a Mobile Health Research Lab. The goal of the Mobile Health Research Lab will be to research and study, not diagnose or treat, upper respiratory and hearing impacts that may be directly related to the operation of LAX."*

Status→ Not required at this time:
It is expected that the Health Study will commence after the completion of AQ-1, Air Quality Source Apportionment Study.

6.3 Biotic Communities Mitigation Plans

6.3.A MM-ET-1 Riverside Fairy Shrimp Habitat Restoration

The LAX Master Plan MMRP states in part:

*"**Riverside Fairy Shrimp Habitat Restoration.** LAWA or its designee shall undertake mitigation for direct impacts to 0.04 acre (1,853 square feet) of degraded wetland habitat containing embedded cysts of Riverside fairy shrimp*

and potential indirect impacts to 1.26 acres of degraded wetland habitat containing embedded cysts of the Riverside fairy shrimp."

Status→ In-Progress:
On April 20, 2004, the United States Fish and Wildlife Service (USFWS) issued a Biological Opinion (BO) based on their review of Alternative D of the Draft EIS/EIR for LAWA Master Plan for LAX and its effects on the federally endangered Riverside Fairy Shrimp (*Streptocephalus woottoni*, "RFS") in accordance with Section 7 of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 et seq.). The April 20, 2004 BO proposed several conservation measures (i.e. mitigation requirements) to offset direct and indirect impacts on the RFS. Subsequently, on April 8 2005, the USFWS issued a BO based on their review of the proposed operations and maintenance activities for LAX and its effects on the RFS. Details of all of the conservation measures are described in both BOs.

LAWA's Riverside Fairy Shrimp Habitat Restoration, identified as Mitigation Measure MM-ET-1 in the LAX Master Plan MMRP, is consistent with the BOs from the USFWS. This mitigation measure involves the creation of an RFS habitat at a site approved by the USFWS. LAWA is currently investigating a comparable site at Madrona Marsh in City of Torrance (COT), California. To date, LAWA's mitigation activities include the following as it pertains to MM-ET-1:

Completion of the salvage and storage of RFS cyst-bearing soils at LAX in support of the April 20, 2004, BO for Alternative D and the April 8, 2005 BO for Operations and Maintenance. Conservation Measures 5 and 9 of the April 20, 2004 BO and Conservation Measure 8 of the April 8, 2005 BO identify the methods of salvage and storage of RFS cyst-bearing soils located at LAX.

On July 13, 2005 through August 8, 2005, LAWA salvaged and stored approximately 1800 cubic feet of RFS cyst-bearing soils formerly located at LAX SAIP site. The RFS cyst-bearing soils collected are being stored in a climate-controlled facility near LAX. The facility is secured and monitored by video cameras 24 hours a day. Carlsbad Fish and Wild Life Office inspected and approved the RFS-cyst storage facilities on August 2, 2005. On December 2, 2005, the FAA transmitted a letter confirming the completion of the RFS cysts conservation work to the United States Fish & Wildlife Services.

LAWA and the FAA were pursuing alternate plans to create an RFS habitat on Federal lands located at the former Marine Corps Air Station El Toro. In August 2006, the proposed RFS habitat creation site was the subject of discussions between the FAA and the FBI regarding the future compatibility of the site between FBI training and creation of a RFS habitat. After further investigation, in May 2008, it was determined that the El Toro site does not have suitable soil for developing RFS habitat. With the concurrence of the USFWS, FAA and LAWA, all mitigation for the RFS cysts will occur at the Madrona Marsh location in COT. The USFWS is coordinating this effort directly with the COT. Currently LAWA and COT are in the process of negotiating a Memorandum of Understanding (MOU) for use of Madrona Marsh for RFS Habitat Restoration activities.

On September 24, 2009 LAWA's Environmental Services Division (ESD) signed a work task proposal (Tasks 7 through 21) with Coffey Environments (former CTL Environmental Services) for soils investigation, site characterization, and vernal pool design, plans, and specifications for Madrona Marsh. Based on a review of topographic map and communication with COT personnel, the work area at the Madrona Marsh has expanded. In this task, Coffey obtained additional soil profile descriptions at backhoe pits excavated in the expanded portion of the work area and analyzed for suitability for RFS and vernal pool habitat. The soils work indicated that the area of suitable soils was sufficient to produce a couple of acres of Riverside fairy shrimp (RFS) and vernal pool habitat. The original and additional soils work identified areas in which it will be possible to: 1. Enhance existing RFS habitat through changes in water supply; 2. Enhance RFS habitat through grade changes; and 3. Expand existing RFS habitat through a combination of changes in grade and water supply.

6.3.B MM-BC-8 Replacement of Habitat Units Associated with the SAIP (Disturbed/Bare Ground and Non-Native Grassland/Ruderal Areas)

The SAIP MMRP states in part:

*"**Replacement of Habitat Units Associated with the South Airfield Improvement Project**. LAWA or its designee shall undertake mitigation for the loss of 17.2 habitat units resulting from implementation of the SAIP. These habitat units shall be replaced at a 1:1 ratio within the FAA-owned habitat preserve at the former Marine Corps Air Station El Toro (El Toro site), or other appropriate site."*

Status→ In Progress:
On August 6, 2007, the BOAC approved an MOU between LAWA and the Palos Verdes Peninsula Land Conservancy (PVPLC) for the development of 21 acres of coastal sage/needle grass habitat units in complete fulfillment of LAWA's MM-BC-8 commitment. This mitigation plan was approved by both the U.S. Fish & Wildlife Service and the California Department of Fish & Game. The new location near the coast, unlike the previously proposed location at El Toro, is better suited as a replacement site. LAWA funded PVPLC in the amount of $610,938 for this conservation work to be performed over a three year period. Each year, PVPLC will provide an annual progress report documenting the result of their effort.

In November 2008, the first year of the 3 years mitigation was completed. PVPLV selected the "3 Sisters Reserve Habitat" as the restoration site. A site restoration plan, containing proposed plant selection and the specifics of the restoration work, was submitted to LAWA's for review and approval. On November 20, 2008, LAWA staff inspected the "3 Sisters Reserve Habitat" and approved the site selection. Field work began in 2009 and is coordinated with the annual rain.

Restoration of each specified habitat requires site preparation. All areas to be restored were dominated by exotic species. As part of the site preparation, in January 2009, the PVPLC contracted with a herder to graze 300 goats on the site, removing non-native weeds and trees, initiating the site preparation needed

for irrigation installation and native planting and seeding. After three weeks of grazing, the goats were removed and PVLPC field staff took over, removing and chipping over 500 non-native acacia trees. PVPLC staff continued with site preparation throughout the spring and summer, targeting non-native weeds and removing thatch to increase the survival success of the native plants and seeds to be planted. In August, Nakae & Associates were contracted to install irrigation in the 13-acre coastal sage scrub habitat zone and the irrigation installation was completed in October. The planting and seeding began in October.

Approximately 7,930 native container plants and 778 lbs. of native seed were planted between late October and December 31. All the container plants and native seed were collected on lands managed by the PVPLC and propagated at the PVPLC's native plant nursery in San Pedro in 2008 and 2009. PVPLC staff will continue monitoring the progress of the project through vegetation transect sampling and bird surveys.

6.3.C MM-BC-9 Conservation of Faunal Resources Associated with the SAIP (San Diego black-tailed jackrabbit and the loggerhead shrike)

The SAIP MMRP states in part:

"**Conservation of Faunal Resources Associated with the South Airfield Improvement Project.** *Directed surveys for the San Diego black-tailed jackrabbit and the loggerhead shrike shall be undertaken by a qualified wildlife biologist at least 14 days before construction activities. LAWA or its designee shall relocate any observed San Diego black-tailed jackrabbit individuals currently inhabiting the SAIP project areas. Relocation efforts shall be coordinated with CDFG.*"

Status→ Completed:
LAWA contracted with a qualified wildlife biologist who conducted surveys to comply with this measure in 2005 prior to the start of the SAIP construction. Reference the 2005 MMRP annual report for documentation of the survey. Relocation efforts are not required.

6.3.D MM-BC-13 (Revised) Replacement of State-Designated Sensitive Habitats
The LAX Master Plan MMRP states in part:

"Replacement of State-Designated Sensitive Habitats. FAA is responsible for conservation measures related to the relocation of navigational aids, while LAWA is responsible for all other conservation measures. Mitigation shall be undertaken for the loss of State-designated sensitive habitat within the Los Angeles/El Segundo Dunes, including the Habitat Restoration Area."

Status→ Not required at this time:
To be implemented following completion of the Specific Plan Amendment Study (SPAS) and approval of a north airfield runway project.

6.4 Environmental Justice

LAWA has worked with local and contracting communities to develop programs that address the current and projected demands for qualified employees and contractors. Some of these programs are:

6.4.A EJ-1 Aviation Curriculum

The LAX Master Plan MMRP states in part:
*"**Aviation Curriculum**: LAWA will work with local school districts to offer aviation-related curriculum at elementary schools, middle schools, high schools and colleges in affected communities near the Los Angeles International Airport. Potential pilot schools could include: Beulah Payne Elementary School, Lennox Middle School, Hillcrest Continuation School, Inglewood High School, Morningside High School, and Los Angeles Southwest College."*

Status→ In Progress:
LAWA is continually coordinating with the local school districts in developing aviation-related curriculum.

6.4.B EJ-2 Aviation Academy.

The LAX Master Plan MMRP states in part:
*"**Aviation Academy**: LAWA will work with local school districts to provide comprehensive educational and trade training for aviation-related careers, targeting students in the affected communities to provide them with increased career opportunities."*

Status→ In Progress:
The Aviation Career Education (ACE) Academy is a free week-long motivational program to provide students with a basic understanding of career opportunities within the aviation industry, as well as a general knowledge about LAX. This program is open to all Los Angeles area seventh-and eighth-grade students (between the ages of 12 and 14) and high school students (between the ages of 15 and 18) in communities surrounding LAX, including El Segundo, Hawthorne, Inglewood, Lennox, South Los Angeles, and Westchester/Playa del Rey. Annually, 75 local students participate in the program. Program participants attend site visits and presentations by organizations such as the FAA, Boeing Aircraft, Federal Drug Enforcement Agency, Airlines, LSG Sky Chefs, and others.

The Gateways Internship Program was launched by LAWA as a collaborative initiative of the Inglewood Unified School District, South Bay Private Industry Council and Los Angeles World Airports. The program was developed as one of several approaches to address the current and projected demand for qualified employees to fill positions at LAWA. This program provides paid internships to local youth currently attending high school or college. The program has been expanded to include the Los Angeles Unified School District, Centinela Valley High School District, and the El Segundo Unified School District. The program consists of a high school and a college internship component. The goal of the program is to expose local high school and college students to career opportunities in the aviation industry. This is accomplished by providing on-the-job practical experience in the aviation field through education, training and

mentoring programs and activities.

AIRCademics, "Passport to Art Program" is comprised of a 30-week curriculum offered at the Westchester YMCA, near LAX. This school-to-career enrichment program focuses on teaching the subjects of science, math, reasoning and aviation through the completion of art projects. Participants, who are of middle school age, also learn about the history of flight while attending lectures and field trips. The final class project is the creation of a comic book about LAX. Delivery of this program has been provided to 15 participants this year.

"Wings to Fly" Mentoring Program connects positive adult role models, in this case airport employees, with at-risk youth in local high schools. Over a seven-month period, students come to LAX twice a month for professionally facilitated workshops, guest speakers and one-on-one time with their mentors, and learn about airport opportunities in a fun atmosphere. This program has been provided to 40 participants.

LAWA selected Animo Charter School and St. Bernard High School to participate in the 2009 Adopt-A-School Program. The students were offered presentations, tours and behind the scenes visits to observe aviation careers.

LAWA is continually coordinating with local school districts to provide education and trade training programs for aviation-related careers. Positive feedback was received from participants surveyed in these LAX education outreach programs.

6.4.C EJ-3 Job Outreach Center

The LAX Master Plan MMRP states in part:
*"**Construction and Other LAX-Related Job Outreach -** LAWA will create or utilize an existing resource center to assist historically underrepresented and at-risk local residents to find surrounding airport-related businesses through training and comprehensive outreach."*

Status→ In Progress:
Within Fiscal Year 2008-2009 LAWA attended over 80 job fairs and spoke at numerous career days on elementary and high school campuses. On July 28, 2009, LAWA launched a website that contains interactive applications for users to create and post resumes as well as apply for open positions and internships at LAWA. There is a link to the Los Angeles Business Assistance Virtual Network (BAVN) which provides information about upcoming procurement opportunities and job fairs. The Business Database will be the next innovation to be added to the site. It will allow prime contractors to locate qualified MBE, WBE and DBE subcontractors who have previously worked on LAWA projects.

Gateway Internship Program

The Gateways Internship Program employed 25 local high school students for the summer in 2009. There are 25 college students currently working with LAWA divisions, The Federal Aviation Administration (FAA), and LAWA employers at LAX, Van Nuys and Ontario Airports. This year LAWA had international students from: Germany, Korea and Japan. As a result of funding from the American Recovery and Reinvestment Act (ARRA), many community based organizations have approached LAWA to place youth in airport jobs. LAWA is working with the

LAWA employers to assist in the placement of both youth and adults in support of the Federal Stimulus Program.

Job Training Program

LAWA initiated its Job Training Program (JTP) in January 2007. LAWA is successfully able to partner with agencies funded through other means to provide job training opportunities to our clients. Currently, LAWA is working with agencies that provide an array of training, including computer skills, customer service, time management, leadership skills, and other classes. Collaboratively, we were able to work with Loyola Marymount University (LMU) and LAWA Landside Operations Division to train 150 shuttle bus drivers for Servisair. They were given courses in anger management, customer service, and cultural diversity. These drivers were also given training which allowed them to become ADA certified as well.

Based on surveys to employers, both internally and externally, new training courses will include Conversational Spanish for Concessions Division staff and Management training in the areas of communication, coaching, and interviewing with Duty Free Shops (DFS). The conversational Spanish course officially started on September 8, with a class of about 20 LAWA students and is offered at no cost to LAWA through training provider grant funds to provide training services.

As a result of our partnership with the Los Angeles Community College District, LAWA has been able to train over 50 high school and college interns. For the second consecutive year, through Los Angeles City College (LACC), students have taken courses in life and work skills, customer service, time management, and work ethics. The students received college credit for their efforts.

We have been able to refer over 65 individuals to pre-apprenticeship construction training. As a result, over two dozen have received their Pre-Apprenticeship Construction Training Certificate. Through the BJRC partnerships, many local residents have completed training in customer service, retail sales, auto mechanics and other disciplines.

As of June 30, 2009

JTP Referrals: 414 Completed Training 297*

*This number includes new employees as well as incumbent workers.

First Source Hiring Program

The First Source Hiring Program (FSHP) is designed to provide residents from the communities immediately surrounding the airport and those most impacted by airport operations access to airport jobs. Those communities are a part of the Project Impact Area (PIA) and are comprised of South Los Angeles, El Segundo, Hawthorne, Inglewood, and Lennox.

Through a competitive process, LAWA hired Agile 1 to automate the FSHP and to provide staff to operate the program day to day. Now fully automated, with a

new Applicant Tracking System (ATS), the FSHP may now quickly assist residents with information about LAWA jobs.

LAWA works closely with the Work Source, One-Stop Centers, community and faith-based organizations that serve the airport area and beyond to register potential candidates on the ATS for positions with LAWA. LAWA staff is training the job developers at these organizations to prescreen and qualify their clients to be eligible for opportunities at LAWA as they arise. Their clients are able to post their resumes and apply for positions where they may be reviewed on line by hiring managers.

LAWA has made inroads with Walsh-Austin JV, the prime contractor LAWA selected to construct the Tom Bradley gates and the Core. They will list their open positions on the FSHP ATS and encourage their subcontractors to follow suit as they begin their work at LAWA.

As of 6/30/2009 - Actual

FSHP	Referrals	2,717* *	Hires:	603***

**These candidates were referred to approximately 952 positions with 71 LAWA employers.

***Number of confirmed hired, actual number may be higher.

With 56 Program Partner Companies

Hiring Goals:	Through June 2008	through June 2009
FSHP	250	675

6.4.D EJ-4 Community Mitigation Monitoring

The LAX Master Plan MMRP states in part:

*"**Community Mitigation Monitoring:** LAWA will include community participation in monitoring the implementation of the final Mitigation Measures and Master Plan Commitments in order to ensure agency compliance and accountability. The community participation will include a diverse group of residents, stakeholders, environmental specialists and community leaders that will convene on a regular basis."*

Status→ In Progress:
The LAX Master Plan Stakeholders Liaison Office (LAX MP SLO) was created as a component of the LAX Plan and the LAX Specific Plan by the Los Angeles City Council to ensure public participation in the implementation of the LAX Master Plan. The LAX MP SLO provides stakeholders with direct access to applicable information on the LAX Master Plan. In addition, LAWA is working with

parties to the Stipulated Settlement agreed upon by the City of El Segundo, City of Inglewood, City of Culver City, County of Los Angeles, and Alliance for a Regional Solution to Airport Congestion and LAWA in February 2006, and is working in partnership with the LAX Coalition for Economic, Environmental and Educational Justice (LAX Coalition), which includes community groups, environmental organizations and labor unions.

LAWA is continually working with the Stakeholders Liaison Office, parties to the Stipulated Settlement, and the LAX Coalition to encourage community participation in the development of the LAX Master Plan.

7.0 Additional Mitigation Updates

7.1 Hydrology and Water Quality

7.1.A MM-HWQ-1 Update Regional Drainage Facilities

The LAX Master Plan MMRP states in part:

"*Regional drainage facilities should be upgraded, as necessary, in order to accommodate current and projected future flows within the watershed of each stormwater outfall resulting from cumulative development. This could include upgrading the existing outfalls, or building new ones. The responsibility for implementing this mitigation measure lies with the Los Angeles County Department of Public Works and/or the City of Los Angeles Department of Public Works, Bureau of Engineering. A portion of the increased costs for the upgraded flood control and drainage facilities would be paid by LAX tenants and users in accordance with the possessory interest tax laws and other legal assessments, consistent with federal airport revenue diversion laws and regulations and in compliance with state, county and city laws. The new or upgraded facilities should be designed in accordance with the drainage design standards of each agency.*"

Status→ In Progress:
LAWA completed a Conceptual Drainage Plan which was adopted in conjunction with the SAIP. To determine if regional drainage facilities should be upgraded, LAWA is performing an analysis to evaluate the post-construction drainage conditions for ongoing and future projects.

7.2 Energy Supply and Light Emissions

7.2.A E-1 Energy Conservation and Efficiency Program

The LAX Master Plan MMRP states in part:

"LAWA will seek to continually improve the energy efficiency of building design and layouts during the implementation of the LAX Master Plan. Title 24, Part 6, Article 2 of the California Administrative Code establishes maximum energy

consumption levels for heating and cooling of new buildings to assure that energy conservation is incorporated into the design of new buildings."

7.2.B L1-2 Use of Non-Glare Generating Building Materials

The LAX Master Plan MMRP states in part:

"Prior to approval of final plans, LAWA will ensure that proposed LAX facilities will be constructed to maximize use of non-reflective materials and minimize use of undifferentiated expanses of glass."

7.2.C L1-3 Lighting Controls

The LAX Master Plan MMRP states in part:

"*Prior to final approval of plans for new lighting, LAWA will conduct reviews of lighting type and placement to ensure that lighting will not interfere with aeronautical lights or otherwise impair Airport Traffic Control Tower or pilot operations."*

Status→ In Progress:
LAWA is committed to integrating sustainable practices in the areas of Sustainable Design, Energy and Atmosphere, Materials and Resources, Water Efficiency, Transportation Resources, and Administrative Processes into operations and administrative processes throughout our organization.

7.3 Solid Waste

7.3.A SW-1 Implement an Enhanced Recycling Program

The LAX Master Plan MMRP states in part:

"LAWA will enhance their existing recycling program, based on successful programs at other airports and similar facilities."

Status→ In Progress:
LAWA's Construction and Maintenance Services Recycling and Source Reduction Program achieved a 66.5% recycling rate at LAX for calendar year 2008. This achievement exceeds the previous year's rate by 1%. With this accomplishment, LAWA continues on the path towards meeting the Mayor's goal of 70% recycling by 2015.

Other notable achievements for the Recycling and Source Reduction Program include the following:

- Increased metal recycling by 62%
- Increased cardboard recycling by 40%
- Increased e-waste recycling by 29%

LAWA's goals for 2009 included working with tenants, particularly cargo handlers, to encourage development of their own in-house recycling programs. Additionally, we will continue to research methods to recycle food waste, one of the largest components of our waste stream.

7.4 Construction Impacts

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

The LAX Master Plan MMRP states in part:

"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."

Status→ In Progress:
This measure was included in CFTP contract specifications and will be included in all ongoing and future contract specifications.

7.4.B C-2 Construction Personnel Airport Orientation

The LAX Master Plan MMRP states in part:

"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."

Status→ In Progress:
This was included in CFTP contract specifications and will be included in all ongoing and future contract specifications.

7.5 Design, Art, and Architecture Applications/Aesthetics

7.5.A DA-2 Update and Integrate Design Plans and Guidelines

The LAX Master Plan MMRP states in part:

"The following plans and guidelines will be individually updated or integrated into a comprehensive set of design-related guidelines and plans; LAX Street Frontage and Landscape Development Plan (June 1994), LAX Air Cargo Facilities Development Guidelines (April 1998; updated August 2002), and LAX Northside Design Plan and Development Guidelines (1989), including conditions addressing heights, setbacks and landscaping."

Status→ In Progress:
In addition to updating the above referenced plans, LAWA has developed and commenced implementing comprehensive Airport Sustainable Planning, Design

and Construction Guidelines (LSAG) that apply to all LAWA projects, not only LAX Master Plan-related. The LSAG provides structure to LAWA's sustainability commitment related to planning, design and construction on airport property through communicating expectations and implementing a transparent process. The Guidelines were updated in 2009 (dated February 2010) and are included in Appendix D and available on LAWA's web site at http://www.lawa.aero/welcome_LAWA.aspx?id=1036.

Implementation of these guidelines will meet green building specifications, and improve the use of recycling, alternative fuel sources, recycled water, water conservation, reduce energy requirements, and reduce the airport's overall Greenhouse Gas emissions.

7.6 Water Use

7.6.A W-2 Water Conservation

The LAX Master Plan MMRP states in part:

"LAWA will enhance the existing Street Frontage and Landscape Plan for LAX to ensure the ongoing use of water conservation practices at LAX facilities. The intent of this program, to minimize the potential for increased water use due to implementation of the LAX Master Plan program, is also in accordance with regional efforts to ensure adequate water supplies for the future. Features of the enhanced conservation program will include identification of current water conservation practices and an assessment of their effectiveness; identification of alternate future conservation practices; continuation of the practice of retrofitting and installing new low-flow toilets and other water-efficient fixtures in all LAX buildings, as remodeling takes place or new construction occurs; use of Best Management Practices for maintenance; use of water efficient vegetation for landscaping, where possible; and continuation of the use of fixed automatic irrigation for landscaping."

Status→ In Progress:
Currently, 35% of all landscaped areas at LAX are irrigated by reclaimed water. The number of landscaped areas served is limited to those areas accessible to the reclaimed water supply pipeline. Approximately 40.2 million gallons or 123 acre-feet of water is conserved each year through the use of reclaimed water. Additionally, much of the irrigation system at LAX is monitored and controlled though a centralized computer irrigation control center. This system further conserves valuable water resources.

Buildings and passenger terminals at LAX feature low-flow devices on all toilets and sinks, with phone numbers prominently posted in all restrooms so people can notify maintenance staff if they encounter leaky faucets or other water problems. In addition, water used in on-airport car wash facilities is recycled.

LAWA is also working with DWP to determine the feasibility of bringing reclaimed water into the Central Terminal Area for use in the Central Utilities Plant cooling tower. The DWP estimates that this will reduce LAX's water usage by approximately 90 acre/ft per year.

8.0 Awards and Achievements

8.1 Alternative Fuels

LAWA's Alternative Fuels Program began in 1993. The program is based on LAWA's commitment to take a leadership role in clean air efforts through the use of vehicles and equipment powered by alternative fuels. Alternative fuels are defined as zero to low-emission fuels, other than traditional fossil fuels such as gasoline and diesel.

Alternative fuels currently in use by LAWA include:

- Liquefied natural gas (LNG)
- Compressed natural gas (CNG)
- Electricity
- Solar electricity
- Propane

Policy

In April 1999, by Resolution 20609, the Board of Airport Commissioners formally adopted the Los Angeles World Airports Alternative Fuels Vehicle Program. Recognizing the environmental benefits to be derived from alternative fuel vehicles, this policy states in part that "Los Angeles World Airports is committed to identifying and replacing existing fossil fuel vehicles and equipment with alternative fuel vehicles and equipment, including vehicles powered by compressed natural gas, liquefied natural gas, electricity, and other clean burning alternative fuels."

Program Elements

- Replace existing fossil fuel powered vehicles and equipment with alternative fuel vehicles (AFVs) whenever possible during the scheduled vehicle and equipment replacement program.
- Investigate the cleanest fuels available for all applications.
- Develop and maintain fueling infrastructure with the goal of minimizing fuel cost and maximizing the use of AFVs in the fleet.
- Continue the research, training, and communication necessary to insure a successful program and serve as a resource for companies and other agencies interested in understanding the principles and benefits of using alternative fuels.

Current Fleet at LAX

- 50 LNG buses and trucks
- 214 CNG sedans
- 158 CNG light trucks
- 64 CNG street sweepers, medium/heavy duty trucks, buses
- 33 Propane trucks, forklifts
- 17 electric trucks, forklifts, man-lifts
- 23 hybrid gasoline-electric sedans and trucks

Total: 557 units, or 71% of fleet

Accomplishments

- Over 71% of LAWA's fleet vehicles and equipment at LAX are AFVs. Fleet includes over 555 AFVs.
- 100 % of the LAX courtesy shuttle fleet is powered by natural gas.
- Designed and built a state-of-the-art, high-technology LNG/LCNG fueling station at LAX.
- Acquired over $5 million in grant funding to offset the differential cost of AFVs.
- Partnered with the Department of Water and Power to install 32 public access electric vehicle charging stations at LAX.
- Partnered with Praxair, BP, SCAQMD, California Energy Commission, and the U.S. DOE to build the first retail hydrogen fueling station at an airport.
- The AFV program has been recognized as one of the most successful airport AFV programs in the nation and a world-class model for airports and other agencies. Awards and recognition include:
    - Clean Air Awards from the Coalition for Clean Air and South Coast Air Quality Management District
    - Certificate of Distinguished Achievement from the California Natural Gas Vehicle Coalition
    - Clean Cities Certificate for participation in the U.S. Department of Energy's Clean Cities Program.
    - Recognized by the U.S. Department of Energy Clean Cities Program as a "success story for airports"

8.2 Rideshare

Each year, LAWA's Rideshare Program saves over 8 million vehicle miles, over 600,000 gallons of gasoline, over 8 billion pounds of air pollutants, thousands of dollars in insurance and vehicle depreciation costs, and countless hours spent on Southern California's over-burdened streets and freeways. LAWA's multi-faceted Rideshare Program includes 63 vanpools, 75 carpools, 320 free monthly transit passes, and numerous marketing and advocacy activities to recruit and retain program participants. Currently, about 27% of LAWA's employees are participating in the Rideshare Program, saving over 1,000 vehicle trips to LAWA facilities every day.

In 2009, LAWA won its 13th consecutive Rideshare Diamond Award for "Innovative Transportation Program" from L.A. County Metro. This award was for utilizing customized transportation information to assist employees who were being redeployed from Ontario International Airport (ONT) to LAX. LAWA also participated in two award-winning team projects. The first was a national award from the Association for Commuter Transportation (ACT) received by the Southern California Chapter of ACT for "Creative Excellence" for creating a live action Rideshare-Murder-Mystery to show how creative marketing can be fun and effective, even on a shoestring budget during challenging economic times. The second team award was received by L.A. County Metro from the South

Coast Air Quality Management District (SCAQMD). Metro received the "Clean Air Award" for its Rideshare Plan Maker Training CD, which was created with input from industry leading transportation programs, including LAWA Rideshare.

In 2009, LAWA also met the required Average Vehicle Ridership (AVR) Target under SCAQMD Rule 2202 for the 5th consecutive year.

9.0 Summary

To date, all applicable mitigation measures adopted for the LAX Master Plan MMRP are in the process of being implemented. Some mitigation measures were complied with by the development of program plans, while others are satisfied by their incorporation into LAX Master Plan project designs and/or construction specifications. The majority of the "Stand-Alone" mitigation plans are already in-progress if not completed. All applicable mitigation measures triggered by CFTP are being implemented. LAWA will continue to monitor and report annually on the progress of the LAX Master Plan MMRP as implementation of the program progresses.

APPENDIX A

LAX MASTER PLAN MMRP AS ADOPTED SEPTEMBER 2004

REFERENCE

LAWA Website:
http://www.laxmasterplan.org/publications.cfm
for a copy of the document

APPENDIX B

MMRP
(NEW MEASURES, REVISED MEASURES, SAIP SPECIFIC MEASURES, AND CFTP SPECIFIC MEASURES)

USERS GUIDE

The contents of this document constitute the Mitigation Monitoring and Reporting Program (MMRP) applicable to projects developed under the Los Angeles International Airport (LAX) Master Plan. The MMRP specifies the monitoring and reporting requirements related to implementation of Master Plan Commitments and Mitigation Measures set forth in the LAX Master Plan Final Environmental Impact Report (FEIR), which is a program EIR that addresses the overall Master Plan, as well as the implementation of additional mitigation measures, if any, set forth in subsequent environmental review documents that tier off of the Master Plan FEIR, but are specific to an individual project. In addition to the FEIR and subsequent related environmental review documents completed in accordance with the requirements of the California Environmental Quality Act (CEQA), this MMRP includes the Master Plan Commitments and Mitigation Measures set forth in the LAX Master Plan Improvements Final Environmental Impact Statement (FEIS) and the related Federal Aviation Administration (FAA) Record of Decision (ROD) completed in accordance with the requirements of the National Environmental Policy Act (NEPA).

The basic framework of, and requirements for, the MMRP were established in conjunction with approval of the LAX Master Plan in December 2004, and are anticipated to remain in effect throughout implementation of the Master Plan. If, additional new mitigation measures are required in conjunction with subsequent environmental (i.e., CEQA) review of individual projects proposed under the Master Plan, the MMRP will be updated to include such additional project-specific measures. These new project-specific mitigation measures will be added at the end of the MMRP to supplement, but will not replace or duplicate the Master Plan Commitments and Mitigation Measures that otherwise apply based on the MMRP adopted for the Master Plan. The tab dividers of this document define the location of: (1) the LAX Master Plan MMRP(i.e., the "base" document); (2) a delineation of administrative refinements made to the LAX Master Plan MMRP, based on certain refinements to Master Plan commitments and mitigation measures occurring in conjunction with the Los Angeles City Council certification of the FEIR in December 2004; and (3) additional project-specific mitigation measures identified in conjunction with CEQA environmental review documents completed subsequent to the Master Plan FEIR.

The MMRP Index, which begins on the following page, provides a comprehensive delineation of all Master Plan commitments, Master Plan mitigation measures, and project-specific mitigation measures adopted to date, and indicates where within this document the completed text of each measure can be found, as well as an indication of the origin of each measure (i.e., the LAX Master Plan FEIR, the LAX Master Plan FEIS/ROD, and individual project EIR such as the South Airfield Improvements Project FEIR). **The MMRP Index provides the most current and comprehensive delineation of which Master Plan commitments and mitigation measures are included within the overall MMRP, recognizing that if, other new mitigation measures are added, the MMRP Index will be updated accordingly.**

LAX MASTER PLAN ALTEARNTIVE D
MITIGATION MONITORING & REPORTING PROGRAM
ADDITIONAL MITIGATION MEASURES

Master Plan Commitments/ Mitigation Measures		Potential Impact Being Addressed	Timing of Implementation	Monitoring Frequency	Actions Indication Compliance
Historical/Architectural and Archaeological/Cultural Resources					
MM-HA-11 **Monitoring Agency:**	**Navigational Aids Relocation and Improvements.** Prior to initiation of any grading and/or excavation activities associated with the proposed improvement and relocation of navigational aids, the FAA shall prepare, or cause to be prepared, an archaeological treatment plan (ATP) that ensures the long-term protection and proper treatment of any previously unknown significant archaeological resources, including any Native American remains, encountered during such grading and/or excavation within the Coastal Zone. Pursuant to Title 36, Code of Federal Regulations (CFR) Part 800, the draft ATP shall be submitted by the FAA to the California State Historic Preservation Officer (SHPO), the California Coastal Commission staff archaeologist, the California Native American Heritage Commission and interested parties for 30-days for review and comment. The final ATP, which incorporates the review comments, shall be submitted by FAA to the SHPO, and the California Coastal Commission staff archaeologist for review and approval. The ATP shall include a monitoring plan, research design, and data recovery plan. The ATP shall be consistent with the Secretary of the Interior's Standards and Guidelines for Archaeological Documentation; California Office of Historic Preservation's (OHP) Archaeological Resources Management Report, Recommended Contents and Format (1989), and the Guidelines for Archaeological Research Design (1991); and shall also take into account the ACHP's publication Treatment of Archaeological Properties: A Handbook. The ATP shall also be consistent with the Department of the Interior's Guidelines for Federal Agency Responsibility under Section 110 of the National Historic Preservation Act (NHPA). The ATP shall include a requirement that a qualified archaeologist be retained by the FAA, or its designee, to monitor the subject grading and excavation activities. The qualified archaeologist shall meet the Secretary of the Interior's Professional Qualifications Standards. The project archaeologist shall be empowered to halt construction activities in the immediate area if potentially significant resources are identified. Test excavations may be necessary to reveal whether such findings are significant or insignificant. In the event of notification by the project archaeologist that a potentially	Potential to unexpectedly encounter and impact subsurface archaeological resources, including Native American remains, during grading and excavation associated with relocation of existing navigational aids located within the coastal zone.	Prior to initiation of grading and/or excavation activities associated with the proposed improvement and relocation of navigational aids in coastal zone.	Once.	Completion of an archaeological treatment plan (ATP) specific to subject grading/excavation activities.

Master Plan Commitments/ Mitigation Measures		Potential Impact Being Addressed	Timing of Implementation	Monitoring Frequency	Actions Indication Compliance
	significant or unique archaeological/cultural find has been unearthed, the FAA shall be notified and grading operations shall cease immediately in the affected area until the geographic extent and scientific value of the resource can be reasonably verified. The ATP shall also include a requirement that, should any significant archaeological resource or Native American remains be encountered, a Native American monitor shall be retained following consultation with the Native American Heritage Commission, in order to establish the Most Likely Descendent (MLD) associated with the resource/remains.				
Environmental Justice					
MM-EJ-1 **Monitoring Agency:**	**Expedite Residential Soundproofing for Qualifying Property Owners.** Prior to commencing operations on the new runway (Alternative A) or relocated runway (Alternatives C and D) related to the northern runway complex, LAWA will increase funding and technical assistance in order to complete residential soundproofing related to LAX aircraft noise within the City of Inglewood and Los Angeles County to the extent feasible, and will seek federal funding assistance from the FAA. Soundproofing shall be offered and provided to all property owners who have not previously received soundproofing and who qualify and choose to participate in the ANMP program, including those who are within the current ANMP boundaries, and those who would be newly exposed to the 65 CNEL or greater noise contour due to commissioning of the northern runway complex. Following fulfillment of existing commitments within the current ANMP, those who would be newly exposed shall be identified based on modeled noise contours prepared at the time the northern runway improvements are designed in order to expedite completion of soundproofing to the extent feasible prior to the commissioning of the northern runway complex. Completion of soundproofing to the extent feasible accepts that: 1) LAWA and the FAA shall offer assistance and funding to the City of Inglewood and Los Angeles County but cannot control their efforts; 2) certain properties may not qualify or may not otherwise be feasible to mitigate; and 3) some property owners may choose not to participate in the ANMP.	Following relocation of existing runways in the northern runway complex, there is the potential for residential development to be newly exposed to the 65 CNEL and significantly impacted until noise attenuation improvements are completed at those residences that qualify for soundproofing.	Prior to commencing operations on the new (relocated) runway.	Once	Confirm notification of eligibility for soundproofing to residences that would be newly exposed to 65 CNEL due to runway relocation.

LAX MASTER PLAN ALTEARNTIVE D
MITIGATION MONITORING & REPORTING PROGRAM
REVISED MITIGATION MEASURES

Master Plan Commitments/ Mitigation Measures		Potential Impact Being Addressed	Timing of Implementation	Monitoring Frequency	Actions Indication Compliance
Land Use					
MM-LU-3 **Monitoring Agency:** **LAWA**	**Conduct Study of the Relationship Between Aircraft Noise Levels and the Ability of Children to Learn.** Current studies of aircraft noise and the ability of children to learn have not resulted in the development of a statistically reliable predictive model of the relative effect of changes in aircraft noise levels on learning. Therefore a comprehensive study shall be initiated by LAWA to determine what, if any, measurable relationship may be present between learning and the disruptions caused by aircraft noise at various levels. An element of the evaluation shall be the setting of an acceptable replacement threshold of significance for CEQA purposes for classroom disruption by both specific and sustained aircraft noise events.	Classroom disruption due to exposure to high single event or cumulative noise levels	Initiation of study upon City Council approval of the LAX Plan	Once, upon approval of the study by LAWA	LAWA approval of completed study
MM-LU-4 **Monitoring Agency:** **LAWA**	**Provide Additional Sound Insulation for Schools Shown by MM-LU-3 to be Significantly Impacted by Aircraft Noise.** Prior to completion of the study required by Mitigation Measure MM-LU-3, Conduct Study of the Relationship Between Aircraft Noise Levels and the Ability of Children to Learn, and within six months of the commissioning of any relocated runways associated with implementation of the LAX Master Plan, LAWA shall conduct interior noise measurements at schools that could be newly exposed to noise levels that exceed the interim LAX interior noise thresholds for classroom disruption of 55 dB L max, 65 dB Lmax, or 35 Leq(h), as presented in Section 4.1, *Noise*, of the Final EIR for CEQA purposes. All school classroom buildings (except those within schools subject to an avigation easement) that are found through the noise measurements to exceed the interim interior noise thresholds, as compared to the 1996 baseline conditions presented in the Final EIR, would become eligible for soundproofing under the ANMP. Upon completion of the study required by Mitigation Measure MM-LU-3 and acceptance of its results by peer review of industry experts, any schools found to exceed a newly established CEQA threshold of significance for classroom disruption based on comparison with 1996 baseline conditions due to implementation of the LAX Master Plan, shall be eligible for participation in the ANMP administered by LAWA, unless they are subject to an	Classroom disruption due to exposure to noise levels in excess of threshold of significance established in MM-LU-3	Within six (6) months of commissioning of any relocated runways (for interim LAX interior noise thresholds component); and upon completion of the study in Mitigation Measure MM-LU-3 (for MM-LU-3 component)	Annually	Conduct noise measurements based on interim LAX interior noise thresholds and on newly established noise thresholds set by MM-LU-3, and make schools eligible for ANMP participation, as appropriate

REVISED MITIGATION MEASURES

Master Plan Commitments/ Mitigation Measures		Potential Impact Being Addressed	Timing of Implementation	Monitoring Frequency	Actions Indication Compliance
	existing avigation easement. A determination of which schools become eligible will be made following application of the new threshold based on measured data.				
	Hydrology and Water Quality				
HWQ-1 **Monitoring Agency:** **LAWA**	**Conceptual Drainage Plan.** Once a Master Plan alternative is selected, and in conjunction with its design, LAWA will develop a conceptual drainage plan of the area within the boundaries of the Master Plan alternative (in accordance with FAA guidelines and to the satisfaction of the City of Los Angeles Department of Public Works, Bureau of Engineering). The purpose of the drainage plan will be to assess area-wide drainage flows as related to the Master Plan project area, and at a level of detail sufficient to identify the overall improvements necessary to provide adequate drainage capacity to prevent flooding. The conceptual drainage plan will provide the basis and specifications from which detailed drainage improvement plans will be designed in conjunction with site engineering specific to each Master Plan project. Best Management Practices (BMPs) will be incorporated to minimize the effect of airport operations on surface water quality and to prevent a net increase in pollutant loads to surface water resulting from the selected Master Plan alternative. To evaluate drainage capacity, LAWA will use either the Peak Rate Method specified in Part G - Storm Drain Design of the City of Los Angeles' Bureau of Engineering Manual or the Los Angeles County Modified Rational Method, both of which are acceptable to the LADPW. In areas within the boundary of the selected alternative where the surface water runoff rates are found to exceed the capacity of the storm water conveyance infrastructure with the potential to cause flooding, LAWA will take measures to either reduce peak flow rates or increase the structure's capacity. These drainage facilities will be designed to ensure that they adequately convey storm water runoff and prevent flooding by adhering to the procedures set forth by the Peak Rate Method/Los Angeles County Modified Rational Method.	Significant changes in surface hydrology or adverse impacts to surface water quality due to new development associated with the Master Plan	Prior to issuance of a grading/building permit for the first Master Plan project involving substantial surface alternations or substantial changes to existing operations	Once, upon completion of conceptual drainage plan	Completion of conceptual drainage plan

Master Plan Commitments/ Mitigation Measures		Potential Impact Being Addressed	Timing of Implementation	Monitoring Frequency	Actions Indication Compliance
	Methods to reduce the peak flow of surface water runoff could include: ◆ Decreasing impervious area by removing unnecessary pavement or utilizing porous concrete or modular pavement ◆ Building storm water detention structures ◆ Diverting runoff to pervious areas (reducing directly-connected impervious areas) ◆ Diverting runoff to outfalls with additional capacity (reducing the total drainage area for an individual outfall) ◆ Redirecting storm water flows to increase the time of concentration Measures to increase drainage capacity could include: ◆ Increasing the size and slope (capacity) of storm water conveyance structures (pipes, culverts, channels, etc.). ◆ Increasing the number of storm water conveyance structures and/or outfalls. To evaluate the effect of the selected Master Plan alternative on surface water quality, the Conceptual Drainage Plan will address water quality and drainage issues by specifying source control, structural, and treatment control BMPs with the objective of reducing the discharge of pollutants from the stormwater conveyance system to the maximum extent practicable. Once BMPs are identified, an updated pollutant load estimate will be calculated that takes into account reductions from treatment control BMPs. These BMPs will be applied to both existing and future sources with the goal of achieving no net increase in loadings of pollutants of concern to receiving water bodies. Subsequently, LAWA will prepare Standard Urban Stormwater Mitigation Plans (SUSMP) for individual projects associated with the selected alternative during project design and review based on the Conceptual Drainage Plan, as required by the LARWCQB. The purpose of these SUSMPs will be to evaluate water quality impacts associated with individual project components at a design level of detail, as required by LARWQCB, and to identify specific BMPs that will be				

Master Plan Commitments/ Mitigation Measures		Potential Impact Being Addressed	Timing of Implementation	Monitoring Frequency	Actions Indication Compliance
	incorporated into the project design. LAWA will therefore address water quality issues, including erosion and sedimentation, and comply with the SUSMP requirements by designing the storm water system through incorporation of the structural and treatment control BMPs specified in the SUSMP. The following list includes some of the BMPs that could be employed to infiltrate or treat storm water runoff and dry weather flows, and control peak flow rates. ◆ Vegetated swales and strips ◆ Oil/Water separators ◆ Clarifiers ◆ Media filtration ◆ Catch basin inserts and screens ◆ Continuous flow deflective systems ◆ Bioretention and infiltration ◆ Detention basins ◆ Manufactured treatment units ◆ Hydrodynamic devices Other structural BMPs may also be selected from the literature and the many federal, state and local guidance documents available. Performance of structural BMPs varies considerably based on their design. USEPA has published estimated ranges of pollutant removal efficiencies for structural BMPs based on substantial document review.				
Biotic Communities					
MM-BC-1 **Monitoring Agency:** **LAWA**	**Conservation of State-Designated Sensitive Habitat Within and Adjacent to the El Segundo Blue Butterfly Habitat Restoration Area.** FAA is responsible for conservation measures related to the relocation of navigational aids, while LAWA is responsible for all other conservation measures. All necessary steps shall be taken to ensure that the state-designated sensitive habitats within and adjacent to the Habitat Restoration Area are conserved and protected during construction, operation, and maintenance.	Temporary construction impacts to sensitive areas and degradation of state-designated sensitive habitats	Preconstruction/construction	Once, upon completion of pre-construction evaluation and then on-going during construction if within 100 feet of the Habitat Restoration Area; Annually	Completion of pre-construction evaluation and presence of environmental monitor when construction is within 100 feet of state-designated sensitive

Master Plan Commitments/ Mitigation Measures		Potential Impact Being Addressed	Timing of Implementation	Monitoring Frequency	Actions Indication Compliance
	These steps shall, at a minimum, include the following: *Implementation of construction avoidance measures in areas where construction or staging are adjacent to the Habitat Restoration Area.* Prior to the initiation of construction of LAX Master Plan components to be located adjacent to the Habitat Restoration Area, a pre-construction evaluation shall be conducted to identify and flag specific areas of state-designated sensitive habitats located within 100 feet of construction areas. Subsequent to the pre-construction evaluation, a pre-construction meeting shall be conducted and written construction provided avoidance measures to be implemented in areas adjacent to state-designated sensitive habitats. Construction avoidance measures include erecting a 10-foot-high tarped chain-link fence where the construction or staging area is adjacent to state-designated sensitive habitats to reduce the transport of fugitive dust particles related to construction activities. Soil stabilization, watering or other dust control measures, as feasible and appropriate, shall be implemented to reduce fugitive dust emissions during construction activities within 2,000 feet of the El Segundo Blue Butterfly Habitat Restoration Area, with a goal to reduce fugitive dust emissions by 90 to 95 percent. In addition, to the extent feasible, no grading or stockpiling for construction activities should take place within 100 feet of a state-designated sensitive habitat. LAWA or its designee shall incorporate provisions for the identification of additional construction avoidance measures to be implemented adjacent to state-designated sensitive areas. All construction avoidance measures that address Best Management Practices shall be clearly stated within construction bid documents. In addition, provisions shall be included in all construction bid documents requiring the presence of a qualified environmental monitor. Construction drawings shall indicate vegetated areas within the Habitat Restoration Area as "Off-Limits Zone." *Ongoing maintenance and management efforts for the El Segundo Blue Butterfly Habitat Restoration Area.* LAWA or its designee shall ensure that maintenance and management efforts prescribed in the Habitat Management Plan (HMP) for the Habitat Restoration			during operation and maintenance	habitat; Periodic Monitoring Report

REVISED MITIGATION MEASURES

Master Plan Commitments/ Mitigation Measures		Potential Impact Being Addressed	Timing of Implementation	Monitoring Frequency	Actions Indication Compliance
	Area shall continue to be carried out as prescribed.				
MM-BC-2 **Monitoring Agency:** **LAWA**	**Conservation of Floral Resources: Lewis' Evening Primrose.** FAA is responsible for conservation measures related to the relocation of navigational aids, while LAWA is responsible for all other conservation measures. A plan shall be prepared and implemented to compensate for the loss of individuals of the sensitive Lewis' evening primrose, currently located at the westerly end of the north runway and within the Habitat Restoration Area. Seed shall be collected from those plants to be removed, and properly clean and store the collected seed until used. If possible, seeds shall be collected in multiple years to ensure an adequate seed supply for planting. A mitigation site of suitable habitat equal to the area of impact shall be delineated within areas of the Los Angeles/El Segundo Dunes as described in the "Los Angeles/El Segundo Dunes Habitat Restoration Plan." Collected seed shall be broadcast (distributed) after the first wetting rain. A monitoring plan shall be implemented to monitor the establishment of individuals of Lewis' evening primrose for a period of not more than five years. Performance criteria shall include the establishment of an equal number of plants as that impacted in the first year following the distribution of seed within the mitigation site. Performance criteria shall also include confirmation of recruitment for two years following the first year flowering is observed and establishment of individuals throughout the mitigation area within three years following the first year flowering is observed. Monitoring shall be undertaken in the manner set forth in the "Los Angeles/El Segundo Dunes Habitat Restoration Plan"..	Loss of individuals of Lewis' evening primrose	At least five (5) years prior to initiation of construction of North Runways	As per Conservation Plan for Lewis' Evening Primrose	Preparation of Conservation Plan for Lewis' Evening Primrose; Periodic Monitoring Report
MM-BC-9 **Monitoring Agency:** **LAWA**	**Conservation of Faunal Resources.** FAA is responsible for conservation measures related to the relocation of navigational aids, while LAWA is responsible for all other conservation measures. LAWA or its designee shall develop and implement a relocation and monitoring plan to compensate for the loss of 1.34 habitat units (0.3 habitat units + 1.04 habitat units) of occupied western spadefoot toad habitat and for the loss of western spadefoot toad individuals currently in the southwestern portion of the AOA. LAWA or its designee shall identify possible relocation sites in consultation with the CDFG and USFWS and shall develop and implement a monitoring plan to monitor the success of the relocated	Loss of habitat occupied by sensitive species	Preparation of Conservation Plan for Faunal Resources within three (3) years of City Council approval of the LAX Plan; Implementation per Conservation Plan. Toad relocation and monitoring component of the	As per Conservation Plan for Faunal Resources	Preparation of Conservation Plan for Faunal Resources; Periodic Monitoring Report

Master Plan Commitments/ Mitigation Measures		Potential Impact Being Addressed	Timing of Implementation	Monitoring Frequency	Actions Indication Compliance
	tadpoles for a period of not more than five years. LAWA or its designee shall relocate the western spadefoot toad population currently inhabiting three locations on the AOA. One potential site is the Madrona Marsh Nature Center in Torrance, 20 miles south of LAX, which supports several vernal pools and one large pond capable of supporting western spadefoot toads. Spadefoot toad experts suggest the best approach to accomplish relocation is to transport tadpoles and metamorphs only, as adults return to their birth site. Site preparation shall include confirmation by a permitted biologist that no predators, such as mosquitofish or bullfrogs, are present within the proposed relocation site or in waterways surrounding the relocation site. The CDFG has suggested that if the first relocation effort is not successful, another attempt should be made the following year. Therefore, western spadefoot toads shall be collected two consecutive years prior to construction activities taking place in existing occupied spadefoot toad habitat. In addition, since the western spadefoot toad is known to become reproductively mature within three years, an additional performance criterion shall be the identification of tadpoles at the relocation site between years three and four. The success criteria should be 50 percent survival of all tadpoles and metamorphs for the first, second, and third years following the last relocation. This shall be accomplished through a five-year monitoring plan, with bi-monthly monitoring between January 31 and June 1, to document the success of this relocation effort. LAWA or its designee shall develop and implement a relocation and monitoring plan to compensate for the loss of 2.38 habitat units of occupied San Diego black-tailed jackrabbit habitat located within the AOA. LAWA or its designee shall relocate the San Diego black-tailed jackrabbit population currently inhabiting the AOA. Relocation efforts shall be coordinated with CDFG. The San Diego black-tailed jackrabbit shall be captured on the AOA using live traps and shall be released into the Habitat Restoration Area. Compensation for the loss of 2.38 habitat units shall be the utilization of at least 2.38 habitat units within the Los Angeles/El Segundo Dunes by the San Diego black-tailed jackrabbit individuals relocated to the site. Black-tailed jackrabbit is currently		Conservation Plan to be undertaken in connection with MM-ET-1 (Riverside Fairy Shrimp Habitat Restoration)		

Master Plan Commitments/ Mitigation Measures		Potential Impact Being Addressed	Timing of Implementation	Monitoring Frequency	Actions Indication Compliance
	absent for the Los Angeles/El Segundo Dunes. Opportunities for compensation for the loss of 2.38 habitat units include 13.52 habitat units from restoration of Non-Native Grassland/Ruderal habitat to a Valley Needlegrass Grassland; 14.4 habitat units from removal and restoration of 50 percent of the existing roadways to Southern Foredune; and 59.68 habitat units from restoration of Disturbed Dune Scrub/Foredune to Southern Foredune. LAWA or its designee shall implement a monitoring plan to monitor the success of the relocated individuals for a period of not more than five years. Performance criteria shall include confirmed success of survival for three years of the San Diego black-tailed jackrabbit within the Habitat Restoration Area. This shall be accomplished through a quarterly monitoring plan to document the success or failure of this relocation effort. LAWA or its designee shall compensate for the loss of areas utilized by loggerhead shrike currently located on the western airfield and composed of 10.83 habitat units (equivalent to 83.25 acres). Compensation for the loss of 10.83 habitat units of habitat utilized by the loggerhead shrike shall be the utilization of at least 10.83 habitat units within the Los Angeles/El Segundo Dunes. Opportunities for compensation for the loss of 10.83 habitat units include 13.52 habitat units from restoration of Non-Native Grassland/Ruderal habitat to a Valley Needlegrass Grassland; 14.4 habitat units from removal and restoration of 50 percent of the existing roadways to Southern Foredune; and 59.68 habitat units from restoration of Disturbed Dune Scrub/Foredune to Southern Foredune. Compensation for the loss of at least 10.83 habitat units shall take place prior to construction. LAWA or its designee shall implement a monitoring program for a period of not more than five years. Performance criteria shall include the use of at least 10.83 habitat units of improved habitat by the loggerhead shrike for foraging and nesting. Monitoring shall take place quarterly for the first three years and biannually thereafter. Monitoring shall be timed appropriately to include monitoring during the breeding period, which is between February and June. As a means of minimizing incidental take of active nests of				

Master Plan Commitments/ Mitigation Measures		Potential Impact Being Addressed	Timing of Implementation	Monitoring Frequency	Actions Indication Compliance
	loggerhead shrike, LAWA or its designee shall have all areas to be graded surveyed by a qualified biologist at least 14 days before construction activities begin to ensure maximum avoidance to active nests for loggerhead shrike. Construction avoidance measures shall include flagging of all active nests for loggerhead shrike and a 300 feet wide buffer area shall be designated around the active nests. A biological monitor shall be present to ensure that the buffer area is not infringed upon during the active nesting season, March 15 to August 15. In addition, LAWA or its designee shall require that vegetation clearing within the designated 300 feet buffer be undertaken after August 15 and before March 15. The FAA or LAWA as appropriate, or the respective designee of each, shall conduct pre-construction surveys to determine the presence of individuals of sensitive arthropod species, the silvery legless lizard, the San Diego horned lizard, and the burrowing owl within the proposed area of impact within the Los Angeles/El Segundo Dunes. Surveys will be conducted at the optimum time to observe these species as described in Section 6.1 of the "Los Angeles/El Segundo Dunes Habitat Restoration Plan." Should an individual be observed, they will be relocated to suitable habitat for that species within the Habitat Restoration Area. Prior to construction, the FAA or its designee shall develop and implement a relocation plan to avoid the potential loss of individuals from the installation of navigational aids and associated service roads. This relocation plan is provided in the "Los Angeles/El Segundo Dunes Habitat Restoration Plan". Relocation efforts shall be undertaken by a qualified biologist, in coordination with CDFG.				
MM-BC-13 **Monitoring Agency:** **LAWA**	**Replacement of State-Designated Sensitive Habitats.** FAA is responsible for conservation measures related to the relocation of navigational aids, while LAWA is responsible for all other conservation measures. Mitigation shall be undertaken for the loss of State-designated sensitive habitat within the Los Angeles/El Segundo Dunes, including the Habitat Restoration Area. Installation of navigational aids and associated service roads under	Loss of state designated sensitive habitat	Preparation of Replacement Plan for State-Designated Sensitive Habitats prior to relocation of navigational aids; Implementation per	As per Replacement Plan for State-Designated Sensitive Habitats	Preparation of Replacement Plan for State-Designated Sensitive Habitats; Periodic Monitoring Report

Master Plan Commitments/ Mitigation Measures		Potential Impact Being Addressed	Timing of Implementation	Monitoring Frequency	Actions Indication Compliance
	Alternative D would result in impacts to 66,675 square feet (1.53 acres) of State-designated sensitive habitat within the Los Angeles/El Segundo Dunes, square feet (0.24 acre) are within habitat occupied by the El Segundo blue butterfly. Impacts to 1.53 acres of State-designated sensitive habitat within the Los Angeles/El Segundo Dunes shall be replaced at a ratio of 2:1 within the Los Angeles/El Segundo Dunes as described in the "Los Angeles/El Segundo Dunes Habitat Restoration Plan". Additionally the removal of existing navigational aides no longer required to assist aircraft approaching from the west has the potential to disturb an estimated 1.4 acres of State-designated habitat within the Los Angeles/El Segundo Dunes. These 1.4 acres will be replaced at a ratio of 2:1 as described in the "Los Angeles/El Segundo Dunes Habitat Restoration Plan". The replacement of State-designated sensitive habitat shall be undertaken through restoration of 2.8 acres as described in the "Los Angeles/El Segundo Dunes Habitat Restoration Plan." The restoration and enhancement of biotic communities as related to the establishment or enhancement of wildlike habitat shall consider and comply with the provisions of FAA Advisory Circular 150/5200-33 regarding hazardous wildlife attractants on or near airports. Additionally, such restoration and enhancement shall take into account, as appropriate, the Memorandum of Agreement between the FAA and other federal agencies, including the US Fish and Wildlife Service (USFWS), pertaining to environmental conditions that could contribute to aircraft-wildlife strikes. Valley Needlegrass Grassland restoration efforts consist of site preparation, propagation and planting of Valley Needlegrass Grassland species, and maintenance and monitoring of the restoration site as described in the "Los Angeles/El Segundo Dunes Habitat Restoration Plan." Southern Foredune restoration efforts consist of site preparation, propagation, and planting of the species characteristic of the Southern Foredune community at the Los Angeles/El Segundo Dunes, and maintenance and monitoring of the restoration site as described in the "Los Angeles/El Segundo Dunes Habitat		Replacement Plan		

Master Plan Commitments/ Mitigation Measures		Potential Impact Being Addressed	Timing of Implementation	Monitoring Frequency	Actions Indication Compliance
	Restoration Plan." Replacement of the 10,597 square feet (0.24 acre) of habitat occupies by the El Segundo Blue Butterfly shall be undertaken as described in Mitigation Measure MM-ET-4, El Segundo Blue Butterfly Conservation: Habitat Restoration.				
MM-ET-4 **Monitoring Agency:** **LAWA**	**El Segundo Blue Butterfly Conservation: Habitat Restoration.** FAA is responsible for conservation measures related to the relocation of navigational aids, while LAWA is responsible for all other conservation measures. All necessary steps shall be taken to avoid the flight season of the El Segundo blue butterfly (June 14 - September 30) when undertaking installation of navigational aids and associated service roads proposed under Master Plan Alternative D within habitat occupied by the El Segundo blue butterfly. Installation of navigational aids within the Habitat Restoration Area should be required to take place between October 1st and May 31st. In conformance with the Biological Opinion, activities associated with navigational aids development shall be limited to the existing roads and proposed impacts areas as depicted in the Final EIR. Coast buckwheat shall be planted a minimum of three years prior to the impact, not only to allow for establishment of the plants, but also to ensure that the plants are mature enough to bloom. The plantings of coast buckwheat shall be located within the southwest corner of subsite 23 of the Habitat Restoration Area, as depicted in Figure F5-5, and shall encompass 3 acres as described in the "Los Angeles/El Segundo Dunes Habitat Restoration Plan" (1.25 acres of which is in conformance with the Biological Opinion). Coast buckwheat plants will be planted at an initial density of 200 plants per acre to ensure the long term planting density target (130 plants per acre). Coast buckwheat plants will be placed in clusters or groupings based on microtopographic features present within subsite 23 to better support the El Segundo Blue Butterfly, which is known to prefer large clusters of plants for nectaring and shelter. As possible, depending on the location and condition of individual plants, FAA and LAWA shall salvage existing coast buckwheat plants and any larvae on the plant or pupae in the soil below the plant that would be removed to accommodate the replacement navigational aids to further conserve this species. These plants shall be salvaged immediately prior to the	Loss of habitat occupied by endangered El Segundo blue butterfly	Preparation of Habitat Restoration Plan for El Segundo Blue Butterfly 3 years prior to construction activities within its habitat, or as approved by USFWS; Monitoring for a period of not more than 5 years	As per Habitat Restoration Plan for the El Segundo Blue Butterfly	Preparation of Habitat Restoration Plan for El Segundo Blue Butterfly; Periodic Monitoring Report

Master Plan Commitments/ Mitigation Measures		Potential Impact Being Addressed	Timing of Implementation	Monitoring Frequency	Actions Indication Compliance
	installation of the replacement navigational aids outside of the butterfly flight season. These salvaged plants shall be transported in a suitable container and replanted after the onset of winter rains in subsite 23 near the restored area as described in MM-BC-13, Replacement of State-Designated Sensitive Habitats. This area shall be the designated mitigation site for planting coast buckwheat and the site to which El Segundo blue butterfly pupae shall be relocated. Gathering of coast buckwheat seed shall take place from September 15 through June 1. Propagation and planting methodologies successfully employed by LAWA during 1984 through 1994 restoration efforts shall be employed for propagation of additional coast buckwheat plants. An existing irrigation system proximal to subsite 23 will be used to increase the success of the restoration effort. Prior to navigational aid installation, a permitted and qualified biologist shall salvage El Segundo blue butterfly larvae in coordination with the USFWS in order to minimize impacts to the butterfly. Based on LAWA's restoration experience within the Habitat Restoration Area, occupation of restored habitat can occur within two to three years of restoration efforts. Therefore, there would be no net loss in acres or value of occupied habitat. Additionally, after the navigational aid system is in place and during the first subsequent flight season of the El Segundo blue butterfly, LAWA shall document El Segundo blue butterfly behavior with respect to the lighting system and submit a monitoring report to USFWS. Lastly, LAWA shall coordinate with the USFWS to create educational materials on the El Segundo blue butterfly for integration into LAWA's public outreach program.				

LAX MASTER PLAN ALTERNATIVE D
MITIGATION MONITORING & REPORTING PROGRAM

Master Plan Commitments/ Mitigation Measures		Potential Impact Being Addressed	Timing of Implementation	Monitoring Frequency	Actions Indicating Compliance	
Surface Transportation (Off-Airport)						
MM-ST-6 Monitoring Agency: LAWA	**Add New Traffic Lanes.** Traffic lanes shall be added to select intersections to the satisfaction of LADOT or other appropriate jurisdiction, sufficient to increase the capacity of the intersection without unnecessarily reducing sidewalk widths, removing on-street parking, or encroaching onto other land uses. By 2008: Arbor Vitae Street & La Cienega Boulevard, Aviation Boulevard & Century Boulevard, Aviation Boulevard & 111th Street, Aviation Boulevard & Imperial Highway, Centinela Avenue & Sepulveda Boulevard, Continental City Drive , I-105 ramps & Imperial Highway, La Cienega Boulevard & 111th Street, Lincoln Boulevard & 83rd Street, Centinela Avenue & La Cienega Boulevard, Century Boulevard & Hawthorne Boulevard/La Brea Avenue, I-405 northbound off-ramp & Imperial Highway. By 2015: Imperial Highway & Main Street, Imperial Highway & Pershing Drive, Lincoln Boulevard & Manchester Boulevard, Sepulveda Boulevard & 79th St/80th St.	Traffic congestion and delays as they relate to the LAX Master Plan program activities	By 2008 or 2015, or prior to certificate of occupancy for associated project component, as specified in the Transportation Improvements Phasing Plan	Once, at issuance of certificate of occupancy of related project	Acceptance of construction by LADOT and LADPW, or affected jurisdiction	
MM-ST-7 Monitoring Agency: LAWA	**Restripe Existing Facilities.** Existing traffic lanes shall be restriped to the satisfaction of LADOT or other appropriate jurisdiction, so that additional lane capacity will be provided without adding any new pavement to the intersection or road segment. By 2008: Airport Boulevard & Arbor Vitae Street, Aviation Boulevard & El Segundo Boulevard, Aviation Boulevard & Imperial Highway, Centinela Avenue and La Cienega Boulevard, Century Boulevard & Sepulveda Boulevard, Florence Avenue & La Cienega Boulevard, La Cienega Boulevard & Manchester Avenue, La Tijera Boulevard & Sepulveda Boulevard, Manchester Avenue & Sepulveda Boulevard, Hawthorne Boulevard & Imperial Highway. By 2015: Aviation Boulevard & Manchester Boulevard, Century Boulevard & La Cienega Boulevard, Grand Avenue & Vista del Mar, La Tijera Boulevard & Manchester Avenue, Arbor Vitae Street & Inglewood Avenue.	Traffic congestion and delays as they relate to the LAX Master Plan program activities	By 2008 or 2015, or prior to certificate of occupancy for associated project component, as specified in the Transportation Improvements Phasing Plan	Once, at issuance of certificate of occupancy of related project	Approval of restriping by LADOT or affected jurisdiction	

LAX MASTER PLAN ALTERNATIVE D
MITIGATION MONITORING & REPORTING PROGRAM

Master Plan Commitments/ Mitigation Measures		Potential Impact Being Addressed	Timing of Implementation	Monitoring Frequency	Actions Indicating Compliance	
Surface Transportation (Off-Airport)						
MM-ST-8 Monitoring Agency: LAWA	**Add ATSAC, ATCS or Equivalent.** Automated Traffic Surveillance and Control (ATSAC) or Adaptive Traffic Control System (ATCS) capability or equivalent shall be added to select intersections to the satisfaction of LADOT or other appropriate jurisdiction. The improved capability will result in a more effective traffic signal network. By 2008: Aviation Boulevard & El Segundo Boulevard, Aviation Boulevard and Rosecrans Boulevard, El Segundo Boulevard & Sepulveda Boulevard, Florence Avenue and La Cienega Boulevard, Mariposa Avenue & Sepulveda Boulevard, Rosecrans Avenue & Sepulveda Boulevard, Hawthorne Boulevard & Imperial Highway, Century Boulevard & Inglewood Avenue, Imperial Highway & Inglewood Avenue, . By 2015: Arbor Vitae Street & La Brea Avenue, Aviation Boulevard & Manchester Avenue, El Segundo Boulevard & La Cienega Boulevard, Sepulveda Boulevard and 83rd Street, Centinela Avenue E/O La Brea Avenue (link), Imperial Highway W/O Hawthorne Boulevard (link), El Segundo Boulevard W/O Hawthorne Boulevard (link), Sepulveda Boulevard N/O Rosecrans Boulevard (link).	Traffic congestion and delays as they relate to the LAX Master Plan program activities	By 2008 or 2015, or prior to certificate of occupancy for associated project component, as specified in the Transportation Improvements Phasing Plan	Once, at issuance of certificate of occupancy of related project	Approval of signal upgrade from LADOT and LADPW, or appropriate jurisdiction	
MM-ST-10 Monitoring Agency: LAWA	**Modify Signal Phasing.** The traffic signal phasing of select intersections shall be modified to the satisfaction of LADOT or other appropriate jurisdiction, to allow more efficient use of the intersections, particularly those that will experience a notable change in traffic characteristics as a result of the project. By 2008: Douglas Street & Imperial Highway, El Segundo Boulevard & Sepulveda Boulevard, Florence Avenue & La Cienega Boulevard, Imperial Highway & Sepulveda Boulevard, La Cienega Boulevard & Manchester Avenue, Lincoln Boulevard & 83rd Street, Manchester Avenue & Sepulveda Boulevard. By 2015: Highland Avenue/Vista del Mar & Rosecrans	Traffic congestion and delays as they relate to the LAX Master Plan program activities	By 2008 or 2015, or prior to certificate of occupancy for associated project component, as specified in the Transportation Improvements Phasing Plan	Once, at issuance of certificate of occupancy of related project	Approval of signal improvement from LADOT or appropriate jurisdiction	

Master Plan Commitments/ Mitigation Measures		Potential Impact Being Addressed	Timing of Implementation	Monitoring Frequency	Actions Indicating Compliance	
Surface Transportation (Off-Airport)						
	Boulevard, Imperial Highway & Vista del Mar.					
MM-ST-15 Monitoring Agency: LAWA MM-ST-15 (continued)	**Provide Fair-Share Contributions to Transit Improvements.** Provide fair-share contributions to benefit transit to and from LAX to the satisfaction of LADOT and/or other appropriate jurisdiction or agency. By 2008: Aviation Boulevard and Imperial Highway, Jefferson Boulevard & Lincoln Boulevard, La Tijera Boulevard & Sepulveda Boulevard, Lincoln Boulevard & Teale Street, I-105 W/B off-ramp at Sepulveda Boulevard, Overland Avenue S/O Venice Boulevard (link). By 2015: Howard Hughes Parkway & Sepulveda Boulevard, Lincoln Boulevard & Manchester Avenue, Sepulveda Boulevard & 76th Street/77th Street, Lincoln Boulevard S/O Venice Boulevard (link), Lincoln Boulevard S/O Jefferson Boulevard (link).	Traffic congestion and delays as they relate to the LAX Master Plan program activities	By 2008 or 2015, or prior to certificate of occupancy for associated project component, as specified in the Transportation Improvements Phasing Plan	Once, at issuance of certificate of occupancy of related project	Approval of fair-share contribution by LADOT or appropriate jurisdiction and/or agency	
MM-ST-16 Monitoring Agency: LAWA	**Provide Fair-Share Contribution to LA County's Project to Extend the Marina Expressway.** Provide fair-share contribution to Los Angeles County's project to extend the Marina Expressway (Route 90) to Admiralty Way or complete alternative off-site improvements at the following intersections: By 2015: Bali Way & Lincoln Boulevard, Lincoln Boulevard & Marina Expressway, Lincoln Boulevard & Mindanao Way	Traffic congestion and delays as they relate to the LAX Master Plan program activities	By 2008 or 2015, or prior to certificate of occupancy for associated project component, as specified in the Transportation Improvements Phasing Plan	Once, at issuance of certificate of occupancy of related project	Approval of fair-share contribution or alternative improvement by LADOT and/or Los Angeles County	

SOUTH AIRFIELD IMPROVEMENT PROJECT
MITIGATION MONITORING & REPORTING PROGRAM
FOR NEW MITIGATION MEASURES[1]

	Master Plan Commitments/ Mitigation Measures	Potential Impact Being Addressed	Timing of Implementation	Monitoring Frequency	Actions Indicating Compliance
	Biotic Communities				
MM-BC (SA)-1 **Monitoring Agency:** **LAWA**	**Replacement of Habitat Units Associated with the South Airfield Improvement Project.** LAWA or its designee shall undertake mitigation for the loss of 17.2 habitat units resulting from implementation of the SAIP. These habitat units shall be replaced at a 1:1 ratio within the FAA owned habitat preserve at the former Marine Corps Air Station El Toro (El Toro site), or other appropriate site.	Impacts on Disturbed/Bare Ground and Non-Native Grassland/Ruderal areas	Preparation of Replacement Plan prior to or concurrent with commissioning of relocated Runway 7R-25L	As per Replacement Plan for Habitat Units	Preparation of Replacement Plan for Habitat Units; Periodic Monitoring Report
MM-BC (SA)-2 **Monitoring Agency:** **LAWA**	**Conservation of Faunal Resources Associated with the South Airfield Improvement Project.** Directed surveys for the San Diego black-tailed jackrabbit and the loggerhead shrike shall be undertaken by a qualified wildlife biologist at least 14 days before construction activities. LAWA or its designee shall relocate any observed San Diego black-tailed jackrabbit individuals currently inhabiting the SAIP project areas. Relocation efforts shall be coordinated with CDFG.	Impacts on San Diego black-tailed jackrabbit habitat and loggerhead shrike habitat	Initiated and completed prior to or concurrent with commissioning of relocated Runway 7R-25L	As per Replacement Plan for Habitat Units	Preparation of Replacement Plan for Habitat Units; Periodic Monitoring Report

[1] The South Airfield Improvement Project is subject to many of the LAX Master Plan Commitments and Mitigation Measures adopted in conjunction with the LAX Master Plan Final EIR. See User Guide located at front of the MMRP.

CROSSFIELD TAXIWAY PROJECT
MITIGATION MONITORING & REPORTING PROGRAM
FOR NEW MITIGATION MEASURES[1]

CFTP-Specific Mitigation Measures		Potential Impact Being Addressed	Timing of Implementation	Monitoring Frequency	Actions Indicating Compliance
Historical/Architectural and Archaeological/Cultural Resources					
MM-HA (CFTP)-1 **Monitoring Agency:** **LAWA**	**Conformance with LAX Master Plan Archaeological Treatment Plan**: Prior to initiation of grading and construction activities, LAWA will retain an on-site Cultural Resource Monitor (CRM), as defined in the LAX Master Plan MMRP ATP, who will determine if the proposed project area is subject to archaeological monitoring. As defined in the ATP, areas are not subject to archaeological monitoring if they contain redeposited fill or have previously been disturbed. The CRM will compare the known depth of redeposited fill or disturbance to the depth of planned grading activities, based on a review of construction plans. If the CRM determines that the proposed project site is subject to archaeological monitoring, a qualified archaeologist (an archaeologist who satisfies the Secretary of the Interior's Professional Qualifications Standards [36 CFR 61]) shall be retained by LAWA to inspect excavation and grading activities that occur within native material. The extent and frequency of inspection shall be defined based on consultation with the archaeologist. Following initial inspection of excavation materials, the archaeologist may adjust inspection protocols as work proceeds.	Potential to unexpectedly encounter and impact subsurface archaeological resources, including Native American remains, during grading and excavation associated with construction of the CFTP	Prior to initiation of grading and/or excavation activities associated with the construction of the CFTP	As per the Cultural Resource Monitor determining proposed project area being subject to archaeological monitoring, the extent and frequency of inspection shall be defined based on consultation with the archeologist	Conformance with LAX Master Plan Archaeological Treatment Plan

[1] The Crossfield Taxiway Project is subject to many of the LAX Master Plan Commitments and Mitigation Measures adoption in conjunction with the LAX Master Plan Final EIR. See User Guide at front of MMRP.

CROSSFIELD TAXIWAY PROJECT
MITIGATION MONITORING & REPORTING PROGRAM
FOR NEW MITIGATION MEASURES[1]

CFTP-Specific Mitigation Measures		Potential Impact Being Addressed	Timing of Implementation	Monitoring Frequency	Actions Indicating Compliance
Paleontological Resources					
MM-PA (CFTP)-1 **Monitoring Agency:** **LAWA**	**Conformance with LAX Master Plan Paleontological Management Treatment Plan**: Prior to the initiation of grading and construction activities, LAWA will retain a professional paleontologist, as defined in the Final LAX Master Plan MMRP PMTP, who will determine if the project site exhibits a high or low potential for subsurface resources. If the project site is determined to exhibit a high potential for subsurface resources, paleontological monitoring will be conducted in accordance with the procedures stipulated in the PMTP. If the project site is determined to exhibit a low potential for subsurface deposits, excavation need not be monitored as per the PMTP. In the event that paleontological resources are discovered, the procedures outlined in the PMTP for the identification of resources will be followed.	Potential to unexpectedly encounter and impact subsurface paleontological resources during grading and excavation associated with construction of the CFTP	Prior to initiation of grading and/or excavation activities associated with the construction of the CFTP	As per the professional paleontologist determining proposed project area being subject to paleontological monitoring, the extent and frequency of inspection shall be defined based on procedures outlined in the PMTP	Conformance with LAX Master Plan Paleontological Management Treatment Plan
MM-PA (CFTP)-2 **Monitoring Agency:** **LAWA**	**Construction Personnel Briefing**: In accordance with the PMTP, construction personnel will be briefed by the consulting paleontologist in the identification of fossils or fossilferous deposits and in the correct procedures for notifying the relevant individuals should such a discovery occur.	Potential to unexpectedly encounter and impact subsurface paleontological resources during grading and excavation associated with construction of the CFTP	Prior to initiation of grading and/or excavation activities associated with the construction of the CFTP	Once	Completion of briefing of construction personnel on identification of fossils or fossilferous deposits and notification procedures in accordance with the PMTP

CROSSFIELD TAXIWAY PROJECT
MITIGATION MONITORING & REPORTING PROGRAM
FOR NEW MITIGATION MEASURES[1]

CFTP-Specific Mitigation Measures		Potential Impact Being Addressed	Timing of Implementation	Monitoring Frequency	Actions Indicating Compliance
Biotic Communities					
MM-BC (CFTP)-1 **Monitoring Agency:** **LAWA**	**Conservation of Floral Resources: Southern Tarplant.** LAWA or its designee shall prepare a special status plant mitigation program. The loss of the southern tarplant individuals shall be mitigated through seed collection and seeding into a suitable mitigation site within undeveloped property owned by LAWA, determined based on habitat, soil type, moisture levels, and other relevant conditions. A qualified Seed Collector shall monitor the tarplant phenology to determine the appropriate timing for seed collection. Tarplant seed shall be collected from all tarplants within the impact area, which shall be delineated in the field with lath and flagging by a Qualified Biologist. The Biologist shall ensure that seed shall only be collected from plants that will be impacted by the CFTP. Upon completion of seed collection, the seed collector shall clean the seeds to prepare for the seeding effort. A mitigation plan shall be developed at a level of detail necessary for successful program implementation by a Landscape Contractor. The detailed program shall contain the following items: ◆ *Responsibilities and qualifications of the personnel to implement and supervise the plan.* The plan shall specify the responsibilities and qualifications of the personnel who will supervise and implement the mitigation plan, including LAWA, Technical Specialists, and Maintenance Personnel.	Impacts on the loss of the southern tarplant individuals	Preparation of a special status plant mitigation program prior to relocation/ construction of the existing American Airlines employee parking lot	As per special status plant mitigation program for southern tarplant resources; Regular site visits (i.e. monthly, quarterly) for no more than 5 years or until germination, flowering and seed set of at least 29 individuals (100 percent of the original population size)	Preparation of special status plant mitigation program; Periodic Monitoring Report

CROSSFIELD TAXIWAY PROJECT
MITIGATION MONITORING & REPORTING PROGRAM
FOR NEW MITIGATION MEASURES[1]

CFTP-Specific Mitigation Measures		Potential Impact Being Addressed	Timing of Implementation	Monitoring Frequency	Actions Indicating Compliance
	◆ *Site selection.* The site for the mitigation shall be determined in coordination with LAWA, and shall be located in a suitable area within the boundaries of LAX. The appropriate site shall consist of approximately 0.14 acre and shall have suitable hydrology, soils, and other factors necessary for the establishment of the southern tarplant. Such suitable sites exist within the boundaries of LAX, including but not limited to areas within LAX Northside and in the southwestern portion of the airport, west of the south airfield complex. ◆ *Site preparation and planting implementation.* The plan shall include specifications for seed collection and storage and guidelines for on-site preparation. The guidelines shall contain specifications for (1) existing native species protection; (2) trash and weed removal; (3) soil treatments (e.g., imprinting and decompacting); (4) temporary irrigation installation as needed; (5) erosion control measures (e.g., rice or willow wattles); and (6) seed application. ◆ *Schedule.* A schedule shall be developed, which includes planting, to occur in late fall and early winter (between October and January 30). ◆ *Maintenance plan/guidelines.* A three to five year maintenance plan shall include (1) weed control; (2) herbivory control; (3) trash removal; (4) irrigation system maintenance; (5) maintenance training; and (6) replacement seeding, if necessary. Ten percent of the original seed collected shall be stored in the event it is needed for replacement seeding.				

CROSSFIELD TAXIWAY PROJECT
MITIGATION MONITORING & REPORTING PROGRAM
FOR NEW MITIGATION MEASURES[1]

	CFTP-Specific Mitigation Measures	Potential Impact Being Addressed	Timing of Implementation	Monitoring Frequency	Actions Indicating Compliance
	◆ *Monitoring plan.* The monitoring plan shall include the following success criteria: - Germination, flowering and seed set of at least 17 individuals (60 percent of the original population size) in year one; - Germination, flowering and seed set of at least 23 individuals (80 percent of the original population size) by year three; - Germination, flowering and seed set of at least 29 individuals (100 percent of the original population size) by year five. If these success criteria are not met, or are unlikely to be met within the required time periods, remedial measures will be required. This plan may include qualitative and quantitative monitoring. Qualitative monitoring includes site visits at regular intervals (i.e., monthly, quarterly, etc.) to determine the overall general performance of the site and maintenance needs. Quantitative monitoring is conducted on an annual basis and includes data collection specific to the performance standards established in the monitoring plan. *Long-term preservation.* Long-term preservation of the site shall also be outlined in the conceptual mitigation plan to ensure that future development does not impact the mitigation site.				

APPENDIX C

STATUS AND IMPLEMENTATION OF PROGRAM PLANS DATED DECEMBER 2009

LAX Master Plan Mitigation Measures and Reporting Program (MMRP)
Program Plan Status Update
December 2009

No.	Program Plan Title	Program Plan Description	Master Plan Commitments/Mitigation Measures Addressed	Status (as of December 2009)
1	Aircraft Noise Abatement Program (ANAP) (existing)	The ANAP sets forth LAWA's noise abatement traffic, flight and runway use procedures and includes ground operations restrictions and other airport noise abatement procedures, restrictions and regulations involving aircraft operations.	MM-N-4: Update the Aircraft Noise Abatement Program elements as applicable to adapt to the future airfield configuration	On-going: Existing LAWA Operations managed by LAWA Noise Management Division provides ongoing updates to ANAP, which will include updates based on modifications to the LAX airfield configuration, as appropriate.
2	Aircraft Noise Mitigation Program (ANMP) (existing)	The ANMP describes the ongoing efforts by LAWA to convert existing incompatible land uses surrounding each of its three noise impacted airports to compatible land uses through the implementation of two noise mitigation strategies: (1) sound insulation of structures; and the acquisition of property followed by the conversion of its incompatible land use to compatible land use (land recycling).	MM-LU-1 : Implement revised ANMP MM-LU-2 : Incorporate residential dwelling units exposed to single event awakenings into ANMP MM-LU-5 : Upgrade and Expand Noise Monitoring Program	On-going: Existing program is in place with periodic report updates to the County of Los Angeles.
3	**Master Plan for Air Quality (MPAQ)**	The MPAQ identifies the air quality mitigation requirements for the LAX Master Plan. Briefly stated, the objectives of the MPAQ are to maintain or reduce air emissions associated with the construction and operation of the LAX Master Plan to levels equal to (or less than) the thresholds of significance and, at a minimum, keep these emissions below the levels forecasted in the LAX Master Plan EIR.	MM-AQ-1 : LAX Master Plan – Air Quality Mitigation Plan for Air Quality MM-AQ-2 : Construction-Related Mitigation Measures MM-AQ-3 : Transportation-Related Mitigation Measures MM-AQ-4 : Operations-Related Mitigation Measures	In Progress: Master Plan for Air Quality (MPAQ) consists of 4 main parts: MM-AQ-1: Completed in October 2005 and adopted by City Council on January 11, 2006 MM-AQ-2: Completed in October 2005 and adopted by City Council on January 11, 2006 MM-AQ-3: Ongoing. MM-AQ-4: Ongoing. LAWA completed the GSE Inventory and is in the process of developing a GSE conversion policy for implementation LAWA-wide. The overall framework for MM-AQ-4 plan continues to be developed.
4	**Ground Transportation Outreach Program (GTOP)**	The GTOP establishes appropriate mechanisms to involve and coordinate with other major airport-area development projects to the extent feasible, to ensure that the cumulative impacts of construction traffic in the airport area are coordinated and minimized.	MM-ST-14: Ground Transportation/Construction Coordination Office Outreach Program C-1: Establishment of a GT/CCO	Completed: Final Ground Transportation Outreach Program issued in May 2006.
5	**Construction Transportation Management Plan (CTMP)**	The CTMP provides additional information regarding the measures from the LAX Master Plan MMRP related to the management of construction traffic during the implementation of the Master Plan. Surface transportation mitigation measures which are unrelated to the movement of construction traffic are not included in this plan.	ST-9: Construction Deliveries ST-12: Designated truck delivery hours ST-14: Construction employee shift hours ST-16: Designated haul routes ST-17: Maintenance of haul routes ST-18: Construction Traffic Management Plan ST-19: Closure restrictions of existing roadways ST-20: Stockpile locations ST-21: Construction employee parking locations ST-22: Designated truck routes	Completed: Final Plan dated May 2005.
6	**Archaeological Treatment Plan (ATP)**	The ATP focuses on the long-term protection and proper treatment of unexpected archaeological discoveries of federal, state, and/or local significance that might be encountered during construction activities of the LAX Master Plan projects. The purpose of the ATP is to achieve compliance with Section 106 of the National Historic Preservation Act (NHPA), the CEQA, and the environmental guidelines of local agencies.	MM-HA-1 : Historic American Buildings Survey (HABS) MM-HA-2 : Historic educational materials MM-HA-4 : Archaeological discovery MM-HA-5 : Archaeological monitoring MM-HA-6 : Excavation and recovery MM-HA-7 : Administration MM-HA-8 : Archaeological/Cultural Monitoring Report MM-HA-9 : Artifact curation MM-HA-10 : Archaeological notification	Completed: Final Plan approved by the FAA and other outside agencies in early 2006.

7	**Paleontological Management Treatment Plan (PMTP)**	The PMTP focuses on the identification, recovery, proper treatment, and long-term protection and archival conservation of expected and unexpected paleontological discoveries of federal, state, and/or local significance that might be encountered during construction activities of the LAX Master Plan projects.	MM-PA-1: Paleontological Qualification and Treatment Plan MM-PA-2 : Paleontological authorization MM-PA-3 : Paleontological monitoring specification MM-PA-4 : Paleontological resources collection MM-PA-5 : Fossil preparation MM-PA-6 : Fossil donation MM-PA-7 : Paleontological reporting	Completed: Final Draft issued December 2005 by EMD. LAWA sent the PMTP to the Vertebrate Section of the County of LA Museum on January 11, 2006.
8	**Conceptual Drainage Plan (CDP)**	The CDP provides an overview of drainage and water quality conditions, capacities, constraints, regulatory framework, and analysis methodologies and identifies options for addressing the LAX Master Plan Alternative D impacts. The CDP provides the basis by which detailed drainage improvement plans shall be designed in conjunction with site engineering specific to each LAX Master Plan improvement project.	HWQ-1: Develop detailed drainage plan	Completed: Draft CDP issued in June 2005 and finalized in December 2005. Consistency Certification received from the Coastal Commission in December 2005.
9	**Procedures for Handling of Contaminated Materials during Construction**	This procedure focuses on pre-existing previously unknown contaminated materials that may be encountered or is first released, spilled, or generated during construction at any phase or project of the LAX Master Plan implementation.	HM-2: Handling of contaminated materials encountered during construction	Completed: Final document issued in December 2005.
10	**Utilities Relocation Program (URP)**	The URP provides a framework to address potential impacts on the existing utilities and to minimize interference with the existing utilities associated with the LAX Master Plan construction.	PU-1: Develop a Utilities Relocation Plan E-2: coordination with utility providers DA-3: undergrounding of utility lines	Completed: Final Report completed in May 2005.
11	**Street Frontage & Landscape Development Plan (SFLDP) (Existing)**	The SFLDP provides integrated and coordinated landscape design guidelines for new development along the perimeter areas of LAX. It is not intended as a commitment by LAWA to affect and/or change existing conditions.	LU-4 : Neighborhood Compatibility Program LU-5 : Comply with City of LA Transportation Element Bicycle Plan DA-1 : Provide and Maintain Airport Buffer Areas DA-2 : Update and Integrate Design Plans and Guidelines W-1 : Maximize Use of Reclaimed Water W-2 : Enhance Existing Water Conservation Program	Completed: Final SFLDP completed on 03/02/05. After further evaluation of the CFTP project conditions, commitments DA-1and W-2 are not applicable to the CFTP.
12	Water Conservation Program (WCP)	Not yet completed.	W-2: Enhance Existing Water Conservation Program	In Progress: Currently, 35% of all landscaped areas at LAX are irrigated by reclaimed water. The landscaped areas served are limited to those areas accessible to the reclaimed water supply pipeline. Approximately 40.2 million gallons or 123 acre-feet of water is conserved each year through the use of reclaimed water. Additionally, much of the irrigation system at LAX is monitored and controlled though a centralized computer irrigation control center. This system further conserves valuable water resources. Buildings and terminals at LAX feature low-flow devices on all toilets and sinks, with phone numbers prominently posted in all restrooms so people can notify maintenance staff if they encounter leaky faucets or other water problems. In addition, water used in on-airport car wash facilities is recycled. LAWA is also working with DWP to determine the feasibility of bringing reclaimed water into the Central Terminal Area for use in the Central Utilities Plant cooling tower. The DWP estimates that this will reduce LAX's water usage by approximately 90 acre/ft per year.
13	Landscape Maintenance Program (LMP)	Not yet completed.	LU-2: Establishment of an LMP for parcels acquired due to airport expansion DA-1: Provide and maintain airport buffer areas	In Progress: LAWA currently integrating existing plans or existing procedures under the Residential Acquisition Division (RAD) that will form the basis of the LMP.

14	Residential & Business Relocation Plan (Draft Relocation Plan) (DRP)	The DRP provides procedures for implementing LAWA's LAX MP Relocation Assistance Program (RAP) in accordance with applicable laws, regulations, and policies. The Uniform Act and Title 49 CFR Part 24 serve as the basis for the policies and procedures established in this plan.	RBR-1: Residential and Business Relocation Program MM-RBR-1: Planning for business relocation MM-RBR-2: Relocation opportunities through ANMP	In Progress: Draft Relocation Plan approved by the BOAC in Dec 2004. Final Relocation Plan is currently being developed.
15	**Fire & Police Facility Program (FPFP)**	Not yet developed.	PS-1: Fire and Police Facility Relocation Plan PS-2: Fire and Police Facility space and siting requirements	In Progress.
16	Solid Waste Recycling Plan (SWRP):	Not yet developed.	SW-1: Implement an Enhanced Recycling Program	In Progress. A Recycling Plan for LAX is currently being developed.

APPENDIX D

LOS ANGELES WORLD AIRPORTS SUSTAINABLE AIRPORT PLANNING, DESIGN AND CONSTRUCTION GUIDELINES (LSAG)

DATED FEBRUARY 2010

Los Angeles World Airports
Global Leader in Airport Sustainability

Sustainable Airport Planning, Design and Construction Guidelines

for Implementation on All Airport Projects

Version 5.0 • February 2010

SUSTAINABLE AIRPORT GUIDELINES

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Los Angeles World Airports
Global Leader in Airport Sustainability

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PART 1: OVERVIEW

Los Angeles World Airports
Global Leader in Airport Sustainability

1.1 Intent

With the development of the Sustainable Airport Planning, Design and Construction Guidelines (LSAG), Los Angeles World Airports (LAWA) intends to meet its commitment to become the global leader in airport sustainability through building green infrastructure and being held to the highest sustainability standards.

1.2 Benefits

LSAG provides structure to LAWA's sustainability commitment related to planning, design and construction on airport property through communicating expectations and implementing a transparent process outlined in this document. LSAG also creates an outlet for communicating airport development to LAWA's stakeholders and empowers the design and construction community to engage in LAWA's commitment to sustainability.

1.3 Impetus for LSAG

LAWA is held accountable to specific high sustainability standards. These standards include:

- City of Los Angeles Mayor's Executive Directive No. 10 on Sustainable Practices;
- City Council's motion to have Los Angeles International Airport (LAX) "built and held to the highest green standards"; and
- Board of Airport Commissioners' (BOAC's) goal to make LAX the greenest airport in the world.

LAWA decided to develop LSAG to formalize its commitment to building sustainably. The development of LSAG was a collaborative effort among LAWA staff, City Departments and various stakeholders. Together, the development effort ensures that the sustainability objectives and practices included in LSAG are appropriate and applicable to the nature and scale of activities during planning, design and construction activities at each airport.

1.4 LAWA Sustainability Vision and Principles

As an integral part of making LAWA the greenest airport in the world, LAWA developed the BOAC-approved Sustainability Vision and Principles statement. LAWA continues to communicate its commitment to sustainability to its employees, customers, tenants, suppliers, peers and the communities in which it operates. This formal statement aligns with LAWA's overall business strategy as well as the operations and activities throughout the airports. As part of this Sustainability Vision and Principles statement,

LSAG Provides . . .

…a comprehensive set of performance standards applicable to airports that can be utilized to integrate sustainable practices into airport planning, design and construction projects; and

… a rating system that can be used to consistently measure the progress of improved sustainability performance for projects executed at airports nationwide.

Outcomes of the Guidelines

- Reduction of Waste
- Reduction of a Project's Carbon and Water Footprints
- Conservation of Natural Resources
- Pollution Prevention
- Resource Efficiency
- Creation of Public Benefits
- Successful Community Outreach
- Cost Savings
- Strengthening of Local & Regional Economies
- Advancement of Emerging Markets
- Integrated Solutions
- Consistent Measurement of Sustainability Performance and Continued Improvement of the Planning, Design and Construction Processes
- Communication of Successes

LAWA has identified "incorporating sustainable design and construction practices" as one key sustainability principle. The complete Sustainability Vision and Principles statement is included on the following page.

1.5 Purpose of LSAG

LSAG demonstrates LAWA's commitment to sustainability. It gives structure to LAWA's commitment by communicating expectations and providing a tool for tracking and reporting its sustainability measures related to planning, design and construction of LAWA's property. Moreover, LSAG facilitates LAWA staff, executive management, designers, architects, and contractors to consider sustainable project elements at a project's earliest stage to capitalize cost savings and sustainability benefits to achieve a more sustainable Los Angeles.

1.6 Defining Sustainability

Defining what sustainability means to LAWA was a critical first step toward further implementing sustainability as a key measure in the overall success of a LAWA project. In 1983, the Brundtland Commission defined sustainable development as "development that meets the needs of the present without compromising the ability of future generations to meet their own needs." The Brundtland Commission, also known as the World Commission on Environment and Development was convened by the United Nations (UN) in 1983. The UN created the commission to address a growing concern "about the accelerating deterioration of the human environment and natural resources and the consequences of that deterioration for economic and social development.[1]" In establishing the commission, the UN General Assembly recognized that environmental problems were global in nature and determined that it was in the common interest of nations to establish policies for sustainable development. The earth has a finite amount of resources and, with the exponential growth in the world's population, there is a need for global management of these resources to ensure that future generations have what they need.

LAWA employs the "Triple Bottom Line" approach to find integrated solutions and improve sustainability performance.

Since the Brundtland Commission, the definition of sustainability has been refined with the growing understanding of the subject. LAWA considered the following definition to initially guide its sustainability program.

■ The Triple Bottom Line

In 1994, John Elkington coined the phrase "The Triple Bottom Line" (TBL) to describe a foundational approach to sustainability. The TBL has since become a widely accepted framework for sustainability

1 Our Common Future (1987), Oxford: Oxford University Press.

Los Angeles World Airports
Global Leader in
Airport Sustainability

Los Angeles World Airports
Sustainability Vision and Principles

Our Sustainability Vision As the international gateway in our region, Los Angeles World Airports is committed to setting the global airport standard for customer satisfaction and security, regional economic leadership and organizational performance. Building on our core values, we will engage our employees, tenants, customers, and communities in an effort to continually improve our environmental, economic and social performance.

Our Sustainability Principles We will foster stewardship and continual performance improvement at all levels within LAWA's organization by complying with applicable legal requirements, integrating sustainable practices into our operations and administrative processes, communicating our endeavors, and following these principles:

Becoming an innovative and national model in implementing environmental solutions.

Taking responsibility for improving our overall operational sustainability.

Increasing our business value through improved sustainable performance.

Engaging our stakeholders to better understand and address their concerns.

Incorporating sustainable design and construction practices in the development of our airport system.

Monitoring and measuring our progress through our sustainability performance improvement management system.

around the world. It says that success is measured not only by financial performance (the traditional bottom line), but by balanced achievements in environmental stewardship, economic growth and social responsibility. The TBL is achieved when an integrated solution is found that simultaneously achieves excellence in these components, as opposed to finding tradeoffs among these areas.

As sustainability programs have become more sophisticated at airports and other organizations, LAWA has adopted the following definition to further guide its sustainability program:

- **Economic Viability, Operational Efficiency, Natural Resources and Socioeconomic Responsibility (EONS)**

  The Transportation Research Board (TRB) and Airports Council International-North America (ACI-NA) developed an additional definition of sustainability that is based on the Triple Bottom Line but is broader to address the operational aspects of managing an airport and focus on the financial viability of the airport. Including operations is important because, while not all airports can or need to build new facilities, they have opportunities within their business model to leverage the operation and maintenance and life cycle costs in ways that promote sustainability. The addition of operations ensures the integrity of the economic viability, operational efficiency, natural resource conservation and social responsibility (EONS) of the airport. LAWA applies the TBL and EONS approach to understand and leverage the synergies that exist to improve sustainability performance.

Improvement of overall sustainability performance is a top priority for LAWA. The development and implementation of LSAG is one of the initiatives within LAWA's overall Sustainability Performance Improvement Management System (SPIMS), a framework for achieving continual improvement in sustainability performance by engaging stakeholders, prioritizing opportunities, integrating sustainability considerations into operations, and communicating progress. Through the use of SPIMS and, now LSAG, LAWA seeks to incorporate its sustainability performance goals into its planning, design and construction activities.

LAWA recognizes the important difference between a "green" project versus a "sustainable" project. A "green" project focuses solely on the Environmental Stewardship component of the TBL, such as reducing waste, minimizing carbon and water footprints, preventing pollution and conserving natural resources. A "sustainable" project moves beyond the green component and integrates Economic Viability (e.g. use of local contractors and supplies or creating and strengthening local markets such as alternative fuels, solar and wind power technologies), Social Responsibility (e.g. implementing fair labor practices or educating surrounding

communities) and Operational Efficiency (e.g. long-term maintenance of equipment and structures).

LAWA encourages Project Delivery Teams to incorporate whole-life cost analysis and life-cycle analysis (LCA) in the design and construction of a project. A whole life cost analysis examines the total cost of ownership over the life of an asset. This analysis fits in with LAWA's sustainability goals since the analysis includes construction, operations, maintenance and other costs. The goal of an LCA also fits perfectly with LAWA's goals since an LCA compares the full range of environmental and social damages assignable to a product or project so that the Project Delivery Team can make an informed choice on the selection of a design element, a piece of equipment or construction practice.

*The sustainability concepts included in the LEED® rating systems can also be applied to non-building projects and are thus included in LSAG. LSAG is intended to go **beyond LEED®** and provide a set of performance standards and a rating system for both building and non-building airport projects.*

1.7 Development of LSAG

LSAG goes ***beyond LEED®*** and provides a set of performance standards and a rating system for both horizontal and vertical airport projects. LSAG is a compilation of sustainable planning, design and construction practices that meet the unique circumstances and needs of an airport.

LSAG builds upon the United States Green Building Council's (USGBC's) Leadership in Energy and Environmental Design (LEED®) rating systems for buildings, which were created to guide the development of high performance, healthy, durable, affordable and environmentally sound buildings. The LEED® rating systems also are used to certify the design, construction and renovation of a building as "green". While airports can achieve LEED® certification for their buildings, these types of projects typically comprise a small percentage of design and construction activities that take place on airport properties. Some of the sustainability concepts included in the LEED® rating systems can also be applied to non-building projects (i.e. runways and other horizontal projects) and are thus included in these Guidelines.

Because of the overlap between LSAG and the USGBC's LEED® rating systems for buildings, building projects are recommended to achieve LEED® certification. All building projects on LAWA property are encouraged to achieve LEED® Silver certification. Indeed, some building projects may be required to achieve LEED or another green certifications based on existing building codes. Although projects that achieve LEED® certification do not need to adhere to the Sustainable PD performance standards, these projects are recommended to adhere to Sustainable CN performance standards and achieve a LAWA Sustainable Construction Level.

Separate LAWA Sustainable Levels for PD and CN will be awarded upon completion of the project. Application of the Rating System, and the number of points required for each level of certification, is based on the size and type (category) of the project and whether it includes the construction of a new building or the reconstruction or interior renovation of an existing building.

LSAG is intended to provide a foundation for sustainable practices, enhance awareness, drive innovation and create flexibility for users to develop pioneering solutions through the inclusion of sustainable practices into every phase of its projects.

1.8 Components of LSAG

The following six components are intended to be used together for projects to guide Project Delivery Teams in the successful implementation of LSAG:

1. *Implementation Section*
2. *Structure of PSAG*
3. *Sustainable Planning and Design (PD) and Sustainable Construction (CN) Performance Standards*
4. *Sustainable PD and CN Checklists*
5. *Certification Statement*
6. *Definitions*
7. *References*

1.9 Regulatory Requirements

The planning, design and construction of buildings and infrastructure at airports are subject to local, state and federal regulations. LSAG is meant to supplement LAWA's existing regulatory and code requirements (such as federal, state or local regulatory agencies). LSAG does ***not*** supersede existing standards, regulations, or codes currently in place or adopted by the State of California, City of Los Angeles, other cities or LAWA and its tenants.

1.10 Using LSAG during Planning, Design and Construction

The Project Delivery Team and other interested stakeholders should consider the contents of LSAG in the earliest project stage, including the development of the project description and scope. Oftentimes, the Airport Master Planning level is the earliest stage of many projects; therefore, LSAG should be consulted at the onset of an Airport Master Plan Update and integrated throughout the entire master planning process. A fundamental belief underlying LSAG is that an integrated design process will enable LAWA to achieve thoughtful, sustainable planning, design and construction efforts with limited impact to a traditional schedule or budget.

1.11 Summary

LAWA intends to meet its commitment to become the global leader in airport sustainability through building and being held to the highest green standards. To assist in meeting this intent, LSAG has been developed. LSAG includes performance standards that will assist project teams in selecting, executing and measuring sustainability concepts that are incorporated into each project. LSAG is intended to provide a foundation for sustainable practices, enhance awareness, drive innovation and create flexibility for users to develop pioneering solutions through the inclusion of sustainable practices into every phase of its projects.

PART 2:
Implementation of LSAG

Los Angeles World Airports
Global Leader in
Airport Sustainability

2.1 Introduction

This section provides information to assist the Project Delivery Team in achieving the highest LAWA-Sustainable level possible for each project. LSAG often references LEED® documents and tables; therefore, it is expected that a project team member will be familiar with LEED® standards or is a LEED® Accredited Professional to assist in navigating the project through LSAG.

2.2 Applicability of Lsag

The following categories of projects may be evaluated for sustainability:

- Vertical & Horizontal Projects on LAWA properties
- LAWA, Tenant and Concessionaire Projects on LAWA properties

Projects being evaluated for sustainability first need to determine whether LEED® applies. Both the City of Los Angeles and California have mandatory and voluntary green code standards. The Project Delivery Team should ensure that they are meeting the established green standards. However, if LEED® or another green standard does not apply to the project, the project will be reviewed under LSAG. Projects that may be reviewed under LSAG include:

- Projects that involve a certified design (Use both Sustainable Planning and Design and Sustainable Construction Checklists (Parts 4 and 5)). These may include, but are not limited to: new construction, rehabilitation of interior or exterior buildings and civil projects such as roadways, runways and taxiways.
- Construction and Maintenance projects that do not involve a certified design (Use the Sustainable Construction Checklist (Part 5)). These projects may include, but are not limited to equipment upgrades, replacements of windows, equipment, carpeting, kiosks or painting.

2.3 Implementation of LSAG

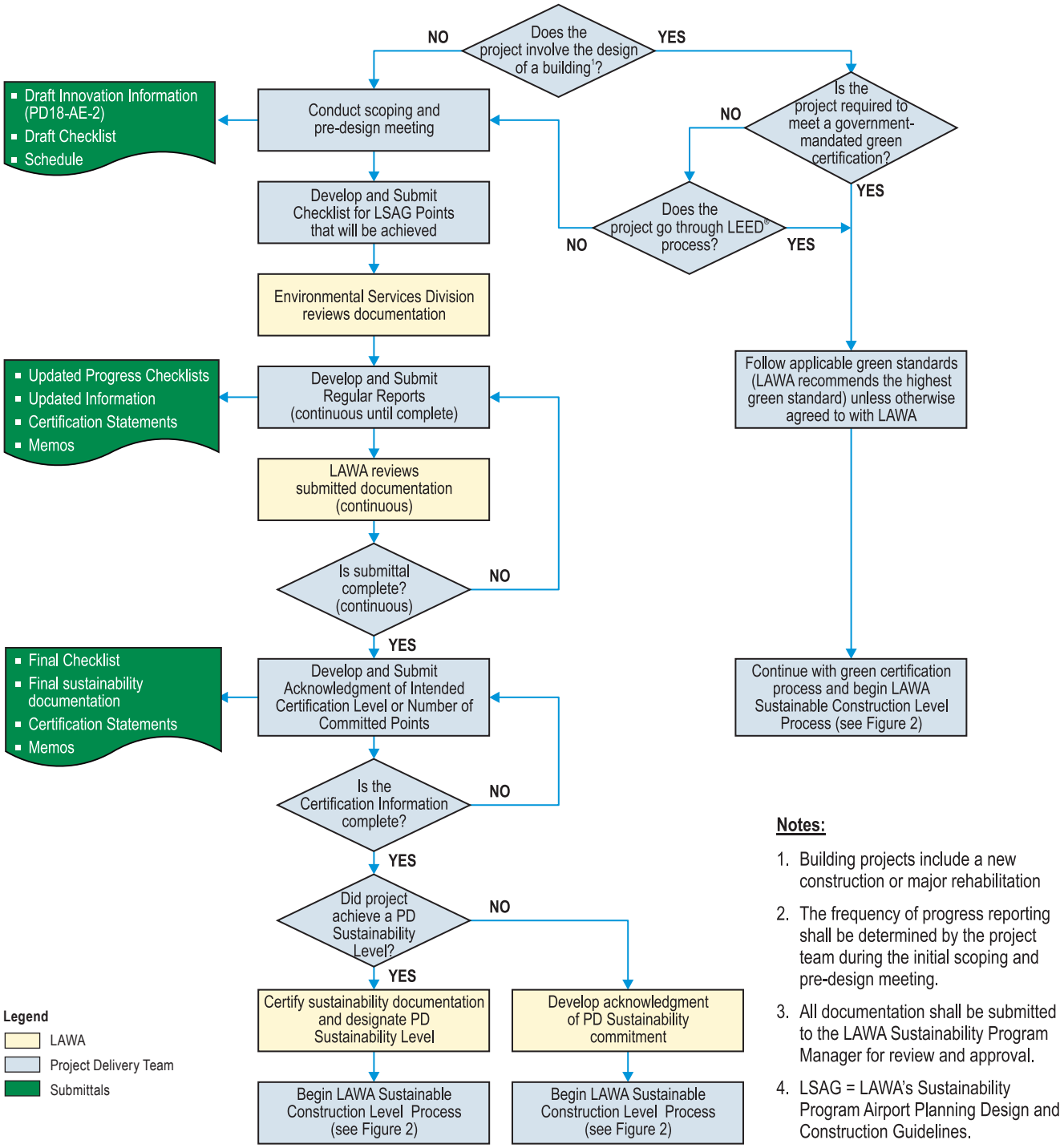
If the project has a certified design, the following process as outlined in 2.3.1 is recommended for the successful implementation of LSAG. For projects that do not have a certified design, Section 2.3.2 outlines the construction process for the project. Figures 1 and 2 outline the steps for the planning and design and the construction stages of the project.

2.3.1 Certified Design Projects

The following steps should be followed for Certified Design Projects:

1. Identify the Project Delivery Team. In the earliest stage of project, specifically during the development of project definition and scope, the

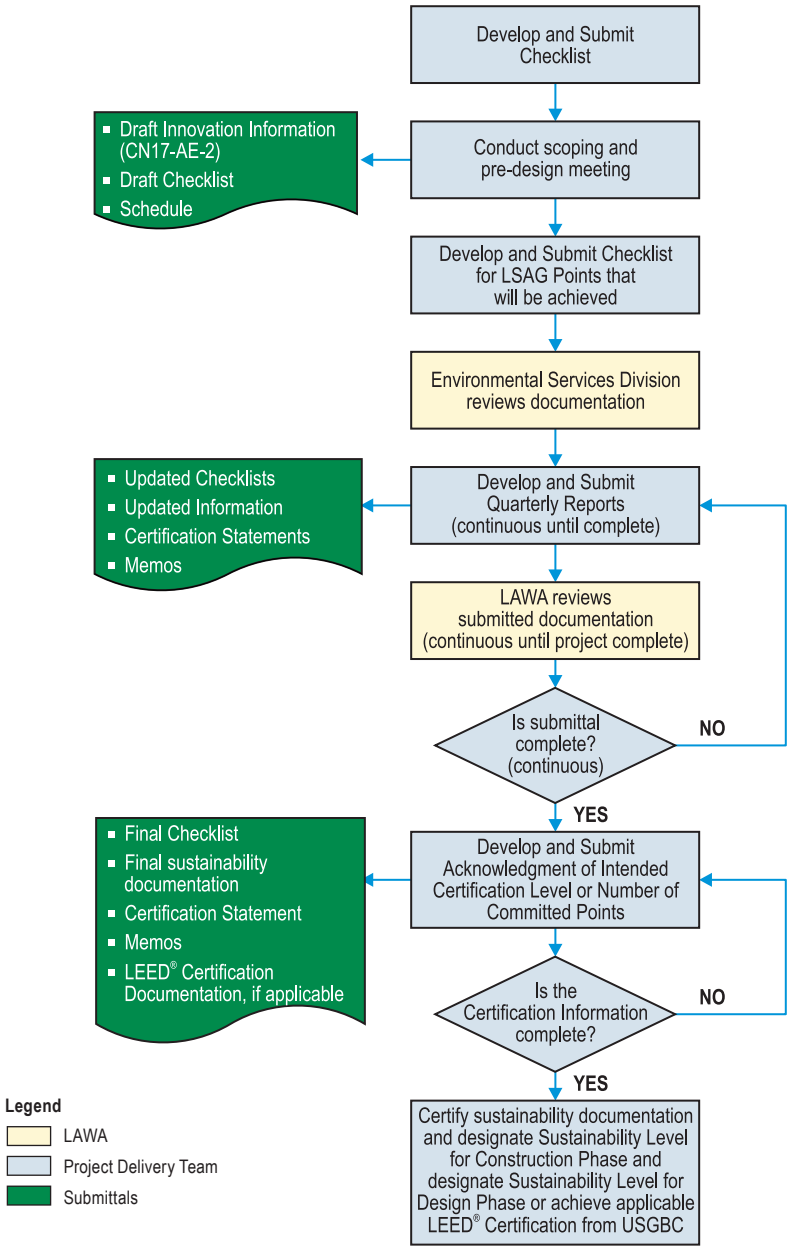
Figure 1
Implementation Process for LAWA's Sustainable Planning & Design Guidelines



Notes:

1. Building projects include a new construction or major rehabilitation
2. The frequency of progress reporting shall be determined by the project team during the initial scoping and pre-design meeting.
3. All documentation shall be submitted to the LAWA Sustainability Program Manager for review and approval.
4. LSAG = LAWA's Sustainability Program Airport Planning Design and Construction Guidelines.

Figure 2
Implementation Process for LAWA's Sustainable Construction Guidelines



Notes:

1. The frequency of progress reporting shall be determined by the project team during the initial scoping and pre-design meeting.
2. All documentation shall be submitted to the LAWA Project Manager for review and approval.
4. LSAG = LAWA's Sustainability Program Airport Planning Design and Construction Guidelines.

LAWA strongly encourages that during Planning & Design, the Project Delivery Team consider the Construction goals.

Project Delivery Team and other interested stakeholders should consider the contents of LSAG. A fundamental belief underlying LSAG is that an integrated design process will enable LAWA, tenants and concessionaires to achieve thoughtful, sustainable planning, design and construction efforts with limited impact to the budget and schedule.

Determine whether the project will be evaluated as a LEED® or LSAG project. LAWA encourages all building and building renovations projects to meet LEED® or other state or local-approved green certification standards. The Project Delivery Team must submit the certification to Environmental Services Division when received for project. LAWA encourages all projects achieve the highest level of sustainability. If the Project Delivery Team needs to consult with the Environmental Services Division (ESD) to determine applicability to LSAG, they should contact them at this point in the design. These projects then proceed to Part 2.3.2.

2. Determine the LAWA certification level goal. For LSAG projects, LAWA encourages that projects achieve the highest level of sustainability. The Project Deliver Team needs to evaluate the LAWA-Sustainable Checklist and determine which LSAG level is most appropriate (Section 2.4 – LSAG Sustainability levels). To assist in setting and measuring progress toward the project, the Checklists should be used at project kick-off to identify and record the sustainability goals and selected technical strategies for the project.

   Balance the sustainability goals and strategies with planning, design and construction requirements to find integrated solutions, not tradeoffs or compromises, to conflicts that may arise.

3. Consult with Environmental Services Division (ESD). Discuss the project scope with ESD staff to gain concurrence on LSAG Sustainability Level. During your discussion with ESD, determine the appropriate interval for submitting progress information. The Project Delivery Team may deem that quarterly submittals are appropriate, however if the project is fast-paced, a submittal schedule based on milestones may be a better fit.
4. Submit progress checklists with appropriate documentation on a predetermined interval (see step 3). Each submittal should include the following information:

   a. Sustainable PD Checklist. The Checklist should be used to track progress in achieving the sustainability goals. The Checklist summarizes the performance standards, which have corresponding point allocations regarding achievement.

   b. Certification Statements of completed Performance Standards, if applicable.

c. Memo with the following information:

- Update on project status – what has changed, deadlines, etc.
- Intended Sustainability Level
- Track progress – what PSs have been met, can be met, cannot be met
- Number of points achieved and pending
- PS submittals approved by ESD.

It is the responsibility of the Project Delivery Team to update this information and provide it to ESD. ESD will then review the information, provide concurrence that a certain Performance Standard has been completed, advise on what else may be provided as documentation or request additional information. ESD may also waive certain requirements depending on project-specific circumstances. In some instances, ESD may consult with LAWA's Guidelines Oversight Committee.

Following the initial project evaluation, continued review of LSAG throughout the planning, design and construction stages will help to ensure that the sustainability goals are met as the project progresses. This step will be followed until the completion of the planning and design phase of the project.

5. Upon completion of the planning and design phase of the project, the final checklist must be signed and submitted. Any additional documentation such as follow-up requirements and signed Certification Statements must be submitted. ESD will complete its final evaluation of this project phase and determine or confirm the Sustainability level.

2.3.2 Construction Projects

All projects are encouraged to follow the Construction (CN) process. The following steps should be followed:

1. Identify the Project Delivery Team. In the earliest stage of project, specifically during the development of project definition and scope, the Project Delivery Team and other interested stakeholders should consider the contents of LSAG. A fundamental belief underlying LSAG is that an integrated process will enable LAWA, tenants and concessionaires to achieve thoughtful, sustainable construction efforts with limited impact to the budget and schedule. If the project was a certified design project, the Project Delivery Team for this phase may be different.
2. Determine the certification level goal. Establishing sustainability goals for the project at the earliest stage by engaging members of the Project Delivery Team as well as other interested stakeholders

as appropriate, including construction, maintenance and operation teams, users of the final project, members of other LAWA projects that may be impacted or interested in collaboration on construction aspects, City officials, tenants and community participants.

3. Determine the level goal. Establish sustainability goals for the project at the earliest stage by engaging members of the Project Delivery Team as well as other interested stakeholders as appropriate, including maintenance and operation teams, users of the final project, members of other LAWA projects that may be impacted or interested in collaboration on construction aspects, City officials, tenants and community participants.

   LAWA encourages that projects achieve the highest level of sustainability. The Project Delivery Team needs to evaluate the LAWA-Sustainable Checklist and determine which LSAG level is most appropriate (Section 2.4 – LSAG Sustainability levels). To assist in setting and measuring progress toward the project the Checklist should be used at project kick-off to identify and record the sustainability goals and selected technical strategies for the project.

4. Consult with Environmental Services Division (ESD). Discuss the project scope with ESD staff to gain concurrence on the Sustainability level. During your discussion with ESD, determine the appropriate interval for submitting progress information. The Project Team may deem that quarterly submittals are appropriate; however, if the project is fast-paced, a submittal schedule based on milestones may be a better fit.

5. Submit progress checklist with appropriate documentation on a predetermined interval (see step 4). Each submittal should include the following information:

   a. Sustainable CN Checklist. The Checklist should be used to track progress in achieving the sustainability goals. The Checklist summarizes the performance standards, which have corresponding point allocations regarding achievement.

   b. Certification Statements of completed Performance Standards

   c. Memo with the following information:

      - Update on project status – what has changed, deadlines, etc.
      - Intended Sustainability level
      - Track progress – what PSs have been met, can be met, cannot be met
      - Number of points achieved and pending
      - PS submittals approved by ESD.

It is the responsibility of the Project Delivery Team to update this information and provide it to ESD. ESD will then review the information, provide concurrence that a certain Performance Standard has been completed, advise on what else may be provided as documentation or request additional information. ESD may also waive certain requirements depending on project-specific circumstances. In some instances, ESD may consult with LAWA's Sustainability Oversight Committee.

Following the initial project evaluation, continued review of LSAG throughout the construction stage will help to ensure that the sustainability goals are met as the project progresses. This step will be followed until the completion of the construction phase of the project.

CP = **C***onstruction* **P***oint that can be earned by achieving a performance standard of the Sustainable CN Guidelines*

DP = **D***esign* **P***oint that can be earned by achieving a performance standard of the Sustainable PD Guidelines*

6. Upon completion of the construction phase of the project, the final checklist must be signed and submitted. Any additional documentation such as follow-up requirements and signed Certification Statements must be submitted. ESD will complete its final evaluation of this project phase and determine or confirm the Sustainability level.
7. Certification Level is awarded upon completion of the construction phase or any required follow-up – whichever is later.
8. LAWA will certify and designate the Sustainability Level for CN & PD for the project. If the project achieved LEED® Certification from USGBC, then LAWA will designate the Sustainability Level only for the CN level.

2.4 The LAWA-Sustainable Rating System

LSAG incorporates the "LAWA-Sustainable Rating System", which is used to measure the level of achievement of the sustainable planning and design and construction performance standards. As part of the rating system, LAWA encourages all building and renovation projects to evaluate the feasibility of achieving the highest LEED® standard. For planning and design phase, "Planning and Design Points (DPs)" are awarded. Similarly, for construction, "Construction Points (CPs)" are awarded. For each performance standard that is achieved, an allocation of LAWA-Sustainable Points (DPs or CPs) will be awarded. Separate LAWA Sustainable Levels for PD and CN will be awarded upon completion of the project. Application of the Rating System, and the number of points required for each level of certification, is based on the category (size and type) of the project and whether it includes the construction of a new building or the reconstruction or interior renovation of an existing building.

Three sustainable levels for achieving LAWA-Sustainable certification for both PD and CN phases are described below:

- LAWA Sustainable
- Business Class
- First Class

As smaller projects may have fewer opportunities to employ the full range of sustainable concepts provided in LSAG, the points required to meet each level of certification are adjusted accordingly. It should be noted that the Sustainable Construction Project certification applies even to those projects which are unable to achieve a sufficient number of DPs to attain the LAWA Sustainable Project certification.

PROJECTS GREATER THAN 1,000 FT^2

The following projects that are not receiving LEED® certification will be evaluated under this category:

- New Buildings/Facilities
- Interior Renovations
- Restaurants that prepare food on-site
- Civil Projects

The points required for each of the three Planning and Design LAWA-Sustainable certification levels for this class of projects are as follows:

Sustainable Level	Planning and Design Points	Construction Points
LAWA Sustainable Project	≥70	≥25
Business Class	≥80	≥30
First Class	≥100	≥35

PROJECTS LESS THAN 1,000 FT^2

The following projects less than 1,000 ft^2 that are not receiving LEED® certification may be evaluated under this class:

- New construction (with or without buildings or structures)
- Renovation of interior space
- Food establishments that do not prepare food on-site

The points required for each of the three LAWA-Sustainable certification levels for this class of project are as follows:

Sustainable Level	Planning and Design Points	Construction Points
LAWA Sustainable Project	≥40	≥15
Business Class	≥45	≥18
First Class	≥55	≥20

PART 3:
Structure of LSAG

Los Angeles World Airports
Global Leader in
Airport Sustainability

LSAG is structured into four sections. The sections are the following:

- Sustainable Planning and Design
- List of Planning and Design Performance Standards
- Checklist
- Certification Statement
- Planning and Design Performance Standards
- Sustainable Construction
- List of Construction Performance Standards
- Checklist
- Certification Statement
- Construction Performance Standards;

LSAG includes a list of acronyms, a glossary and references. An Addendum listing the references is also included. LSAG is further organized by the natural progression of a project. The Sustainable Planning and Design (PD) section (Part 3) begins with the planning portion of a project and then progress to the design portion, and are intended to be used by both planners and engineers during every phase of a project. The Sustainable Construction (CN) section (Part 4) is located after the Sustainable Planning and Design section.

3.1 Sustainable PD and CN Sections

The Sustainable PD and Sustainable CN sections contain the following information:

- **List of PD and CN Performance Standards –** To assist in finding the desired performance standard.
- **Checklist –** To chart progress while striving to meet the desired LAWA-Sustainable Level as well as to be used at the end of each stage of the project totally the points achieved and certify the information submitted to LAWA.
- **Certification Statement –** To be submitted when a performance standard is met and complete documentation submitted to LAWA.
- **Performance Standards –** To provide information to meet the required actions to collect points. The Appendix includes information on how the points in each Performance Standards are allocated.

3.2 STRUCTURE OF THE PERFORMANCE STANDARDS

LSAG contains performance standards for planning, design and construction. Each performance standard is divided into six or seven sections:

1. Intent
2. Point Allocation
3. Benefits
4. Actions & Targets
5. Documentation
6. Technical Approaches
7. Acknowledgements (as needed)

Intent - The primary motivation for implementing the sustainability performance standard. The most sustainable projects will be planned, designed and built around the intent of the performance standard rather than focusing on the number of points that can be achieved. While not all performance standards will be applicable to every project, Project Delivery Teams are encouraged to think creatively and to consider the intent of each performance standard and whether that intent can be achieved as part of the planning, design and construction phases.

Point Allocation – The section identifies the total maximum number of points available. In some instances, points are allocated according to a schedule of achievement.

Benefits - The potential environmental, economic and social benefits resulting from the implementation of each performance standard also serve as motivation for incorporating sustainable planning, design and construction practices into projects.

Actions & Targets - This section outlines the activities, metrics and targets that are required to achieve the points associated with the performance standard. In many cases, targets will dictate the incremental performance improvement over a baseline or a quantifiable number or percentage that must be achieved (e.g. achieve a 75% recycling rate during construction). In other cases, achievement of the performance standard will be measured on a scale by the accomplishment of a specific milestone or task (e.g. develop an Energy Management Plan).

Documentation - This section outlines the documentation that is required to achieve the LAWA-Sustainable Point(s).

Technical Approaches - Technical approaches are suggestions or strategies to achieve the requirements of the performance standard. Users of

LSAG may choose additional technical approaches that are not listed, but they must meet or exceed the intent, actions and targets and documentation sections included in the performance standard.

Acknowledgements - For performance standards that cite detailed requirements from specific references, these references are noted.

3.3 Documentation References

Throughout the performance standards there are references to other documents, including tables, regulations, and performance standards by others. In the spirit of sustainability, the details of those references are maintained in the Addendum in order to minimize the number of revisions to the entirety of LSAG in the future, as references may change. It is the responsibility of the designated professional responsible to execute and implement LSAG to ensure that the most recent version of the addendum is referred to. Updated addenda will be available through LAWA.

3.4 Additional Information

Your LAWA Project Manager will be your primary contact for questions regarding the implementation of LSAG. If the Project Delivery Team has any general questions pertaining to LSAG, the following persons can answer their questions:

Robert Freeman ..... rfreeman@lawa.org 310-646-3853

Teresa Sabol Spezio ..... speziots@cdm.com 213-457-2200

PART 4:
Sustainable Planning and Design Guidelines

Los Angeles World Airports
Global Leader in Airport Sustainability

Sustainable Planning & Design Guidelines Performance Measures

List of Performance Standards

Project Implementation

PD1-PI-1 Sustainability Planning and Progress Meetings

PD1-PI-2 Recycled & Bleach Free Paper

PD1-PI-3 Double-Sided Printing

PD1-PI-4 Electronic Submissions

PD1-PI-5 Electronic Meetings

PD1-PI-6 Engage Stakeholders

General Planning

PD2-GP-1 Minimize Impervious Areas

PD2-GP-2 Avoid Development of Inappropriate Sites

PD2-GP-3 Contaminated Site Redevelopment

PD2-GP-4 Community Education

PD2-GP-5 Site Protection & Restoration

PD2-GP-6 Integrated Vegetation & Wildlife Management

PD2-GP-7 Integrate Sustainability into the Airport Master Plan

Airside Planning

PD3-AP-1 Exterior Noise & Acoustical Control (Aircraft)

PD3-AP-2 Design Runways, Taxiways & Terminals to Reduce Taxiing Distances & Times

PD3-AP-3 Design Airside Layout to Reduce Aircraft Delay

PD3-AP-4 Provide Infrastructure for Alternatively-Fueled GSE in Airside Design

PD3-AP-5 Provide Infrastructure Planning for Hydrant Fueling for Aircraft

Landside Planning

PD4-LP-1 Exterior Noise & Acoustical Control (Non-Aircraft)

PD4-LP-2 Minimize Roadway Congestion

PD4-LP-3 Public Transportation Access

PD4-LP-4 Bicycle Storage

PD4-LP-5 Sustainable Parking Facilities

PD4-LP-6 Support Alternative Fuel Vehicles

PD4-LP-7 Planning for Future Land Use

Sustainable Planning & Design Guidelines Performance Measures

Climate Change Adaptation Planning

PD5-CC-1 Increased Temperature

PD5-CC-2 Severe Weather

PD5-CC-3 Sea Level Rise and Storm Surge

PD5-CC-4 Ecosystem Changes

Stormwater Management and Erosion Control

PD6-SM-1 Prevent Downstream Erosion

PD6-SM-2 Provide Stormwater Treatment

Landscape Design

PD7-LD-1 Reduce or Eliminate Potable Water Use for Landscaping

PD7-LD-2 Reduce Impact of Fertilizer Use

PD7-LD-3 Provide Infrastructure for Composting & Vermiculture

Water Efficiency & Conservation

PD8-WE-1 Water Management Plan

PD8-WE-2 Water Use Efficiency

PD8-WE-3 Water Reuse & Reclamation

Heat Island Reduction

PD9-HI-1 Heat Island Reduction - Roof

PD9-HI-2 Heat Island Reduction - Non-Roof

Interior & Exterior Lighting Quality

PD10-LQ-1 Exterior Light Pollution Reduction

PD10-LQ-2 Interior Lighting Quality

Noise Pollution Reduction

PD11-NP-1 Interior Noise & Acoustical Control

Energy Efficiency & Conservation

PD12-EC-1 Energy Management Plan

PD12-EC-2 Energy Systems Commissioning

PD12-EC-3 Energy Optimization

PD12-EC-4 Provide Infrastructure for Pre-Conditioned Air

PD12-EC-5 On-Site Alternative & Renewable Energy

Emission Impact Evaluation & Mitigation

PD13-EI-1 Refrigerant Management/Ozone Protection – Planning & Design

Sustainable Planning & Design Guidelines Performance Measures

PD13-EI-2 Greenhouse Gas Emissions – Planning & Design

PD13-EI-3 Criteria & Air Toxics – Planning & Design

Materials & Resources

PD14-MR-1 Waste Reduction & Management Plan

PD14-MR-2 Material Durability

PD14-MR-3 Building Reuse

PD14-MR-4 Material Reuse

PD14-MR-5 Recycled Content

PD14-MR-6 Design Roads for Increased Life Cycle

PD14-MR-7 Regional Materials

PD14-MR-8 Rapidly Renewable Materials

PD14-MR-9 Certified Wood

PD14-MR-10 Wood Preservatives

PD14-MR-11 Low-Emitting Materials

PD14-MR-12 Furniture & Fixtures

PD14-MR-13 Design for Deconstruction, Reuse & Recycling

PD14-MR-14 Flexible Systems, Spaces & Infrastructure

Indoor Environmental Quality

PD15-IQ-1 Minimum Indoor Air Quality (IAQ) Performance

PD15-IQ-2 Air Quality Monitoring

PD15-IQ-3 Increased Effective Ventilation

PD15-IQ-4 Indoor Chemical & Pollutant Source Control

PD15-IQ-5 Lighting Control

PD15-IQ-6 Thermal Comfort Design

PD15-IQ-7 Daylight & Views

Post-Construction Maintenance, Monitoring & Reporting

PD16-PC-1 Operation & Maintenance Program

PD16-PC-2 Staff Training

PD16-PC-3 Systems Monitoring

PD16-PC-4 Recommissioning

PD16-PC-5 Emission Reduction Reporting

PD16-PC-6 Sustainable Project Cost Impacts

PD16-PC-7 Productivity Impacts

Sustainable Planning & Design Guidelines Performance Measures

Social Responsibility

PD17-SR-1 Environmental Accountability

PD17-SR-2 Community Involvement

PD17-SR-3 Codes of Conduct

PD17-SR-4 Sustainable Employee Development

PD17-SR-5 Sustainable Workplace

PD17-SR-6 Company Philanthropy & Social Investments

Additional Planning & Design Elements

PD18-AE-1 LEED® Accredited Professional - Planning & Design

PD18-AE-2 Innovation in Planning & Design

SUSTAINABLE PLANNING AND DESIGN CHECKLIST

Project Name: _____ Date: _____

☐ Draft Date: _____ ☐ Final (Please sign last page)

Yes	Maybe	No	Possible Points	Number	Performance Standard Title	Notes	Status	Verified (initials)
Project Implementation								
			1	PD1-PI-1	Sustainability Planning and Progress Meetings			
			1	PD1-PI-2	Recycled & Bleach Free Paper			
			1	PD1-PI-3	Double-Sided Printing			
			1	PD1-PI-4	Electronic Submissions			
			1	PD1-PI-5	Electronic Meetings			
			2	PD1-PI-6	Engage Stakeholders			
			7		**TOTAL**			
General Planning								
			2	PD2-GP-1	Minimize Impervious Area - 25%			
			1	PD2-GP-1	Minimize Impervious Area - 50%			
			2	PD2-GP-2	Avoid Development of Inappropriate Sites			
			3	PD2-GP-3	Contaminated Sites Re-Development			
			3	PD2-GP-4	Community Education			
			2	PD2-GP-5	Site Protection & Restoration			
			2	PD2-GP-6	Integrated Vegetation & Wildlife Management			
			3	PD2-GP-7	Integrate Sustainability into the Airport Master Plan			
			18		**TOTAL**			

SUSTAINABLE PLANNING AND DESIGN CHECKLIST

Project Name: _____ Date: _____

☐ Draft Date: _____ ☐ Final (Please sign last page)

Yes	Maybe	No	Possible Points	Number	Performance Standard Title	Notes	Status	Verified (initials)
Airside Planning								
			2	PD3-AP-1	Exterior Noise & Acoustical Control (Aircraft)			
			2	PD3-AP-2	Design Runways, Taxiways & Terminals to Reduce Taxiing Distances & Times			
			2	PD3-AP-3	Design Airside Layout to Reduce Aircraft Delay			
			3	PD3-AP-4	Provide Infrastructure for Alternatively-Fueled GSE in Airside Design			
			2	PD3-AP-5	Provide Infrastructure Planning for Hydrant Fueling for Aircraft			
			11		**TOTAL**			
Landside Planning								
			2	PD4-LP-1	Exterior Noise & Acoustical Control (Non-Aircraft)			
			1	PD4-LP-1	Exterior Noise & Acoustical Control (Non-Aircraft) - Noise & Acoustical Quality Control Plan			
			1	PD4-LP-1	Exterior Noise & Acoustical Control (Non-Aircraft) - Independent Audit			
			2	PD4-LP-2	Minimum Roadway Congestion			
			3	PD4-LP-3	Public Transportation Access			
			2	PD4-LP-4	Bicycle Storage			
			2	PD4-LP-5	Sustainable Parking Facilities			
			3	PD4-LP-6	Support for Alternative Fuel Vehicles			
			2	PD4-LP-7	Planning for Future Land Use			
			18		**TOTAL**			

SUSTAINABLE PLANNING AND DESIGN CHECKLIST

Project Name: _____ Date: _____

☐ Draft Date: _____ ☐ Final (Please sign last page)

Yes	Maybe	No	Possible Points	Number	Performance Standard Title	Notes	Status	Verified (initials)
Climate Change Adaptation Planning								
			3	PD5-CC-1	Increased Temperature			
			3	PD5-CC-2	Severe Weather			
			3	PD5-CC-3	Sea Level Rise and Storm Surge			
			3	PD5-CC-4	Ecosystem Change			
			12		**TOTAL**			
Storm Water Management and Erosion Control								
			2	PD6-SM-1	Prevent Downstream Erosion			
			2	PD6-SM-2	Provide Storm Water Treatment			
			4		**TOTAL**			
Landscape Design								
			3	PD7-LD-1	Reduce or Eliminate Potable Water Use for Landscaping			
			1	PD7-LD-1	Reduce or Eliminate Potable Water Use for Landscaping - Additional Activities			
			2	PD7-LD-2	Reduce Impact of Fertilizer Use			
			1	PD7-LD-2	Reduce Impact of Fertilizer Use - Organic Usage and Signage			
			3	PD7-LD-3	Provide Infrastructure For Composting & Vermiculture			
			10		**TOTAL**			
Water Efficiency & Conservation								
			1	PD8-WE-1	Water Management Plan			
			2	PD8-WE-2	Water Use Efficiency			
			2	PD8-WE-3	Water Reuse & Reclamation			
			5		**TOTAL**			

SUSTAINABLE PLANNING AND DESIGN CHECKLIST

Project Name: _____ Date: _____

☐ Draft Date: _____ ☐ Final (Please sign last page)

Yes	Maybe	No	Possible Points	Number	Performance Standard Title	Notes	Status	Verified (initials)
Heat Island Reduction								
			2	PD9-HI-1	Heat Island Reduction - Roof			
			2	PD9-HI-2	Heat Island Reduction - Non-Roof			
			4		**TOTAL**			
Interior & Exterior Lighting Quality								
			2	PD10-LQ-1	Exterior Light Pollution Reduction			
			2	PD10-LQ-2	Interior Lighting Quality			
			4		**TOTAL**			
Noise Pollution Reduction								
			2	PD11-NP-1	Interior Noise & Acoustical Control			
			2		**TOTAL**			

SUSTAINABLE PLANNING AND DESIGN CHECKLIST

Project Name: _____ Date: _____

☐ Draft Date: _____ ☐ Final (Please sign last page)

Yes	Maybe	No	Possible Points	Number	Performance Standard Title	Notes	Status	Verified (initials)
Energy Efficiency & Conservation								
			2	PD12-EC-1	Energy Management Plan			
			3	PD12-EC-2	Energy Systems Commissioning			
			1	PD12-EC-3	Energy Optimization - 10% Reduction			
			1	PD12-EC-3	Energy Optimization - 14% Reduction			
			1	PD12-EC-3	Energy Optimization - 18% Reduction			
			1	PD12-EC-3	Energy Optimization - 22% Reduction			
			1	PD12-EC-3	Energy Optimization - 26% Reduction			
			1	PD12-EC-3	Energy Optimization - 30% Reduction			
			1	PD12-EC-3	Energy Optimization - 34% Reduction			
			1	PD12-EC-3	Energy Optimization - 38% Reduction			
			1	PD12-EC-3	Energy Optimization - 42% Reduction			
			1	PD12-EC-3	Energy Optimization - 46% Reduction			
			2	PD12-EC-4	Provide Infrastructure for Pre-Conditioned Air			
			1	PD12-EC-5	On-site Alternative Renewal Energy - 2.5% Energy Generated			
			1	PD12-EC-5	On-site Alternative Renewal Energy - 5% Energy Generated			
			1	PD12-EC-5	On-site Alternative Renewal Energy - 10% Energy Generated			
			1	PD12-EC-5	On-site Alternative Renewal Energy - 15% Energy Generated			
			1	PD12-EC-5	On-site Alternative Renewal Energy - 25% Energy Generated			
			1	PD12-EC-5	On-site Alternative Renewal Energy - 40% Energy Generated			
			23		**TOTAL**			

SUSTAINABLE PLANNING AND DESIGN CHECKLIST

Project Name: _____ Date: _____

☐ Draft Date: _____ ☐ Final (Please sign last page)

Yes	Maybe	No	Possible Points	Number	Performance Standard Title	Notes	Status	Verified (initials)
Emission Impact Evaluation & Mitigation								
			1	PD13-EI-1	Refrigerant Management/Ozone Protection - Planning & Management Plan			
			2	PD13-EI-2	Greenhouse Gas Emissions - Planning & Design			
			1	PD13-EI-3	Criteria & Air Toxics - Planning & Design			
			4		**TOTAL**			
Materials & Resources								
			1	PD14-MR-1	Waste Reduction & Management Plan			
			3	PD14-MR-2	Material Durability			
			3	PD14-MR-3	Building Reuse			
			2	PD14-MR-4	Material Reuse			
			2	PD14-MR-5	Recycled Content			
			2	PD14-MR-6	Design Roads for Increased Life Cycle			
			2	PD14-MR-7	Regional Materials			
			3	PD14-MR-8	Rapidly Renewable Materials			
			2	PD14-MR-9	Certified Wood			
			2	PD14-MR-10	Wood Preservatives			
			2	PD14-MR-11	Low-Emitting Materials			
			1	PD14-MR-12	Furniture & Fixtures			
			2	PD14-MR-13	Design for Deconstruction, Reuse & Recycling			
			3	PD14-MR-14	Flexible Systems, Spaces & Infrastructure			
			30		**TOTAL**			

SUSTAINABLE PLANNING AND DESIGN CHECKLIST

Project Name: _____ Date: _____

☐ Draft Date: _____ ☐ Final (Please sign last page)

Yes	Maybe	No	Possible Points	Number	Performance Standard Title	Notes	Status	Verified (initials)
Indoor Environmental Quality								
			1	PD15-IQ-1	Minimum Indoor Air Quality (IAQ) Performance			
			2	PD15-IQ-2	Air Quality Monitoring			
			2	PD15-IQ-3	Increased Effective Ventilation			
			2	PD15-IQ-4	Indoor Chemical & Pollutant Source Control			
			1	PD15-IQ-5	Lighting Control			
			1	PD15-IQ-6	Thermal Comfort Design			
			2	PD15-IQ-7	Daylight & Views			
			11		**TOTAL**			
Post-Construction Maintenance, Monitoring & Reporting								
			2	PD16-PC-1	Operation & Maintenance Program			
			1	PD16-PC-2	Staff Training			
			1	PD16-PC-3	Systems Monitoring			
			1	PD16-PC-3	Systems Monitoring - Implement MV&P Plan for 1 year			
			1	PD16-PC-4	Recommissioning			
			1	PD16-PC-5	Emission Reduction Reporting			
			1	PD16-PC-5	Emission Reduction Reporting - Submit Comparison			
			1	PD16-PC-6	Sustainable Project Cost Impacts			
			1	PD16-PC-6	Sustainable Project Cost Impacts - Submit Comparison			
			3	PD16-PC-7	Productivity Impacts			
			13		**TOTAL**			

SUSTAINABLE PLANNING AND DESIGN CHECKLIST

Project Name: _____ Date: _____

☐ Draft Date: _____ ☐ Final (Please sign last page)

Yes	Maybe	No	Possible Points	Number	Performance Standard Title	Notes	Status	Verified (initials)
Social Responsibility - Planning & Design								
			1	PD17-SR-1	Environmental Justice			
			3	PD17-SR-2	Community Partnerships			
			1	PD17-SR-3	Codes of Conduct			
			1	PD17-SR-4	Employee Development			
			1	PD17-SR-5	Sustainable Labor Practice Indicators			
			1	PD17-SR-6	Philanthropy & Social Investments			
			1	PD17-SR-7	Access to Quality Health Care			
			9		**TOTAL**			
Additional Planning & Design Elements								
			1	PD18-AE-1	LEED Accredited Professional - Planning & Design			
			1	PD18-AE-2	Innovation in Planning & Design			
			1	PD18-AE-2	Innovation in Planning & Design			
			1	PD18-AE-2	Innovation in Planning & Design			
			1	PD18-AE-2	Innovation in Planning & Design			
			5		**TOTAL**			
			190		**GRAND TOTAL**			

☐ Final

Signature: _____

Title: _____

Name: _____

CERTIFICATION STATEMENT

FOR THE SUBMISSION OF DOCUMENTATION TO RECEIVE CREDIT FOR ACHIEVEMENT OF THE PERFORMANCE STANDARDS INCLUDED IN THE SUSTAINABLE AIRPORT PLANNING, DESIGN AND CONSTRUCTION GUIDELINES

For airport projects, the Sustainable Airport Planning, Design and Construction Guidelines (Guidelines) are required to be implemented throughout the project life cycle. As part of the Guidelines, Project Delivery Teams are obligated to submit documentation as verifiable evidence that the requirements of the performance standards included in the Guidelines were met for the project. This Certification Statement must be submitted in conjunction will all relevant and required documentation in order to receive credit for the actions taken to accomplish each performance standard for the project.

"I certify, based upon my knowledge, information and belief obtained from my personal observation and observation of the staff under my direct supervision, that the requirements for the performance standard listed below were met for the indicated project below and that all relevant and required documentation is contained herein.

_____
Project Name

_____
Project Location

_____
Contractor or Entity Responsible for Project

_____
Performance Standard Name and Number

PREPARED BY:

_____ _____
Printed Name Title

_____ _____
Signature Date

APPROVED BY:

_____ _____
Printed Name Title

_____ _____
Signature Date

PD1-PI-1 Project Implementation: Sustainability Planning and Progress Meetings

INTENT

During the project kick-off and throughout the project, engage appropriate stakeholders involved in planning, design and construction as well as those involved in the post-construction operation and maintenance through meetings focused on sustainability. Provide sustainability awareness training and a forum for discussion regarding the overall sustainability goals for the project in order to facilitate a "whole-system optimization" approach, capture innovative ideas and concepts, and resolve potential conflicts. Following the Initial Sustainability Project Planning Meeting, continue to enable open and clear communication with project stakeholders to facilitate completion of project tasks.

ACTIONS & TARGETS

To meet requirements, comply with the following:

- Conduct Initial Sustainability Project Planning Meeting and regular Project Sustainability Progress Meetings throughout the course of the project; AND
- Engage stakeholders from interested LAWA departments, the FAA, USEPA, tenants, contractors, subcontractors and/or consultants that will be involved in the design, construction, operation and maintenance in the meeting. Make stakeholders aware of available training; AND
- Provide sustainability training and set expectations for the level of sustainability performance of the project; AND
- Discuss the sustainability goals of the project to identify ideas and resolve potential conflicts; AND
- Designate a sustainability coordinator; AND
- Continually review expectations for the level of sustainability performance for the project during planning, design and construction; AND
- Conduct at least 2 Sustainability Progress Meetings per year; AND
- Prepare Quarterly Progress Reports and submit to Oversight Committee in accordance with the Oversight Committee's meeting schedule.

TECHNICAL APPROACHES

- Include training on sustainability and LAWA's Sustainability Vision and Principles during Initial Sustainability Project Planning Meeting.
- Provide training on LAWA's Sustainable Airport Planning, Design and Construction Guidelines (Guidelines), including their basis, the parties responsible for using the Guidelines and the LAWA Sustainable Rating System.

POINT ALLOCATION

1 Potential Planning & Design Point

BENEFITS

- Introduces LAWA's Sustainability Vision and Principles and these Guidelines.
- Sets expectations for the level of sustainability performance throughout the project.
- Gains active participation from stakeholders.
- Identifies conflicts early and helps to determine the best resolution(s).
- Allows innovative ideas and concepts to be integrated into the project.
- Provides a forum to obtain and disseminate information on the status of project-specific tasks and goals.
- Accomplishes proactive work to move toward the next steps of the project to reduce the need for redesign, Stop Work incidences and Change Orders that could potentially increase project costs.
- Develops a clearly defined set of action items and assignments.

DOCUMENTATION

- Agenda for Initial Sustainability Project Planning Meeting and each Project Sustainability Progress Meeting.
- Meeting materials (e.g., handouts, presentations slides, etc.).
- Meeting minutes.
- Attendance list including name, company, department, role on the project and contact information.

PD1-PI-1 continued on next page.

PD1-PI-1 (CONT.) Project Implementation: Sustainability Planning and Progress Meetings

TECHNICAL APPROACHES (CONT.)

- Review the requirements of the Guidelines with the stakeholders and develop a plan to achieve them.
- Complete the LAWA Guidelines Checklists as part of the initial meeting.
- Form a "Sustainability Team" that will be responsible for managing the integration of selected sustainability performance standards into the planning, design and construction deliverables.
- Use a designated facilitator for each meeting to ensure that agenda items are thoroughly addressed in an efficient manner.
- Establish a regular meeting schedule.
- Enable members to utilize conference calls, web-meetings, and other electronic tools when they are unable to attend in person.
- Utilize project planning and tracking tools to organize documentation and coordinate communication.
- Establish a project tracking system to document milestones achieved.

DOCUMENTATION (CONT.)

- Document the absence of key stakeholders and provide evidence that a separate meeting was held for those stakeholders and/or meeting notes were distributed with opportunity for input from absent stakeholders later.
- Quarterly Progress Reports.
- Document and track Change Orders, if required.

PD1-PI-2 Project Implementation: Recycled & Bleach-Free Paper

INTENT

Minimize waste and resource consumption and foster awareness of sustainability with recycled content and bleach-free paper for project deliverables.

POINT ALLOCATION

1 potential Planning & Design Point

ACTIONS & TARGETS

To meet requirements, comply with the following:

- Submit printed project deliverables on recycled content paper, with the exception of project plans and those with specialized graphics; AND
- Use paper products manufactured from a bleach-free process; AND
- Use general purpose paper for copying and printing; AND
- Use paper products that are at least 30% recycled; AND

TECHNICAL APPROACHES

- Identify recycled content paper product lines that are available.
- Designate printers to be loaded with higher quality, recycled and bleach-free paper.
- Track paper usage through the procurement process.
- Use “printed on recycled content and bleach-free paper” on footers of documents.
- Develop marketing materials (electronic, if possible) denoting the benefits of recycled paper and the usage of recycled paper.

BENEFITS

- Fosters awareness of sustainability.
- Minimizes resource use (electricity and trees) compared to traditional paper production.
- Reduces the environmental impacts of the bleaching process.

DOCUMENTATION

- List of project deliverables and indicate those printed on recycled content and bleach-free paper. For those not printed on recycled and bleach-free paper, indicate the reason.
- List of brands of recycled content and bleach-free paper used during the project.

PD1-PI-3 Project Implementation: Double-Sided Printing

INTENT

Minimize waste and resource consumption and foster awareness of sustainability with double-sided printing.

POINT ALLOCATION

1 potential Planning & Design Point

ACTIONS & TARGETS

To meet requirements, comply with the following:

- Submit project deliverables, with the exception of project plans or those with specialized graphics, in double-sided format; AND
- Develop and publish a policy requiring double-sided printing for project deliverables except for project plans and those with specialized graphics; AND
- Extend these required actions and targets for this performance standard to print shops when printing needs are sourced out.

TECHNICAL APPROACHES

- Investigate machines that offer double-sided printing when purchasing new copiers or printers.
- Obtain double-sided printing trays, which are typically available for most commercial or office printers and copiers.
- Set the default settings for printers and copiers to print double-sided.
- Provide training and/or communication materials to facilitate the use of double-sided printing capabilities.
- Develop instructional signage or electronic notification to indicate printers or copiers that print double-sided.

BENEFITS

- Saves purchasing cost of paper and reduces paper usage.
- Fosters awareness of sustainability.
- Minimizes resource use (electricity and trees) compared to single-sided printing.

DOCUMENTATION

- List of project deliverables and indicate those printed on double-sided paper. For those not printed double-sided, indicate the reason.
- Written policy for the project regarding the use of double-sided printing, including a description of exemptions.

PD1-PI-4 Project Implementation: Electronic Submissions

INTENT

Encourage the use of electronic submissions to reduce resources associated with traditional submissions of bids, plans, specifications, associated planning, design and construction documents and invoices.

ACTIONS & TARGETS

To achieve points, comply with the following:

- Establish a written procedure for reviewing and commenting on electronic project documents; AND
- Establish a written protocol for required signatures, license stamps and other seals; AND
- Establish a written policy on restricted access procedures for electronic posting; AND
- Require revisions and/or amendments to be submitted electronically.

TECHNICAL APPROACHES

- Utilize CDs, FTP sites, eRooms, specialized software packages and other innovative information technology exchanges.
- Require electronic submittals accompanied by a maximum of one printed copy for non-regulatory submissions.
- Designate a project team member to manage electronic submissions site.

POINT ALLOCATION

1 Potential Planning & Design Point

BENEFITS

- Reduces consumption and waste associated with standard printing, including paper, ink and plastics used in the production of standard submissions.
- Avoids use of fossil fuels associated with courier and standard mailings.
- Reduces costs of deliverable productions and delivery.
- Allows the reader to customize the use of print media to review specific aspects of documents.
- Allows quick access to documents while enabling confidentiality.
- Enables faster communication through electronic submittals of revisions, amendments, etc.
- Reduces physical space needed to house document submittals.
- Establishes an archiving system for project documents.

DOCUMENTATION

- Written protocol and procedure for electronic document submission and review.
- Evidence of electronic document submissions.

PD1-PI-5 Project Implementation: Electronic Meetings

INTENT

Reduce the use of resources associated with attendance at project meetings.

ACTIONS & TARGETS

To achieve points, comply with the following:

- Establish a policy to conduct at least 25% of the meetings electronically.

TECHNICAL APPROACHES

- Establish a regular meeting schedule and identify those meetings that will be held in person or electronically.
- Utilize conference calls, web-meetings and other electronic tools.
- Utilize project planning and tracking tools to organize documentation and coordinate communication.
- Enable stakeholders to attend electronic meetings.

POINT ALLOCATION

1 Potential Planning & Design Point

BENEFITS

- Avoids use of fossil fuels associated with personal vehicle miles traveled by stakeholders to attend meetings.
- Avoids waste associated with standard printing, including paper, ink and plastics, used in the production of meeting materials.
- Avoids time wasted in travel to meetings and reduces associated costs.
- Increases efficiency in scheduling of meetings.
- Allows past meeting files to be easily accessible for reviews and follow-ups.
- Ensures accountability through the electronic recording of decisions and tasks.

DOCUMENTATION

- Policy regarding electronic meetings and a narrative describing that the target was met for the project.
- Verifiable documentation that 25% of the meetings were conducted electronically.

PD1-PI-6 Project Implementation: Engage Stakeholders

INTENT

Engage stakeholders during the planning and design phase so that an open exchange of information, ideas, opportunities and constraints can be identified and considered prior to implementation. Use the knowledge of LAWA construction and maintenance staff, tenant, airline, FAA, USEPA and state representatives to assist in project planning.

ACTIONS & TARGETS

To achieve points, comply with the following:

- Ensure identified stakeholders are active in the initial and regular Project Sustainability Meetings throughout the course of the project; AND
- Make stakeholders aware of available training and materials on sustainability; AND
- Review expectations for the level of sustainability performance for the project during planning, design and construction.

TECHNICAL APPROACHES

- Establish a regular meeting schedule.
- Enable members to utilize conference calls, web-meetings or other electronic meeting tools when unable to attend in person.
- Facilitate meetings in order to ensure agenda items are thoroughly addressed in an efficient manner.
- Utilize visual aids where appropriate to facilitate discussion.
- Utilize project planning and tracking tools to organize documentation and coordinate communication.

POINT ALLOCATION

2 Potential Planning & Design Points

- See Actions & Targets for further breakdown of points.

BENEFITS

- Informs important stakeholders of projects and gains their support to enable project success.
- Gains knowledge from stakeholders to identify opportunities and constraints in planning and design.
- Minimizes Stop Work incidences, Change Orders, redesign needs and other potential design and construction obstacles and setbacks that could potentially increase project costs through the proactive consideration during the planning and design phases.
- Facilitates the permitting processes, including the NEPA and CEQA processes.

DOCUMENTATION

- Attendance list including name, company, department, role on the project and contact information. This may be the same list from PD1-PI-1, Sustainability Planning and Progress Meetings.
- Document the absence of pertinent stakeholders and provide evidence that a separate meeting was held for those stakeholders and/or that meeting notes were distributed with opportunity for input from these members later.

PD2-GP-1 General Planning: Minimize Impervious Areas

INTENT

Minimize site area covered by impervious surfaces such as concrete, asphalt and conventional roofs in order to reduce runoff and maximize infiltration. Where pavement is necessary, maximize the use of pervious pavement.

POINT ALLOCATION

2 Potential Planning & Design Points

ACTIONS & TARGETS

To achieve points, comply with the following:

- Previously Developed Sites:
  - Decrease impervious area by at least 25% relative to existing conditions; OR
  - Attain an additional point by decreasing the impervious area by at least 50% relative to existing conditions.
- New Development Sites:
  - Limit impervious area to 50% of project site; OR
  - Attain an additional point by limiting the impervious area to 25% of project site.

TECHNICAL APPROACHES

- Build vertically rather than horizontally to minimize structure footprint, to the extent practicable.
- Use vegetated green-roofs to intercept and treat stormwater.
- Locate parking areas below building footprint.
- Remove unnecessary pavement from site.

BENEFITS

- Reduces potential for erosion and flooding on- and off-site.
- Good site infiltration helps keep groundwater stable and moderates surface water levels.
- Pervious areas decrease heat island effect.

DOCUMENTATION

- Site plans clearly showing impervious and pervious areas.
- Report of total area in square feet of impervious and pervious areas for proposed project.
- Narrative explaining your project team's approach to this performance standard.

ACKNOWLEDGMENTS

or as updated in the Addendum

- USGBC, 2005. LEED® for New Construction and Major Renovations Version 2.2, October.

PD2-GP-2 General Planning: Avoid Development of Inappropriate Sites

INTENT

Avoid development of inappropriate sites, including those that contain some rare or valuable attributes that would be irretrievably lost in the development process.

POINT ALLOCATION

2 Potential Planning & Design Points

ACTIONS & TARGETS

To achieve points, comply with the following:

- Conform with local zoning regulations; AND
- Projects should not be implemented on the following sites:
  - Prime farmland (as designated by the United State Department of Agriculture in the United States Code of Federal Regulations, Title 7, Volume 6, Parts 400 to 699, Section 657.5, citation 657.5 –or as updated in the Addendum); AND/OR
  - Parklands and designated open space; AND/OR
  - Sites within 100 feet of wetlands as defined by the US Army Corps of Engineers; AND/OR
  - Sites within 100 feet of documented habitat for species on Federal or California Endangered and Threatened Species Lists; AND/OR
  - Previously undeveloped land within 50 feet of a water body; AND/OR
  - Previously undeveloped land whose elevation is less than 5 feet above the level of the 100-year floodplain as defined by Federal Emergency Management Agency (FEMA); AND/OR
  - Sites in an Earthquake Fault Zone according to Alquist-Priolo Earthquake Fault Zone Maps; AND/OR
  - Sites in Liquefaction Zones or Landslide Zones according to the California Geological Survey Seismic Hazard Zonation Program; AND/OR
  - Sites within Very High Fire Hazard Severity Zones as designated by the California Department of Forestry and Fire Protection (when available).

BENEFITS

- Limits environmental impact from development.
- Encourages infill development.
- Provides a higher likelihood of public support and expedited public review process.
- Minimizes time and budget allotted to permitting.
- Avoids or minimizes mitigation measures.
- Limits Change Orders and Stop Work incidents associated with permit conditions that could potentially increase project costs.

DOCUMENTATION

- Correspondence from applicable agencies that the project site is not in one of the categories listed; OR
- Narrative documentation along with pertinent maps and plans confirming that the project site is not in one of the categories listed.

PD2-GP-2 continued on next page.

PD2-GP-2 (cont.) General Planning: Avoid Development of Inappropriate Sites

TECHNICAL APPROACHES

- Practice infill development by building on a previously developed site or one close to existing infrastructure.
- Fulfill requirements with PD2-GP-3, Contaminated Site Redevelopment (applicable in many cases).
- Meet this requirement using the assistance of PD2-GP-5, Site Protection and Restoration.

ACKNOWLEDGMENTS

or as updated in the Addendum

- USGBC, 2005. LEED® for New Construction and Major Renovations Version 2.2, October.

PD2-GP-3 General Planning: Contaminated Site Redevelopment

INTENT

Develop on a site documented as contaminated by American Society for Testing and Materials (ASTM) E1903-97 Phase II Environmental Site Assessment OR classified as a Brownfield or contaminated site by a local, state or federal government agency, thereby reducing pressure on undeveloped land.

POINT ALLOCATION

3 Potential Planning & Design Points

ACTIONS & TARGETS

To achieve points, comply with the following:

- Develop on a site documented as contaminated by ASTM E1903-97 Phase II Environmental Site Assessment (see most recent Addendum) OR classified as a Brownfield or contaminated site by a local, state or federal government; AND
- When possible, use in-situ cleanup technologies to minimize site disturbance and reduce cleanup costs. In-situ technologies also avoid the environmental impacts associated with transport and disposal of contaminated soil to landfills; AND
- Remediate sites to the level required for intended and potential future use, which may include the use of institutional controls as part of the remediation strategy.

TECHNICAL APPROACHES

- Develop and implement Site Remediation Plan.
- Utilize Life Cycle Assessments to determine the best remediation alternative.
- Coordinate site development plans with remediation plans as appropriate.
- To minimize costs, pursue tax incentives, government grants, property-tax savings and legal protections (i.e., Expedited Remedial Action Program or Prospective Purchaser Agreements).

BENEFITS

- Preserves greenfields and undeveloped land.
- Increases land value of remediated land.
- Remediates damaged sites and prevents further environmental impact on natural habitats and resources.

DOCUMENTATION

- Provide documentation that the site is contaminated by means of an ASTM E1903-97 Phase II Environmental Site Assessment; OR
- Provide documentation that the site is designated as a Brownfield or contaminated site by a local, state or federal government agency; AND
- Provide a detailed narrative describing site contaminants and remediation efforts undertaken by the project.

ACKNOWLEDGMENTS

or as updated in the Addendum

- USGBC, 2005. LEED® for New Construction and Major Renovations Version 2.2, October.
- City of Chicago, O'Hare Modernization Program, 2003. Sustainable Design Manual, December.
- California Department of Toxic Substances Control Chemicals, 2001. Brown Fields Program Brochure, October. Data retrieved from http://www.dtsc.ca.gov/SiteCleanup/Brownfields/upload/SMP_Brownfields_Brochure.pdf

PD2-GP-4 General Planning: Community Education

INTENT

Through education and outreach efforts, engage and educate the community regarding LAWA's sustainability initiatives related to the project.

POINT ALLOCATION

3 Potential Planning & Design Points

ACTIONS & TARGETS

To achieve points, comply with the following:

- Develop and provide to the community a written Community Education and Outreach Program with goals for community participation related to the project (i.e., number of mailings to community, number of people from community attending meetings, number of written comments/community surveys received, contacts established, etc.). Include translations in other languages as appropriate.

TECHNICAL APPROACHES

- Coordinate with local schools to arrange for field trips or presentations for education on airport- and aviation-related issues.
- Host a seminar open to the community that provides education on airport- and aviation-related topics.
- Host a meeting or panel discussion for affected communities as an opportunity for questions and education about the project separate from the public hearing and include appropriate personnel.
- Develop and distribute press releases about specific LAWA projects and their sustainability feature(s).
- Encourage LAWA customers and vendors to participate in sustainability initiatives..
- Tap into LAWA employees as members of local community.
- Coordinate with LAWA's existing education programs at local schools.
- Produce training materials, flyers and press releases in languages other than English that will predominantly reach local community members.
- Coordinate communication with other LAWA projects and utilize information through other permitting processes (CEQA, NEPA and other environmental regulatory bodies).

BENEFITS

- Increases awareness of LAWA projects and allays concerns.
- Avoids misconceptions and incorrect information on LAWA projects.
- Enables identification and prioritization of potential conflicts.
- Avoids community opposition of projects and resulting delays in design and construction, Stop Work incidences, etc.
- Informs and engages the community in sustainability projects that benefit them.
- Establishes trust and emotional investment from the community in LAWA as local business, employer and source of revenue for community.

DOCUMENTATION

- Copy of the Community Education and Outreach Program.
- Press releases, print notices, flyers and other communication materials for the project.
- Outreach materials, community meeting minutes and attendance sheets.

PD2-GP-5 General Planning: Site Protection & Restoration

INTENT

Protect the site and restore wildlife habitat on previously developed sites.

POINT ALLOCATION

2 Potential Planning & Design Points

ACTIONS & TARGETS

To achieve points, comply with the following:

- OPTION 1: On new development sites, restrict site disturbance to within:
  - 40 feet of buildings; AND
  - 10 feet of surface walkways, patios, surface parking and utilities less than 12 inches underground; AND
  - 25 feet of constructed areas with permeable surfaces; OR
- OPTION 2: On previously developed sites, restore or protect a minimum of 50% of site area (excluding building footprint) with native vegetation (vegetated green roofs will count as restored area); OR
- OPTION 3: For the site, arrange to mitigate wildlife habitat within Los Angeles County at a ratio of 2:1 mitigated area to site area. This can be direct mitigation (i.e., investing in a mitigation bank) or indirect mitigation by contributing funds to a land conservation organization.

TECHNICAL APPROACHES

- Perform a topographical analysis of the site. Strive to maintain natural topographic configuration.
- Identify landscape features for preservation during site design. Design your project around these features.
- Preserve natural water features and wetlands on the site as appropriate. These features provide excellent wildlife habitat, cooling properties and aesthetic benefits.
- Introduce drainage features as part of development if site is previously developed and has no natural drainage features.
- Create detailed construction site work plan showing staging areas, vehicular facilities, temporary structures, erosion/sedimentation control, etc.
- Use “just-in-time” delivery of materials to reduce staging requirements.
- Use clean-cut or trenchless technology when installing utility conduits.
- Give preference to off-site, prefabricated assemblies, which avoid the need for on-site fabrication equipment areas.
- Limit traffic and staging locations to areas that will be paved.

BENEFITS

- Minimizes need for sedimentation and erosion control measures.
- Preserves existing vegetation, which eliminates the cost and the need for re-vegetation.
- On-site natural areas improve site aesthetics.
- Strategic plantings can shade buildings and reduce cooling costs.
- Shading of parking lots can reduce heat island effect.
- Green roof options can improve stormwater management, habitat quality and energy performance in urban areas.

DOCUMENTATION

- For sites:
  - Provide narrative regarding approach to achieving this goal, including special site attributes or challenges.
- For Option 1:
  - Provide site plan clearly showing limits of disturbance and development.
  - Obtain no-build covenant for restored areas.
- For Option 2:
  - Provide a site plan that clearly shows areas of restored vegetation.
  - Provide a landscaping plan showing locations and types of materials used.
  - Obtain no-build covenant for restored areas.

PD2-GP-5 continued on next page.

PD2-GP-5 (CONT.) General Planning: Site Protection & Restoration

TECHNICAL APPROACHES (CONT.)

- Give preference to indigenous plants that provide food, shelter or breeding/nesting habitat to wildlife, as appropriate, when restoring habitat.
- Restore riparian vegetation to filter or treat stormwater if site is on previously developed waterfront.
- Design buildings so that wildlife habitat is visible and accessible to building occupants.
- Strive to preserve habitat as close as possible to the project site, and to preserve similar habitat at the project site if pursuing mitigation option. Mitigation is most valuable when it closely mimics the original habitat.
- Exceed the local zoning requirements.
- Provide open space area(s) that are equal to or greater than the development area.
- Plant vegetation on-site to replace disturbed site areas.
- Plan vegetation off-site to replace disturbed site areas.
- Donate money to an organization that plants trees/vegetation.

DOCUMENTATION (CONT.)

- For Option 3:
  - Provide documentation that arrangements have been completed to mitigate wildlife habitat at a ratio of 2:1, from a mitigation bank or confirmation from a conservation organization that funds were received in an appropriate amount that will be used to preserve habitat at the required ratio.

ACKNOWLEDGMENTS

or as updated in the Addendum

- USGBC, 2005. LEED® for New Construction and Major Renovations Version 2.2, October.
- Poudre School District, CO, 2005. Sustainable Design Guidelines, June, Data retrieved from http://www.psdschools.org/services/operations/planningdesign/resources.aspx
- Pentagon Renovation and Construction Office and Pennsylvania State University, 2004. Field Guide for Sustainable Construction, June.

PD2-GP-6 General Planning: Integrated Vegetation & Wildlife Management

INTENT

Manage vegetation and wildlife hazards in an integrated, environmentally responsible way while complying with FAA standards.

POINT ALLOCATION

2 Potential Planning & Design Points

ACTIONS & TARGETS

To achieve points, comply with the following:

- Prepare a site-specific Integrated Vegetation and Wildlife Management Plan; AND
- If project is located on the airside, comply with existing FAA-approved, airport-wide Wildlife Hazard Mitigation Plan and Vegetation Management Plan.

TECHNICAL APPROACHES

- Manage airfield sites to prevent use by hazardous wildlife.
- Choose vegetation that does not attract hazardous wildlife when planting. Check the website in Acknowledgements for results from an ongoing research and development project, sponsored by the FAA, investigating vegetative wildlife attractants at airports.
- Favor long-term vegetation management for meadow or shrubs over periodic tree cutting in areas where trees are undesirable.
- Avoid use of pesticides and herbicides whenever possible.
- Avoid creation of open water features on or near airfield sites. For stormwater management, consider use of perforated underground drains or dry wells to provide infiltration.
- In areas with height restriction, use low growth plants and trees.

BENEFITS

- Creates synergy between vegetation strategies and wildlife management plans.
- Minimizes costs associated with wildlife and vegetation hazard mitigation.
- Avoids unintended consequences stemming from uncoordinated vegetation and wildlife management.
- Minimizes permits needed and associated costs and delays.
- Where feasible, protects non-hazardous rare wildlife on airfield sites.
- Improves airport safety.

DOCUMENTATION

- Site-specific Integrated Vegetation and Wildlife Management Plan

PD2-GP-6 continued on next page.

PD2-GP-6 (CONT.) General Planning: Integrated Vegetation & Wildlife Management

DOCUMENTATION (CONT.)

- The following topics must be addressed in the Plan:
  - Site-specific or project-specific aspects.
  - Specific vegetation management and wildlife management methods.
  - Discuss how wildlife and vegetation management were integrated.
  - Discuss compliance with existing airport-wide Vegetation Management Plan and Wildlife Hazard Mitigation Plan.
  - Yearly Operating Plans for at least five years following construction.
- If rare wildlife or plant habitat is present at the airport, address how habitat will be protected, or why habitat cannot be protected.

ACKNOWLEDGMENTS

or as updated in the Addendum

- Embry Riddle Aeronautical University. Data retrieved from http://wildlife.pr.erau.edu/RandD/current_projects.html#habitat_management

PD2-GP-7 General Planning: Integrate Sustainability into the Airport Master Plan

INTENT

Incorporate a sustainable approach to the future management and development of the airport by including airport sustainability during preliminary planning of projects or during future airports planning.

POINT ALLOCATION

3 Potential Planning & Design Points

ACTIONS & TARGETS

To achieve points, comply with the following:

- Outline specific actions in the Airport Master Plan to integrate sustainability into the management and development of the airport over the 20-year planning period; AND
- Include objectives that simultaneously achieve excellence and economic growth, social responsibility and environmental stewardship in the Airport Master Plan; AND
- Focus on sustainability as a major component of the Airport Master Plan; AND
- Include sustainability criteria as a factor when analyzing alternatives; AND
- Review projects with the express intent of evaluating their level of sustainability during the master planning process; AND
- Provide a thorough appraisal of development alternatives to consider adverse environmental, social and economic impacts and provide mitigation options.

TECHNICAL APPROACHES

- Work with airport staff, tenants, consultants, sub- consultants, regulatory agencies and community groups to develop achievable and sustainability-focused project goals.
- Anticipate future needs and identify opportunities to implement sustainable operational and development programs to meet these needs.
- Incorporate a chapter addressing sustainability into the Airport Master Plan.
- Include on-site generation of renewable energy.
- Develop a material 'Black List', which will include those that cause harm to the environment and human health and should be avoided, if possible.
- Develop a strategy to involve tenants and aircraft operators in meeting overall sustainability strategies such as GHG emissions or waste reductions.
- Evaluate ways in which sustainable airport development can benefit the local community.

BENEFITS

- Provides a framework for integrating sustainability throughout the airport's operations.
- Ensures that airport operations and expansions occur with minimal adverse environmental, social and economic impacts.
- Promotes environmental awareness among airport employees, tenants and operators.
- Provides an outline and implementation action plan for a range of sustainability elements for the airport with designated timeframes.
- Provides a positive, proactive approach to implementing future sustainable actions and promotes the airport and community as environmentally aware.
- Encourages sustainable growth at airports.
- Provides a positive public relations opportunity.

DOCUMENTATION

- Completed sustainability chapter included in the Airport Master Plan; OR
- Completed sustainability sections in existing chapters of the Airport Master Plan.

PD3-AP-1 Airside Planning: Exterior Noise & Acoustical Control (Aircraft)

INTENT

Develop acoustical control measures during the planning phases regarding runways, taxiways and aircraft maintenance facilities to reduce exterior noise levels from aircraft noise sources.

POINT ALLOCATION

2 Potential Planning & Design Points

ACTIONS & TARGETS

To meet requirements, comply with the following:

- Table 1 describes compatible land use information for several land uses as a function of Yearly Day-Night Average Sound Level (YDNL) values according to Federal Aviation Regulation, Part 150, Appendix A. (See most recent Addendum). Use this table to determine the extent of noise impact around the airport by developing noise exposure maps in accordance with federal aviation regulations. In those areas where YDNL values are 65 YDNL or greater, the airport operator shall identify land uses and determine land use compatibility in accordance with the standards and procedures of Part 150, Appendix A; AND
- Projects affecting the movement of aircraft on the ground or their flight tracks through the air should be designed and constructed to achieve the target noise levels and land use compatibility standards established in Table 1. If local or county noise standards are more stringent than those presented in Table 1 then they will take precedence; AND
- FAA Order 1050.1E, Environmental Impacts: Policies and Procedures, (see most recent Addendum) defines the threshold of "significant impact" for evaluating a proposed airport development project as: if a parcel of noise-sensitive land use is exposed to a project-related increase in noise level of 1.4 dB or more DNL, and that location lies within the DNL 65 noise contour for the "with action" condition, the location is considered to be significantly impacted by noise and must be identified as such in environmental evaluations. Incompatible land uses include residences, schools, hospitals, places of worship and other uses as specified in Table 1.

TECHNICAL APPROACHES

- Coordinate with the existing sound insulation program for 9,000 residences within the DNL 65 contour (as defined in the most recent Master Plan) near LAX and Van Nuys Airports as previously adopted by LAWA.

BENEFITS

- Reduces overall exterior noise levels from aircraft sources.
- Avoids unnecessary redesign and construction delays that could potentially increase project costs.
- Improves the ambient noise quality for nearby affected land uses of the completed project.

DOCUMENTATION

- Noise contours using FAA's Integrated Noise Model. The 75, 70 and 65 DNL contours must be shown at a minimum.
- Documentation showing that incompatible land uses are not located within the DNL 65 contour.

ACKNOWLEDGMENTS

or as updated in the Addendum

- Federal Aviation Regulations. Part 150, Appendix A.
- Federal Aviation Administration, 2004, Order 1050.1E, Environmental Impacts: Policies and Procedures, June.

Table 1 follows

Table 1
Land Use Compatibility with Yearly Day-night Average Sound

Land Use	Yearly Day-Night Average Sound Level (L_{dn}) in Decibels					
	<65	65 - 70	70 - 75	75 - 80	80 - 85	>85
■ Residential						
Residential, other than mobile homes and transient lodgings	Y	N (1)	N (1)	N	N	N
Mobile home parks	Y	N	N	N	N	N
Transient lodgings	Y	N (1)	N (1)	N (1)	N	N
Public Use						
Schools	Y	N (1)	N (1)	N	N	N
Hospitals, nursing homes	Y	25	30	N	N	N
Churches, auditoriums and concert halls	Y	25	30	N	N	N
Government services	Y	Y	25	30	N	N
Transportation	Y	Y	Y (2)	Y (3)	Y (4)	Y (4)
Parking	Y	Y	Y (2)	Y (3)	Y (4)	N
Commercial Use						
Offices, business and professional	Y	Y	25	30	N	N
Wholesale and retail - building materials, hardware and farm equipment	Y	Y	Y (2)	Y (3)	Y (4)	N
Retail trade - general	Y	Y	25	30	N	N
Utilities	Y	Y	Y (2)	Y (3)	Y (4)	N
Communication	Y	Y	25	30	N	N
Manufacturing and Production						
Manufacturing, general	Y	Y	Y (2)	Y (3)	Y (4)	N
Photographic and optical	Y	Y	25	30	N	N
Agriculture (except livestock)) and forestry	Y	Y	Y (7)	Y (8)	Y (8)	Y (8)
Livestock farming and breeding	Y	Y (6)	Y (7)	N	N	N
Mining and fishing, resource production and extraction	Y	Y (6)	Y	Y	Y	Y
Recreational						
Outdoor sports arenas and spectator sports	Y	Y (5)	Y (5)	N	N	N
Outdoor music shells, amphitheaters	Y	N	N	N	N	N
Nature exhibits and zoos	Y	Y	N	N	N	N
Amusements, parks, resorts and camps	Y	Y	Y	N	N	N
Golf courses, riding stables and water recreation	Y	Y	25	30	N	N

Numbers in parenthesis refer to notes; see continuation of Table 1 for notes and key on next page.

Table 1
Land Use Compatibility with Yearly Day-night Average Sound (cont.)

Key to Table 1	
Y (yes)	*Land Use and related structures compatible without restrictions.*
N (No)	*Land Use and related structures are not compatible and should be prohibited.*
NLR	*Noise Level Reduction (outdoor to indoor) to be achieved through incorporation of noise attenuation into the design and construction of the structure.*
25, 30 or 35	*Land Use and related structures generally compatible; measures to achieve NLR of 25, 30 or 35 dB must be incorporated into design and construction of structure.*
Notes to Table 1	
(1)	*Where the community determines that residential or school uses must be allowed, measures to achieve outdoor to indoor Noise Level Reduction (NLR) of at least 25 dB and 30 dB should be incorporated into building codes and be considered in individual approvals. Normal residential construction can be expected to provide a NLR of 20 dB, thus, the reduction requirements are often stated at 5, 10 or 15 dB over standard construction and normally assume mechanical ventilation and closed windows year round. However, the use of NLR criteria will not eliminate outdoor noise problems.*
(2)	*Measures to achieve NLR of 25 dB must be incorporated into the design and construction of portions of these buildings where the public is received, office areas, noise sensitive areas or where the normal noise level is low.*
(3)	*Measures to achieve NLR of 30 dB must be incorporated into the design and construction of portions of these buildings where the public is received, office areas, noise sensitive areas or where the normal noise level is low.*
(4)	*Measures to achieve NLR of 35 dB must be incorporated into the design and construction of portions of these buildings where the public is received, office areas, noise sensitive areas or where the normal noise level is low.*
(5)	*Land use compatible provided special sound reinforcement systems are installed.*
(6)	*Residential buildings require an NLR of 25.*
(7)	*Residential buildings require an NLR of 30.*
(8)	*Residential buildings not permitted.*

The designations contained in this table do not constitute a Federal determination that the use of land covered by the program is acceptable or unacceptable under Federal, State or local law. The responsibility for determining the acceptable and permissible land uses and the relationship between specific properties and specific noise contours rests with the local authorities. FAA determinations under Part 150 are not intended to substitute Federally determined land uses for those determined to be appropriate by local authorities in response to locally determined needs and values in achieving noise compatible land uses.

PD3-AP-2 Airside Planning: Design Runways, Taxiways & Terminals to Reduce Taxiing Distances & Times

INTENT

Mandate that new or modified airside facilities be planned with the purpose of reducing taxi distances and taxi times to the maximum extent practicable to reduce emissions of greenhouse gases and criteria and hazardous air pollutants. This requirement extends to the planning and design or redesign of runways, taxiways and terminals.

ACTIONS & TARGETS

To achieve points, comply with the following:

- In the planning stages, design runway and taxiway layouts in a manner that will result in the most efficient movement of aircraft and the reduction of taxi/idle time; AND
- In the planning stages, design the locations and layouts of new terminals and gates in a manner that minimizes taxi distances; AND
- A stated objective of new or modified airside facilities shall be to maximize the efficient layout of airside facilities with the express purpose of minimizing taxi distances and taxi times. This objective will be communicated in requests for proposals related to runway, taxiway and terminal planning and design projects; AND
- Prior to initiating the planning of new or modified airside facilities, convene a meeting of the planning team, to include airport staff and consultants. One of the purposes of this meeting will be to notify the planning team of the requirement to minimize taxi distances and taxi times as part of project planning and design; AND
- During airside facility planning, conduct simulation modeling of various design concepts to quantify the taxi/idle times. Use time-in-mode as a criterion for selecting concepts for further consideration.

TECHNICAL APPROACHES

- Design runway and taxiway systems such that aircraft are not required to cross a runway after landing, to the extent practicable.
- Design parallel runways with sufficient separation to preclude the need for aircraft to hold for other aircraft, to the extent practicable.
- Design runway systems with high-speed exits, end-around taxiways, centerline taxiways or other facilities to maximize the efficient flow of aircraft.

POINT ALLOCATION

2 Potential Planning & Design Points

BENEFITS

- Maximizes utilization of airport capacity.
- Increases airfield safety.
- Proper design of runways, taxiways and terminals can reduce the distance an airplane must taxi from its landing runway to its gate. As the taxiing mode yields high pollutant emissions, reducing taxiing distance will reduce these emissions.
- An efficient airfield will enable aircraft to flow better and will reduce taxi and idle time, thereby reducing air emissions.
- Reduced taxi/idle time will improve the passenger experience by reducing flight times.
- Reduced taxi/idle time will reduce fuel consumption, resulting in cost savings to airlines.

DOCUMENTATION

- Provide the results of the simulation modeling of various design concepts to quantify the taxi/idle times.
- Once an alternative(s) has been selected, conduct simulation modeling of the future airfield with and without the project to determine if taxi/idle times would be reduced because of the new or redesigned facilities.

PD3-AP-3 Airside Planning: Design Airside Layout to Reduce Aircraft Delay

INTENT

Mandate that new or modified airside layout be planned and designed with the purpose of reducing aircraft delay in order to reduce emissions of greenhouse gases and criteria and hazardous air pollutants.

ACTIONS & TARGETS

To achieve points, comply with the following:

- To the extent practicable, plan new or modified airside facilities to provide ample room for the efficient movement and holding of aircraft; AND
- A stated objective of new or modified airside facilities shall be to maximize the efficient layout of airside facilities with the express purpose of reducing aircraft delay. This objective will be communicated in requirements for proposals related to airfield planning design projects; AND
- Prior to initiating the planning of new or modified airside facilities, convene a meeting of the planning team, to include airport staff and consultants. One of the purposes of this meeting will be to notify the planning team of the requirement to reduce aircraft delay as part of project planning and design.

TECHNICAL APPROACHES

- Ensure that the airfield layout provides room for an aircraft to hold without delaying other aircraft.
- Provide doublewide taxiways to facilitate the movement of aircraft, where practicable.
- Provide sufficient ramp area to reduce ramp congestion, where practicable.

POINT ALLOCATION

2 Potential Planning & Design Points

BENEFITS

- Maximizes utilization of airport capacity.
- Increases airfield safety.
- Proper planning and design of airside layout can reduce aircraft delay, thereby reducing air emissions.
- An efficient airside will enable aircraft to flow better and will reduce aircraft delay, thereby reducing air emissions.
- Reduced aircraft delay will improve the passenger experience by reducing flight times.
- Reduced aircraft delay will reduce fuel consumption, resulting in cost savings to airlines.

DOCUMENTATION

- During airfield layout planning, conduct simulation modeling of various airport concepts to quantify delay times associated with each. Use delay as a criterion for selecting concepts for further consideration.
- Once an alternative(s) has been selected, conduct simulation modeling of the future airfield with and without the projects to determine if taxi/idle times would be reduced because of the new or redesigned facilities.

PD3-AP-4 Airside Planning: Provide Infrastructure for Alternatively-Fueled GSE in Airside Design

INTENT

As part of airside planning and design projects, provide facilities for alternative-fueled Ground Service Equipment (GSE).

POINT ALLOCATION

3 Potential Planning & Design Points

ACTIONS & TARGETS

To achieve points, comply with the following:

- As part of new or renovated airside facility projects, ensure that the planning and design phases provide facilities for alternative-fueled GSE. This could include electric GSE charging stations or alternative fuel dispensing facilities proximate to gate and cargo areas; AND
- Retrofit existing airside areas with alternative energy fueling stations for GSE.

BENEFITS

- Alternative-fueled GSE reduces air emissions, particularly if GSE are powered by electricity.
- Electric GSE reduces environmental risks, particularly the risk of surface fuel spills.
- Potentially lower fuel and operational costs.

TECHNICAL APPROACHES

- Work with airlines, other tenants and local air quality regulatory agencies, as appropriate, to reach agreement concerning conversion of GSE to electricity or alternative fuels.

DOCUMENTATION

- Report upon completion of GSE fueling conversion at one or more terminals.

PD3-AP-5 Airside Planning: Provide Infrastructure Planning for Hydrant Fueling for Aircraft

INTENT

Plan for hydrant fueling for aircraft parked at airport gates.

POINT ALLOCATION

2 Potential Planning & Design Points

ACTIONS & TARGETS

To achieve points, comply with the following:

- As part of new or renovated terminal facility projects, ensure that planning and design allows for the inclusion of hydrant fueling systems; AND
- Retrofit existing terminal areas with hydrant fueling systems with proper leak detection.

TECHNICAL APPROACHES

- Work with tenant airlines and fuel providers to develop a privately owned fuel consortium for airports where hydrant fueling does not currently exist.
- The hydrant fuel system will have leak detection that minimizes the risk of leaks from underground piping.

BENEFITS

- Hydrant fueling systems substantially reduce or eliminate on-airport fuel truck operations and their associated air emissions.
- The reduction in fuel trucks results in increased airfield safety.
- Elimination of refueling by trucks reduces environmental risks, including surface fuel spills.
- Modern hydrant systems are designed with environmental safeguards, including secondary containment, cathodic protection, leak detection, computerized tank overfill and inventory gauging systems, spill containment and fuel reclamation management, which itself reduces the risk of fuel spills from fueling operations.

DOCUMENTATION

- Report upon completion of hydrant fueling system construction or expansion including the leak detection system.

PD4-LP-1 Landside Planning: Exterior Noise & Acoustical Control (Non-Aircraft)

INTENT

Develop acoustical control measures during the planning and design phases to reduce non-aircraft related exterior noise levels from stationary and mobile noise sources.

ACTIONS & TARGETS

To meet requirements, comply with the following:

- Stationary sources shall be designed and constructed to achieve the target noise levels established in Table 1. Local or county noise standards that are more stringent than those present in Table 1 will take precedence; AND
- Mobile sources shall achieve the target noise levels established in Table 2. Local or county noise standards that are more stringent that those presented in Table 2 will take precedence; AND
- Builders to use soundproofing and building and equipment design features recommended in the Noise and Acoustical Quality Control Plan; OR
- A Certified Acoustical Engineer will prepare and implement a Noise and Acoustical Quality Control Plan. The plan will include a baseline noise measurement study, noise modeling analysis and recommended noise mitigation measures; OR
- A third party Certified Acoustical Engineer to conduct an independent noise measurement audit within one month of completion of the finished project using American Society of Testing and Materials (ASTM) and Federal Highway Administration (FHWA) procedures referenced in the Acknowledgements section. (See most recent Addendum).

TECHNICAL APPROACHES

- Install acoustical enclosures, silencers, barriers and earthen berms; replace noisier equipment with quieter units, mufflers and wrap exterior HVAC ductwork with sound-deadening materials; etc.
- Conduct an independent exterior noise level measurements audit for the completed project.
- Conduct a noise modeling study.
- Utilize sound barriers.
- Plan and design locations of mechanical equipment and other sources of noise away from exterior spaces designed for use.
- Use rubberized pavements or innovative pavement treatments to reduce noise resulting from traffic.

POINT ALLOCATION

4 Potential Planning & Design Points
Additional points will be awarded for:

- Preparing/developing a Noise and Acoustical Quality Control Plan = 1 pt
- Performing and independent noise measurement audit = 1 pt

BENEFITS

- Reduces overall exterior noise levels from stationary and mobile sources.
- Improves the ambient noise quality for nearby affected land uses of the completed project.
- Reduces noise impacts to neighboring communities.

DOCUMENTATION

- Noise and Acoustical Quality Control Plan.
- A technical report provided by a Certified Acoustical Engineer summarizing the result of the exterior noise level measurements and comparison to target exterior noise levels. If necessary, provide documentation on additional noise mitigation measures to meet the recommended noise levels.

PD2-LP-1 continued on next page.

PD4-LP-1 (CONT.) Landside Planning: Exterior Noise & Acoustical Control (Non-Aircraft)

ACKNOWLEDGMENTS

or as updated in the Addendum

- ASTM, 2000. ASTM E1014-84: Standard Guide for Measurement of Outdoor A-Weighted Sound Levels.
- USDOT, 1996. Measurement of Highway-Related Noise, FHWA-PD-96-046 DOT-VNTSC-FHWA-96-5, May.

Table 1
Target Exterior Noise Levels for Stationary Sources

Affected Land Use	Daytime (7 am - 10 pm) L_{eq} Level (dBA)	Nighttime (10 pm - 7 am) L_{eq} Level (dBA)
Residential	55	45
Office Commercial	55	55
Other Commercial	65	55
Light Industrial	70	60
Heavy Industrial	70	70

Notes:

- L_{eq} = Equivalent noise level.
- Target noise levels are based on a cumulative period of 30 minutes or more.
- Noise measurements are taken at the nearest property boundary of the affected land use.

Table 2
Target Exterior Noise Levels for Adjacent Mobile Sources

Affected Land Use	L_{dn} or CNEL dBA	
	Interior	Exterior
Residential, Hotel & Motel	45	60
Commercial	45	65
Institutional/Public	45	65
Open Space	—	65

Notes:

- L_{eq} = (day-night noise level). The average noise level during a 24-hour day obtained by adding 10 decibels to hourly noise levels measured during the night (10 PM to 7 AM). Ldn takes into account the lower tolerance of people for noise during nighttime periods.
- CNEL = (Community Noise Equivalent Level). The average level during a 24-hour day obtained by adding an additional 5 decibels to hourly noise levels in the evening (7 PM to 10 PM) and 10 decibels to hourly noise levels measured during the night (10 pm to 7 am).
- Noise measurements are taken at the nearest property boundary of the affected land use.

PD4-LP-2 Landside Planning: Minimize Roadway Congestion

INTENT

Minimize emissions related to roadway congestion and idling automobiles.

POINT ALLOCATION

2 Potential Planning & Design Points

ACTIONS & TARGETS

To achieve points, comply with the following:

- Provide a waiting area for vehicles that are conducting passenger pick-up; AND
- Create a policy to require stopped vehicles in waiting and loading areas to reduce idling and/or turn engines off; AND
- Use traffic flow monitoring and modeling for planning at the beginning of the planning and design process.

TECHNICAL APPROACHES

- Provide a waiting area for vehicles that are conducting passenger pick-up.
- Provide remote check-in facilities.
- Use traffic flow monitoring and modeling for planning at the beginning of the planning and design process.
- Consolidate similar facilities (such as rental car facilities).
- Use Zero Emission Vehicle (ZEV) shuttle transportation to minimize congestion on terminal roads.
- Use an off-site delivery consolidation center to reduce delivery traffic and enact minimum delivery volume restrictions to minimize number of daily deliveries on airport infrastructure. (See ACI case study for Heathrow Airport in the most recent Addendum).

BENEFITS

- Improves local air quality.
- Decreases auto-related carbon emissions.
- Improves driver satisfaction.
- Decreases local fuel consumption.
- Decreases future liability for traffic issues.

DOCUMENTATION

- Confirmation of inclusion of vehicle waiting area and regulations requiring engine shutoff for waiting vehicles.
- Provide a copy of the reduced idling policy.
- Verifiable documentation of education and/or the installation of remote check-in infrastructure.

PD4-LP-3 Landside Planning: Public Transportation Access

INTENT

Reduce personal vehicle usage and encourage growth and preferential use of efficient public transportation.

ACTIONS & TARGETS

To achieve points, comply with the following:

- Provide projections to provide public transportation to 5% of airport users; AND
- OPTION 1: Provide or enhance public rail and bus access convenient to terminal main entrance and exits; OR
- OPTION 2: Provide or enhance infrastructure for a free shuttle service convenient to terminal main entrance and exits, departing every 10 minutes.

TECHNICAL APPROACHES

- Prioritize mass transit over other transportation modes.
- Plan for and implement strategies aimed at reducing parking needs and improving efficiency of access.
- Communicate with local and regional transit authorities to advance multiple transit connection opportunities.
- Coordinate with performance standard PD4-LP-2, Minimize Roadway Congestion.
- Design for the latest revision of LEED® standards. (See most recent Addendum).
- Use a 10-year project projection for public transportation plans.
- Plan and design walking paths from the public transit stops.

POINT ALLOCATION

3 Potential Planning & Design Points

BENEFITS

- Reduces carbon emissions.
- Increases efficiency of land development.
- Reduces land development impacts from vehicle use.
- Reduces environmental impacts from oil extraction and refinement.
- Minimizes traffic congestion.
- Reduces air and water pollution from combustion process.
- Reduces parking space requirements.
- Increases local public transportation opportunities.

DOCUMENTATION

- Provide project drawings showing distance to public transportation access and distance to taxi and auto pick-up/drop-off locations.
- Provide projections of airport use and plans to accommodate 5% of users through public transit.

PD4-LP-4 Landside Planning: Bicycle Storage

INTENT

Increase bicycle and other human-powered vehicle (HPV) use in order to reduce personal vehicle usage.

ACTIONS & TARGETS

To achieve points, comply with the following:

- Provide covered centralized facility(s) for secure bicycle storage (within 100 yards of a building entrance) designed to accommodate 10% of building users measured at peak periods; AND
- Include in site plans the ability to expand bicycle facilities in future years; AND
- Develop a transportation plan including comprehensive bike lane and trail requirements to provide safe, efficient access to and around the facility by bike.

TECHNICAL APPROACHES

- Provide safe bicycle lanes/paths.
- Provide a centralized facility(s) for secure bicycle storage with convenient changing/showering areas.
- Meet and/or exceed requirements of the most recent revision of LEED® standards. (See most recent Addendum).
- Emphasize program for employees and tenants but make facilities available to passengers.
- Provide signs in public areas that bicycling facilities are available.
- Provide changing/showering facilities (in the building or within 100 yards of an entrance) designed to accommodate 1% of building users measured at peak periods.
- Include plans for future expansion of changing/showering facilities to match growth.

POINT ALLOCATION

2 Potential Planning & Design Points

BENEFITS

- Reduces carbon emissions.
- Reduces natural resources consumption.
- Reduces environmental impacts from oil extraction and refinement.
- Reduces land development impacts from automobile use and infrastructure.
- Minimizes traffic congestion.
- Reduces air and water pollution from combustion process.
- Reduces parking space requirements.
- Reduces nation's dependency on foreign oil.

DOCUMENTATION

- Provide project drawings showing location and capacity of bicycle storage areas as well as areas planned for future expansion.
- Provide calculations of peak building use and compare to bike storage capacity.
- Provide a narrative of the transportation plan's inclusion of safe cycling measures.

PD4-LP-5 Landside Planning: Sustainable Parking Facilities

INTENT

Reduce single occupancy vehicle usage and associated pollution by increasing the ease of using multiple-occupant vehicles and low-emission vehicles (LEV) for transportation to/from the airport.

ACTIONS & TARGETS

To achieve points, comply with the following:

- Provide preferred parking for carpools and vanpools for a minimum of 10% of total parking spaces provided for employees, tenants and customers; AND
- Include additional preferred parking for alternative fuel or low-emissions vehicles (use California Air Resources Board (CARB) LEV definition; see most recent Addendum) exceeding 10% of total parking spaces; AND
- Do not allow parking capacity to exceed local zoning requirements; AND
- Reduce the number of parking spaces and do not increase the capacity of existing parking facilities.

TECHNICAL APPROACHES

- Plan for the development of preferred parking and/or lot locations for alternative fuel rental vehicles, carpools and vanpools.
- Reduce parking capacity to encourage public transportation.
- Design to exceed recent revision of LEED® standards. (See most recent Addendum).

POINT ALLOCATION

2 Potential Planning & Design Points

BENEFITS

- Reduces carbon emissions.
- Reduces natural resources consumption.
- Reduces environmental impacts from oil extraction and refinement.
- Reduces land development impacts from automobile.
- Minimizes traffic congestion.
- Reduces air and water pollution from combustion process.
- Reduces parking space requirements.
- Reduces heat island effect from parking lots.
- Encourages use of mass transit.

DOCUMENTATION

- Project drawings showing parking spaces and highlighting preferred areas set aside for carpools, vanpools and alternative fuel and zero emissions vehicles.
- Confirmation that no free parking areas will be designated.
- Confirmation that parking does not exceed zoning requirements.

PD4-LP-6 Landside Planning: Support Alternative Fuel Vehicles

INTENT

Reduce emissions from internal combustion engines. Support development and adoption of alternative fuel vehicles.

ACTIONS & TARGETS

To achieve points, comply with the following:

- Survey and study potential occupants to determine which alternative fuel type is in highest demand; AND
- Install at least one alternative fuel refueling station for public use; OR
- Increase the capacity of the existing alternative fuel refueling station.

TECHNICAL APPROACHES

- Consider planning for the use of ethanol-based gasoline, biodiesel, compressed natural gas, Hythane, hybrid electric, electric fuel cell or newly developed alternative fuel vehicles.
- Plan and design to enhance and support LAWA's existing programs for alternative fuel vehicles within the airport operations.
- To minimize costs, investigate tax or government credits for support of alternative fuel vehicles.
- Include fueling stations for alternative fuel vehicles.
- Survey current airport operations' alternative fuel use and plan to replace remaining conventional gasoline-based equipment with alternative fuel-based equipment.
- Plan and design based on most recent revision of LEED® standards. (See most recent Addendum).

POINT ALLOCATION

3 Potential Planning & Design Points

BENEFITS

- Reduces carbon emissions.
- Reduces natural resource consumption.
- Reduces environmental impacts from oil extraction and refinement.
- Reduces carbon footprint.
- Reduces air and water pollution from combustion process.
- Reduce nation's dependency on foreign oil.
- Increases use of alternative fuel vehicles.
- Reduces cost of alternative fuel vehicles.
- Expands alternative fuel infrastructure.

DOCUMENTATION

- Narrative documenting efforts to accommodate alternative fuel vehicles.

PD4-LP-7 Landside Planning: Planning for Future Land Use

INTENT

Anticipate and plan for future land use in the event of (a) future non-airport uses and/or (b) future changes within the airport. Maximize site flexibility for future uses.

POINT ALLOCATION

2 Potential Planning & Design Points

ACTIONS & TARGETS

To achieve points, comply with the following:

- Confirm that the design agrees with LAWA's existing Master Plan, specifically:
  - Include designs for scenarios ranging from airport property closure and site reuse to aggressive expansion; AND
  - Include suggestions to improve site environmental quality with future projects.

TECHNICAL APPROACHES

- Evaluate potential future uses for the land, structure and/or building components.
- Consider the future value of materials and systems during selection.
- Anticipate future needs.

BENEFITS

- Increases land value in the event of airport closure or sale.
- Decreases future costs to meet changing needs.
- Decreases environmental liability for future development, based on current site and circulation decisions also applying to future site opportunities.

DOCUMENTATION

- Provide information to verify that the design agrees with the existing Master Plan.

PD5-CC-1 Climate Change Adaptation Planning: Increased Temperature

INTENT

Prepare for impacts on airport infrastructure and operations resulting from increased surface temperatures associated with climate change.

POINT ALLOCATION

3 Potential Planning & Design Points

ACTIONS & TARGETS

To achieve points, comply with the following:

- Acquire and analyze available regional climate model data outputs specific to California to determine projected temperature changes. Coordinate with the LAWA project manager to determine if the most recent data is currently being used by LAWA as part of another project or initiative and, if so, coordinate analysis of the data; AND
- Using the regional climate model data, evaluate the likelihood of impacts specific to the airport; AND
- Plan and/or design infrastructure to minimize impacts on airport operations and infrastructure resulting from increased temperature.

TECHNICAL APPROACHES

- Consider the following impacts:
  - Increased energy demands for cooling.
  - Decrease in soil moisture causing subsidence beneath concrete structures.
  - Buckling of pavements.
  - Shorter service life of metal and pavements.
  - More frequent freeze-thaw cycles, resulting in frost heaves and potholes.
  - Loss of permafrost, undermining runways.
  - Decreased aircraft lift due to less dense atmosphere, resulting in runway restrictions or decreased aircraft loads.
  - Advanced equipment weathering.
  - Exacerbated air and water quality impacts.
  - Fuel performance impacts.

BENEFITS

- Avoids the costs associated with the repair and replacement of infrastructure.
- Minimizes costs associated with delayed or interrupted operations due to failed infrastructure.
- Improves airport safety.

DOCUMENTATION

- Summary of available regional climate model data.
- Assessment of likely impacts to the airport due to increased temperature.
- Summary of planning and design features to address climate change impacts related to increased surface temperature.

PD5-CC-1 continued on next page.

PD5-CC-1 (CONT.) Climate Change Adaptation Planning: Increased Temperature

TECHNICAL APPROACHES (CONT.)

- Consider the following planning and design elements:
  - Include energy efficiency and renewable energy measures and design for redundancy (coordinate with PD12-EC-3 Energy Systems Commissioning and PD12-EC-5 On-Site Alternative & Renewable Energy).
  - Design concrete structures for subsidence.
  - Select materials and equipment with high durability in high temperatures (coordinate with PD14-MR-2 Material Durability).
  - Utilize heat-resistant paving materials.
  - Extend runways.
- Coordinate with manufacturers to develop heat-resistant paving materials.
- Coordinate with aircraft manufacturers to determine specific impacts related to decreased lift, including future changes to materials to address this issue.
- Apply for funding to support design features for enhancing resiliency to climate impacts.
- Coordinate with water efficiency and stormwater management performance standards (PD6-SM-1 Prevent Downstream Erosion, PD6-SM-2 Provide Stormwater Treatment, PD8-WE-1 Water Management Plan, PD8-WE-2 Water Use Efficiency and PD8-WE-3 Water Reuse & Reclamation).

ACKNOWLEDGMENTS

or as updated in the Addendum

- California Energy Commission Publications - http://www.energy.ca.gov/publications/searchReports.php?pier_sub=GCC - Climate Monitoring, Analysis, and Modeling - Development
- US Climate Change Science Program - http://www.climatescience.gov/
- US Bureau of Reclamation and Lawrence Berkeley Lab - http://gdo-dcp.ucllnl.org/downscaled_cmip3_projections/dcpInterface.html
- Union of Concerned Scientists - http://www.ucsusa.org/global_warming/
- Transportation Research Board Special Report 290, January 2009 - http://onlinepubs.trb.org/onlinepubs/sr/sr290.pdf
- Heinz Center, Survey of Climate Change Adaptation Planning - http://www.heinzctr.org/publications/PDF/Adaptation_Report_ October_10_2007.pdf
- US Climate Change Science Program, Gulf Coast Study Phase I (page 265) - http://www.climatescience.gov / Library /sap/sap4-7/final-report/sap4-7-final-all.pdf
- Columbia Earth Institute, Climate Change & A Global City, 2001 – http://www.ccsr.columbia.edu
- Intergovernmental Panel on Climate Change (IPCC) Climate Change 2007 – 3rd & 4th Assessment Reports – http://www.ipcc.ch

PD5-CC-2 Climate Change Adaptation Planning: Severe Weather

INTENT

Prepare for impacts on airport infrastructure and airport operations due to changes in severe weather patterns associated with climate change, including prolonged drought, increased annual precipitation and/or increased frequency and intensity of storms.

POINT ALLOCATION

3 Potential Planning & Design Points

ACTIONS & TARGETS

To achieve points, comply with the following:

- Acquire and analyze available regional climate model data outputs specific to California to determine projected changes to severe weather patterns. Coordinate with the LAWA project manager to determine if the most recent data is currently being used by LAWA as part of another project or initiative and, if so, coordinate analysis of the data; AND
- Using the regional climate model data, evaluate the likelihood of impacts specific to the airport; AND
- Plan and/or design infrastructure to minimize impact on airport operations and infrastructure from severe weather.

TECHNICAL APPROACHES

- Consider the following impacts:
  - Increased precipitation resulting in flooding, increased stormwater runoff volume, decreased stormwater quality and increased need for navigation aids at general aviation airports.
  - Prolonged drought, resulting in water use restrictions and decreased visibility due to more frequent wildfires.
  - Increased storm frequency and intensity, resulting in damage to infrastructure and navigation aids, loss of power and flooding.
- Consider the following planning and design elements:
  - Increase capacity of stormwater conveyance and storage (e.g., design for 100-year and 500-year storms).
  - Install or improve stormwater treatment systems (coordinate with PD6-SM-2 Provide Stormwater Treatment).
  - Include rainwater harvesting and reuse systems (coordinate with PD8-WE-1 Water Management Plan).
  - Design for protection of navigation aids during severe weather.
  - Include energy efficiency and renewable energy measures and design for redundancy (coordinate with PD12-EC-3 Energy Optimization and PD12-EC-5 On-Site Alternative & Renewable Energy).
- Apply for funding to support design features for enhancing resiliency to climate impacts.

BENEFITS

- Avoids the costs associated with the repair and replacement of infrastructure.
- Minimizes erosion.
- Minimizes stormwater quality permit exceedances.
- Minimizes costs associated with delayed or interrupted operations due to failed infrastructure.
- Improves airport safety.

DOCUMENTATION

- Summary of available regional climate model data.
- Assessment of likely impacts to the airport due to severe weather.
- Summary of planning and design features to address climate change impacts related to severe weather.

PD5-CC-2 continued on next page.

PD5-CC-2 (CONT.) Climate Change Adaptation Planning: Severe Weather

ACKNOWLEDGMENTS

or as updated in the Addendum

- California Energy Commission Publications - http://www.energy.ca.gov/publications/searchReports.php?pier_sub=GCC - Climate Monitoring, Analysis, and Modeling - Development
- US Climate Change Science Program - http://www.climatescience.gov/
- US Bureau of Reclamation and Lawrence Berkeley Lab - http://gdo-dcp.ucllnl.org/downscaled_cmip3_projections/dcpInterface.html
- Union of Concerned Scientists - http://www.ucsusa.org/global_warming/
- Transportation Research Board Special Report 290, January 2009 - http://onlinepubs.trb.org/onlinepubs/sr/sr290.pdf
- Heinz Center, Survey of Climate Change Adaptation Planning - http://www.heinzctr.org/publications/PDF/Adaptation_Report_ October_10_2007.pdf
- US Climate Change Science Program, Gulf Coast Study Phase I (page 265) - http://www.climatescience.gov / Library /sap/sap4-7/final-report/sap4-7-final-all.pdf
- Columbia Earth Institute, Climate Change & A Global City, 2001
- Intergovernmental Panel on Climate Change (IPCC) Climate Change 2007 – 3rd & 4th Assessment Reports – http://www.ipcc.ch

PD5-CC-3 Climate Change Adaptation Planning: Sea Level Rise and Storm Surge

INTENT

Prepare for impacts on airport infrastructure and airport operations due to sea level rise and storm surge associated with climate change.

POINT ALLOCATION

3 Potential Planning & Design Points

ACTIONS & TARGETS

To achieve points, comply with the following:

- Acquire and analyze available regional climate model data outputs specific to California and sea level rise projections to determine expected magnitude of sea level rise and storm surge. Coordinate with the LAWA project manager to determine if the most recent data is currently being used by LAWA as part of another project or initiative and, if so, coordinate analysis of the data; AND
- Using the regional climate model data and projected sea level rise impacts, evaluate the likelihood of impacts specific to the airport; AND
- Plan and/or design infrastructure to minimize impact on airport operations and infrastructure from sea level rise and storm surge.

TECHNICAL APPROACHES

- Consider the following impacts:
  - Inundation of runways.
  - Increased coast erosion.
  - Salt water intrusion, including impacts to freshwater wetlands and equipment materials.
  - Increased airport closures and delays.
  - Designation of new boundaries for floodplains and coastal management zones.
- Consider the following planning and design elements:
  - Include protective dikes, containment walls and levees.
  - Elevate facilities and runways.
  - Increase capacity of stormwater conveyance and storage systems (e.g., design for 100-year and 500-year storms).
  - Select materials resistant to brackish and saline waters.
- Coordinate with regional agencies to plan for a synchronized response to sea level rise and storm surge.
- Apply for funding to support design features for enhancing resiliency to climate impacts.

BENEFITS

- Avoids the costs associated with the repair and replacement of infrastructure.
- Minimizes coastal erosion.
- Minimizes costs associated with delayed or interrupted operations due to failed infrastructure.
- Improves airport safety.

DOCUMENTATION

- Summary of available regional climate model data and sea level rise projections.
- Assessment of likely impacts to the airport due to sea level rise and storm surge.
- Summary of planning and design features to address climate change impacts related to sea level rise and storm surge.

PD5-CC-3 continued on next page.

PD5-CC-3 (CONT.) Climate Change Adaptation Planning: Sea Level Rise and Storm Surge

ACKNOWLEDGMENTS

or as updated in the Addendum

- California Energy Commission Publications - http://www.energy.ca.gov/publications/searchReports.php?pier_sub=GCC - Climate Monitoring, Analysis, and Modeling - Development
- US Climate Change Science Program - http://www.climatescience.gov/
- US Bureau of Reclamation and Lawrence Berkeley Lab - http://gdo-dcp.ucllnl.org/downscaled_cmip3_projections/dcpInterface.html
- Union of Concerned Scientists - http://www.ucsusa.org/global_warming/
- Transportation Research Board Special Report 290, January 2009 - http://onlinepubs.trb.org/onlinepubs/sr/sr290.pdf
- Heinz Center, Survey of Climate Change Adaptation Planning - http://www.heinzctr.org/publications/PDF/Adaptation_Report_ October_10_2007.pdf
- US Climate Change Science Program, Gulf Coast Study Phase I (page 265) - http://www.climatescience.gov / Library /sap/sap4-7/final-report/sap4-7-final-all.pdf
- Columbia Earth Institute, Climate Change & A Global City, 2001 – http://www.ccsr.columbia.edu
- Intergovernmental Panel on Climate Change (IPCC) Climate Change 2007 – 3rd & 4th Assessment Reports – http://www.ipcc.ch

PD5-CC-4 Climate Change Adaptation Planning: Ecosystem Changes

INTENT

Prepare for impacts on airport infrastructure and airport operations due to changing ecosystems associated with climate change.

POINT ALLOCATION

3 Potential Planning & Design Points

ACTIONS & TARGETS

To achieve points, comply with the following:

- Acquire and analyze available regional climate model data outputs specific to California and other resources to determine projected changes to ecosystems located on airport property, including wildlife changes. Coordinate with the LAWA project manager to determine if the most recent data is currently being used by LAWA as part of another project or initiative and, if so, coordinate analysis of the data; AND
- Using the regional climate model data and other references, evaluate the likelihood of impacts specific to the airport; AND
- Plan and/or design infrastructure to minimize impact on airport operations and infrastructure from ecosystem changes.

TECHNICAL APPROACHES

- Consider the following impacts:
  - Changes to wildlife migration patterns.
  - Loss of coastal wetland barriers and marshes, resulting in exacerbated storm surge.
  - Increased need for wetland protection.
  - Vegetation changes.
- Consider the following planning and design elements:
  - Create and protect coastal wetlands to protect against storm surge (coordinate with PD2-GP-5 Site protection & Restoration).
  - Develop an Integrated Vegetation and Wildlife Plan (PD2-GP-6 Integrated Vegetation & Wildlife Management).
- Apply for funding to support design features for enhancing resiliency to climate impacts.

BENEFITS

- Avoids the costs associated with the repair and replacement of infrastructure.
- Minimizes costs associated with delayed or interrupted operations due to failed infrastructure.
- Improves airport safety.

DOCUMENTATION

- List of references.
- Summary of available regional climate model data and projected changes to regional ecosystems.
- Assessment of likely impacts to the airport due to ecosystem changes.
- Summary of planning and design features to address climate change impacts related to ecosystem changes.

PD5-CC-4 continued on next page.

PD5-CC-4 (CONT.) Climate Change Adaptation Planning: Ecosystem Changes

ACKNOWLEDGMENTS

or as updated in the Addendum

- California Energy Commission Publications - http://www.energy.ca.gov/publications/searchReports.php?pier_sub=GCC - Climate Monitoring, Analysis, and Modeling - Development
- US Climate Change Science Program - http://www.climatescience.gov/
- US Bureau of Reclamation and Lawrence Berkeley Lab - http://gdo-dcp.ucllnl.org/downscaled_cmip3_projections/dcpInterface.html
- Union of Concerned Scientists - http://www.ucsusa.org/global_warming/
- Transportation Research Board Special Report 290, January 2009 - http://onlinepubs.trb.org/onlinepubs/sr/sr290.pdf
- Heinz Center, Survey of Climate Change Adaptation Planning - http://www.heinzctr.org/publications/PDF/Adaptation_Report_ October_10_2007.pdf
- US Climate Change Science Program, Gulf Coast Study Phase I (page 265) - http://www.climatescience.gov / Library /sap/sap4-7/final-report/sap4-7-final-all.pdf
- Columbia Earth Institute, Climate Change & A Global City, 2001 – http://www.ccsr.columbia.edu
- Intergovernmental Panel on Climate Change (IPCC) Climate Change 2007 – 3rd & 4th Assessment Reports – http://www.ipcc.ch

PD6-SM-1 Stormwater Management and Erosion Control: Prevent Downstream Erosion

INTENT

Limit rate of peak stormwater flows from project site to prevent erosion of downstream properties.

POINT ALLOCATION

2 Potential Planning & Design Points

ACTIONS & TARGETS

To achieve points, comply with the following:

- OPTION 1: New Development
  - Design site such that post-development peak discharge rates do not exceed the pre-development peak discharge rates for the 2- and 10-year 24-hour design storm; OR
- OPTION 2: Redevelopment
  - Reduce peak discharge rates for the 2- and 10-year design storm by 25%.

TECHNICAL APPROACHES

- Use pervious pavements for roadways, shoulders, non-traffic pavements, maintenance roads, utility yards and airside and landside parking facilities.
- Design for curb breaks, drainage ditches, basins and/or bioswales.
- Minimize impervious areas on the project site. (See PD2-GP-1, Minimize Impervious Areas).
- Use stormwater Best Management Practices (BMPs) such as water quality swales, rain gardens, dry wells and constructed wetlands to control stormwater rates.
- Use vegetated green-roof systems to reduce runoff from buildings.
- Use rainwater-harvesting systems to store roof-runoff for later use.
- Utilize compost for erosion control, which is easily installed and maintained and does not require energy-intensive disposal.
- Use Low Impact Development (LID) techniques to preserve the pre-existing site hydrology.

BENEFITS

- Conserves aquatic habitat.
- Preserves pre-existing site hydrology.
- Promotes infiltration of stormwater, which replenishes the groundwater table.

DOCUMENTATION

- Conserves aquatic habitat.
- Preserves pre-existing site hydrology.
- Promotes infiltration of stormwater, which replenishes the groundwater table.

ACKNOWLEDGMENTS

or as updated in the Addendum

- USGBC, 2005. LEED® for New Construction and Major Renovations Version 2.2, October.
- USEPA. GreenScapes. Data retrieved from www.epa.gov/greenscapes

PD6-SM-2 Stormwater Management and Erosion Control: Provide Stormwater Treatment

INTENT

Reduce or eliminate stormwater pollution by treating and infiltrating stormwater on-site.

POINT ALLOCATION

2 Potential Planning & Design Points

ACTIONS & TARGETS

To achieve points, comply with the following:

- Provide on-site infiltration or reuse of 90% of mean annual rainfall; AND
- Stormwater discharge leaving the site must be treated to remove 80% of Total Suspended Solids (TSS).

TECHNICAL APPROACHES

- Minimize impervious area on the site – this will reduce the amount of stormwater that must be treated.
- Use vegetated green-roofs to intercept and treat stormwater.
- Use Best Management Practices (BMPs) that also function as ecological features and provide aesthetic benefits (e.g., constructed wetland systems).
- Harvest stormwater for irrigation of landscaping. This avoids both the cost of stormwater treatment and water for irrigation.
- Implement BMPs in USEPA and California Stormwater Guides. (See most recent Addendum).
- Include first-flush systems including slotted edge drains connected to underground holding tanks.
- Use detention basins, detention ditches, ditch checks and other BMPs for effective first-flush treatment.
- Design for bioswales along roadway and parking areas to encourage groundwater infiltration of stormwater runoff. On airside projects, these strategies should not encourage animal habitat.
- Incorporate underground infiltration BMPs, such as dry wells or perforated drainpipe on airside projects. These methods avoid creating inundated areas, which attract wildlife.
- Include nitrogen-fixing vegetation in fertilized areas.
- Minimize current treatment of stormwater by reducing runoff.
- Utilize engineered wetlands for stormwater treatment.
- Develop stormwater collection and rain harvesting systems for treatment prior to reuse or discharge.

BENEFITS

- Reduces water quality impacts to down-gradient water bodies.
- Replenishes groundwater and reduces off-site flooding impacts.
- Reduces the need and the cost for stormwater conveyance infrastructure (e.g., catch basins, drainpipes).
- Where stormwater utilities exist, fees are based on presence or absence of on-site stormwater treatment. Proper on-site stormwater treatment can reduce stormwater utility fees.

DOCUMENTATION

- Site diagram showing locations and types of stormwater BMPs that will be used.
- Stormwater modeling results proving that 90% of annual rainfall will be treated and infiltrated.
- Stormwater modeling results demonstrating that for stormwater leaving the site, treatment BMPs will remove 80% of TSS.
- If reusing stormwater on-site, information should be provided on the stormwater reuse system, including system capacity, treatment provided (if necessary) and how stormwater will be reused.
- Narrative explaining the project's approach to this performance standard.

ACKNOWLEDGMENTS

or as updated in the Addendum

- USGBC, 2005. LEED® for New Construction and Major Renovations Version 2.2, October.

PD7-LD-1 Landscape Design: Reduce or Eliminate Potable Water Use for Landscaping

INTENT

Minimize or eliminate the use of potable water for landscaping. Maximize the amount of reclaimed water received from Hyperion Wastewater Treatment Plant.

POINT ALLOCATION

4 Potential Planning & Design Points

- See Actions & Targets for further breakdown of points.

ACTIONS & TARGETS

If minimizing potable water to achieve three points, comply with the following:

- Meter potable water used for landscaping separately from other uses; AND
- Design landscaping to use 70% less potable water than allowed by local regulations once established OR 50% less than an average local baseline for similar facilities once established (temporary increased irrigation allowed for one-year maximum to establish new plantings calculated from a mid-summer baseline); AND
- Link permanently installed irrigation systems to meteorological or soil moisture content sensors to avoid unnecessary water use; AND
- Perform a soil and climate analysis at the beginning of the planning and/or design process; AND
- Include water efficient landscaping demonstration area and signage within 200 yards of main entrance to share achievements/strategies with the public.

For additional point, eliminate the use of potable water by complying with the following:

- Perform a soil and climate analysis at beginning of design process; AND
- OPTION 1: Use only captured rainwater, greywater, wastewater or other municipal non-potable water source for irrigation; OR
- OPTION 2: Design landscaping that does not require permanent irrigation. Temporary irrigation is allowed for one-year maximum to establish new plantings.

TECHNICAL APPROACHES

- Plant native vegetation.
- Consider drought resistant vegetation that does not attract wildlife, such as Sedum (e.g., Bertrain Andessom, Dragon's Blood, White, Orange and Gold Moss).
- Segregate drought-resistant vegetation from ornamental vegetation that requires irrigation.
- Employ high-efficiency irrigation systems with a slow-drip, sub-soil irrigation and automated linkages to meteorological data.
- Evaluate stormwater and/or greywater cisterns.

BENEFITS

- Conserves limited water resources.
- Reduces natural resources consumption.
- Reduces environmental impacts and the demand on water treatment facilities.
- Reduces need and the cost to extract water from other regions.
- Minimizes impact on local water processing systems.

DOCUMENTATION

- Calculations showing actual water usage compared to baselines or local limits.
- Documentation of irrigation systems linked to meteorological or soil moisture content sensors.
- Narrative relating the impact of soil and climate analysis on design choices.
- Drawings highlighting demonstration area and related signage.
- Certification that no potable water will be used for landscaping after the first year.
- Drawings showing permanent non-potable irrigation systems and the source of the water.
- Narrative relating the results of the soil and climate analysis to design choices.

PD7-LD-1 continued on next page.

PD7-LD-1 (CONT.) Landscape Design: Reduce or Eliminate Potable Water Use for Landscaping

TECHNICAL APPROACHES (CONT.)

- Use only drought-tolerant grasses.
- Use non-potable water.
- Use mulching or composting to increase water retention, especially around plant root zones.
- Increase plant shade to retain water.
- Calculate water needs following the requirements of the latest LEED® standards. (See most recent Addendum).
- Follow the requirements of the latest LEED® standards. (See most recent Addendum).

ACKNOWLEDGMENTS

or as updated in the Addendum

- USEPA. GreenScapes, Data retrieved from www.epa.gov/greenscapes
- USGBC, 2005. LEED® for New Construction and Major Renovations Version 2.2, October.
- Chicago SBM
- FAA Part 150

PD7-LD-2 Landscape Design: Reduce Impact of Fertilizer Use

INTENT

Minimize environmental degradation from chemical fertilizer use during initial planting.

ACTIONS & TARGETS

To achieve points, comply with the following:

- Include nitrogen-fixing vegetation in fertilized areas; AND
- Specify non-toxic, bio-based materials for initial planting and fertilization; AND
- Develop a manual for landscaping staff detailing methods of reducing fertilizer impact. Include safe storage, minimal and precise application and safe cleanup procedures; AND
- Include a minimum of three inches of mulch covering exposed soil in planting beds; AND
- Use native plants that are suited to the soil and require less or no fertilization; AND
- Provide on-site facilities for composting of landscaping waste.
- For an additional point, include organic landscaping demonstration area and signage within 200 yards of main entrance to share achievements/strategies with the public.

TECHNICAL APPROACHES

- Include nitrogen-fixing vegetation in fertilized areas.
- Specify non-toxic, non-chemical materials for initial planting and fertilization.
- Top-dress soil with compost to decrease fertilizer and irrigation needs.

POINT ALLOCATION

2 Potential Planning & Design Points

- See Actions & Targets for further breakdown of points.

BENEFITS

- Improves groundwater quality.
- Limits liability of airport for pollution and employee exposure.
- Improves soil quality.
- Reduces maintenance costs.

DOCUMENTATION

- Copy of the maintenance information developed for the landscaping staff.
- Tabulation of plantings. If tabulation includes non-native plants, explain the suitability of non-native species for the locations selected and list fertilization requirements.
- Project drawings of composting facilities.
- Confirmation of the use of mulch on exposed soil.
- Drawings highlighting demonstration area and related signage.

ACKNOWLEDGMENTS

or as updated in the Addendum

- USEPA. GreenScapes, Data retrieved from www.epa.gov/greenscapes
- The Pennsylvania Green Building Operations and Maintenance Manual. Data retrieved from http://www.dgs.state.pa.us/dgs/lib/dgs/green_bldg/greenbuildingbook.pdf

PD7-LD-3 Landscape Design: Provide Infrastructure for Composting & Vermiculture

INTENT

Provide infrastructure to recycle on-site waste into beneficial compost for landscaping use.

POINT ALLOCATION

3 Potential Planning & Design Points

ACTIONS & TARGETS

To achieve points, comply with the following:

- Provide contained on-site facilities to compost acceptable organic materials from landscape maintenance, food services and paper waste from airport facilities and vendors; AND
- Include a composting/vermiculture demonstration center and signage to share achievements and strategies with the public.

TECHNICAL APPROACHES

- Evaluate composting methods appropriate for anticipated waste.

BENEFITS

- Reduces disposal fees.
- Diverts waste from landfills.
- Improves soil quality.
- Reduces runoff.
- Conserves water.
- Minimizes need for landscaping chemicals.

DOCUMENTATION

- Drawings showing compost and/or vermiculture facilities and demonstration facilities.
- Calculations of composting facilities' capacity and suitability for waste-stream from landscaping and airport.

ACKNOWLEDGMENTS

or as updated in the Addendum

- University of Georgia. Food Waste Composting: Institutional and Industrial Applications, College of Agriculture and Environmental Sciences. Data retrieved from http://pubs.caes.uga.edu/caespubs/pubcd/B1189.htm
- Colorado Institutional Food Waste Composting Guide. Data retrieved from http://recycling.colorado.edu/state_and_national/composting.pdf
- The Branchville Correctional Facility Vermiculture Program. Data retrieved from http://www.in.gov/recycle/topics/composting/docs/branchvillevermiculture.pdf

PD8-WE-1 Water Efficiency & Conservation: Water Management Plan

INTENT

Optimize the management and utilization of site water resources for the finished project.

POINT ALLOCATION

2 Potential Planning & Design Points

ACTIONS & TARGETS

To meet requirements, comply with the following:

- Evaluate projected use of potable water, stormwater and wastewater resources and develop a coordinated management plan for full site water resources; AND
- Identify strategies for water conservation and on-site reclamation of wastewater; AND
- Incorporate water usage and conservation recommendations per most recent executive order. (See most recent Addendum); AND
- Evaluate and include at least four (4) Federal Energy Management Program (FEMP) Best Management Practices (BMPs) for Water Conservation.

TECHNICAL APPROACHES

- Evaluate projected operation and maintenance needs, utility information, facility information, emergency response information and planning considerations.
- Evaluate on-site stormwater and greywater reclamation for non-potable uses such as landscape irrigation and building flush systems.
- Consult California Title 22 Water Recycling Criteria for regulations governing the proper use of reclaimed water for non-potable needs. (See most recent Addendum)
- Incorporate the use of high-efficiency plumbing fixtures such as those recommended by the USEPA WaterSense Program.
- Evaluate on-site wastewater treatment technologies such as constructed wetlands.
- Educate maintenance staff and building occupants about the strategies and practices to make water efficiency a success.
- Develop a schedule to track life cycle water usage and cost savings.
- Install metering network to facilitate accurate measurement of water use.
- Include water pressure testing for piping within the project boundary in the construction specifications (Division 15).

BENEFITS

- Minimizes the depletion of reservoirs and aquifers.
- Improves the integrity and recharge of watershed catchments.
- Reduces burden on public infrastructure by minimizing energy use to draw, treat and distribute water unnecessarily.
- Reduces the costs and environmental impacts to extract water from other regions.
- Reduces potable water demand by reclaiming and reusing stormwater and greywater.
- Increases cost savings on sewage and potable water utilities.
- Reduces on-site stormwater runoff and related management infrastructure costs.
- Tracks usage and costs to monitor progress and develop further baselines for improvement in the future.

DOCUMENTATION

- Water Management Plan that includes information on utilities, facility, operation and maintenance schedules, emergency response and comprehensive planning considerations.
- Utility information: contact information and rate schedules for water and wastewater utilities and information on financial or technical assistance available from utilities to aid with water planning and implementing water efficiency programs.

PD8-WE-1 continued on next page.

PD8-WE-1 (CONT.) Water Efficiency & Conservation: Water Management Plan

DOCUMENTATION (CONT.)

- Facility information: identification of major water-using processes, location and accuracy of water measurement devices, main shut-off valves, verification of operating schedules and occupancy of buildings.
- Emergency response information: drought-contingency plans that will describe how the facility will meet minimum water needs or reduce water consumption in a drought or other water shortage.
- Comprehensive planning: informing staff, contractors and building occupants about the Water Management Plan and ensure that water supply, wastewater, stormwater and water efficiency BMPs are taken into account at the earliest stages of planning and design.
- List, at a minimum, four (4) FEMP BMPs recommendations that will be implemented in the project.
- Water pressure testing results.

ACKNOWLEDGMENTS

or as updated in the Addendum

- Port Authority of New York and New Jersey, Engineering Department, 2004. Sustainable Design Guidelines, New Construction, July.
- USEPA. WaterSense Program. Data retrieved from http://www.epa.gov/watersense/
- State of California. Title 22 Division 4 Chapter 3, Water Recycling Criteria.
- USDOE. Water Efficiency, Federal Energy Management Program.
- United States Office of the President, 2007. Executive Order (EO) 13423 Strengthening Federal Environmental, Energy, and Transportation Management, January.

PD8-WE-2 Water Efficiency & Conservation: Water Use Efficiency

INTENT

Maximize water use efficiency within buildings and reduce potable water requirements.

POINT ALLOCATION

2 Potential Planning & Design Points

- Points will be awarded according to the following schedule:
  - >30% Water Use Reduction = 1 pt
  - 40% Water Use Reduction = 2 pts

ACTIONS & TARGETS

To meet requirements, comply with the following:

- Reduce water use by designing fixtures and strategies to use less water in the building than the performance baseline mandated by the Energy Policy Act of 1992 Plumbing Fixture Requirements. (See most recent Addendum). Fixtures include (as applicable): water closets, urinals, lavatory faucets, showers, janitor sinks and kitchen sinks.

TECHNICAL APPROACHES

- Implement water conservation strategies as identified in the Water Management Plan.
- Install high-efficiency fixtures and valves.
- Utilize low- or dual-flush water closets.
- Utilize occupant sensors in urinals and faucets.
- Evaluate dry fixtures such as waterless urinals and composting toilets.
- Evaluate reclaimed water use for cooling tower makeup.
- Evaluate high-efficiency products certified by USEPA WaterSense Program.
- Evaluate pulsed-power electromagnetic water treatment, ultraviolet treatment or ozone treatment for cooling tower water.
- Establish a separate non-potable water supply system for vehicle maintenance.

BENEFITS

- Conserves limited water resources and protects water catchments.
- Minimizes the depletion of reservoirs and aquifers.
- Reduces the need and costs to extract water from other regions.
- Minimizes environmental impacts and energy used to treat water unnecessarily.
- Minimizes long-term operation costs by reducing potable water demand.

DOCUMENTATION

- Provide documentation and calculations of annual design versus baseline water use as required in of the latest LEED® standards. (See most recent Addendum).
- Calculate the water use of full-time, part-time and transient occupants of the building based on a standard 8-hour occupancy period to determine the usage of each fixture.
- Determine the design annual water use by totaling the annual volume of each fixture type. Subtract reuse of reclaimed stormwater or greywater. The design will have fixtures with flush and flow rates equivalent to those listed in Table 1.

PD8-WE-2 continued on next page.

PD8-WE-2 (CONT.) Water Efficiency & Conservation: Water Use Efficiency

DOCUMENTATION (CONT.)

- Determine the baseline annual water use by duplicating the design template while setting the fixtures flush and flow rates to the default values stipulated by the Energy Policy Act of 1992 (Table 2).
- Total fixture uses by occupants must be consistent in both the design and baseline cases.
- Provide data sheets and/or literature from the manufacturer on the fixtures/products.

ACKNOWLEDGMENTS

or as updated in the Addendum

- USGBC, 2005. LEED® for New Construction and Major Renovations Version 2.2, October.
- Port Authority of New York and New Jersey, Engineering Department, 2004. Sustainable Design Guidelines, New Construction, July.
- USEPA. WaterSense Program. Data retrieved from http://www.epa.gov/watersense/

Table 1
Examples of High-Efficiency Fixture Flows

High Efficiency Product	Water Use
Toilets	1.3 gal/flush
Urinals	0.5 gal/flush
Waterless urinals	0.0 gal/flush
Showerheads	1.5 - 2.0 gpm (80 psi)
Faucets	1.5 gpm (80 psi)

Table 2
Federal Plumbing Fixture Requirements, U.S. Energy Policy Act 1992

Baseline Product Use	Maximum Water Use
Toilets	1.6 gal/flush
Urinals	1.0 gal/flush
Showerheads	2.5 gpm (80 psi)
Faucets	2.5 gpm (80 psi)

PD8-WE-3 Water Efficiency & Conservation: Water Reuse & Reclamation

INTENT

Reclaim and reuse wastewater and storm water to reduce potable water demand and preserve natural water resources.

POINT ALLOCATION

2 Potential Planning & Design Points

ACTIONS & TARGETS

To achieve points, comply with the following:

- Reduce potable water use by 25% through the reclamation and applicable reuse of greywater and/or stormwater for non-potable water needs such as building sewage conveyance and vehicular maintenance; AND
- Ensure that water reclamation and reuse meet requirements as stated in the California Title 22 Water Recycling Criteria. (See most recent Addendum).

TECHNICAL APPROACHES

- Implement wastewater reuse strategies as identified in the Water Management Plan.
- Use reclaimed greywater and/or harvested stormwater for non-potable needs like building sewage conveyance, cooling tower make-up, vehicle maintenance and landscape irrigation.
- Evaluate wastewater treatment opportunities to reduce the amount of potable water used in the building for conveying sewage. Develop stormwater collection/rain-harvesting system for reuse.
- Evaluate using reclaimed water for cooling tower make-up.
- Design for the use of greywater for non-potable uses.
- Design plumbing to use reclaimed water from reclaimed water pipeline from a nearby wastewater treatment facility.

BENEFITS

- Reduces unnecessary potable water demand and usage.
- Conserves and preserves integrity of the local aquifer.
- Promotes wetland habitats and groundwater recharge.
- Reduces on-site stormwater runoff through harvest for non-potable needs.
- Saves costs on potable water by reusing stormwater and greywater for uses such as sewage conveyance and vehicle maintenance.
- Minimizes energy used to treat water that is used for non-potable needs.
- Minimizes burden on municipal sewer infrastructure.

DOCUMENTATION

- Calculations of the annual amount of design water used for non-potable needs with the corresponding types of fixture as outlined in the most recent revision of the LEED® standards. (See most recent Addendum).
- Calculations of the annual amount of wastewater generated with the corresponding types of fixture as outlined in the most recent revision of the LEED® standards. (See most recent addendum). Chart amount of greywater and blackwater separately. (Greywater is typically generated by sinks, baths and showers; blackwater, by water closets and urinals).

PD8-WE-3 continued on next page.

PD8-WE-3 (CONT.) Water Efficiency & Conservation: Water Reuse & Reclamation

DOCUMENTATION (CONT.)

- List building and/or site activities and/or functions that can be served just as effectively by non-potable water.
- Calculations of the annual amount of reclaimed greywater and/or stormwater that will be reused for these purposes. Explain how the recycled water will be reclaimed and distributed.
- Calculations of the percentage of annual reclaimed water over total annual water used.

ACKNOWLEDGMENTS

or as updated in the Addendum

- USGBC, 2005. LEED® for New Construction and Major Renovations Version 2.2, October.
- Port Authority of New York and New Jersey, Engineering Department, 2004. Sustainable Design Guidelines, New Construction, July.
- State of California. Title 22 Division 4 Chapter 3, Water Recycling Criteria.

PD9-HI-1 Heat Island Reduction: Heat Island Reduction – Roof

INTENT

Reduce heat island produced by artificial thermal loading of building roofs. Minimize impact on microclimate and human habitats. Maximize landscaped areas and high-albedo surfaces at other areas. Minimize energy costs for cooling buildings.

ACTIONS & TARGETS

To meet requirements, comply with the following:

- OPTION 1: Acquire a Cool Roof Rating Council (CRRC) certification for the roofing system as required in 2005 California Title 24 Section 3.4. (See most recent Addendum); OR
- OPTION 2: Install a vegetated green-roof for greater than 50% of the total roof area.

TECHNICAL APPROACHES

- Evaluate a CRRC-rated roof product or an Energy Star cool-roof with equivalent reflectance and emittance properties.
- Acquire a CRRC test and label on the roofing system.
- Use single-ply roofing membrane with high-emittance properties.
- Apply coating to the surface of a conventional roof membrane.
- Use metal roofs with industrial grade coating with high-reflectance (non-glare) and emittance.
- Install a vegetated green-roof system that considers drought-resistant vegetation and does not attract wildlife, such as Sedum (e.g., Bertrain Andessom, Dragon's Blood, White, Orange and Gold Moss).
- Utilize a combination of vegetated and high-albedo surfaces.
- Consider the use of vegetated roofs that may assist in earning points with the following performance standards:
  - PD2-GP-1, Minimize Imperious Areas
  - PD2-GP-5, Site Protection & Restoration
  - PD6-SM-2, Provide Stormwater Treatment

POINT ALLOCATION

2 Potential Planning & Design Points

BENEFITS

- Reduces urban heat island effect.
- Reduces air temperature through usage of high-albedo or "green" (vegetated) roof system. Potential 10% reduction on costs spent on air conditioning.
- Increases lifetime by two or three times the standard roof through protection from mechanical damage, UV-rays, hail and extreme temperature fluctuations, which could potentially decrease maintenance and replacement costs.
- Improves indoor sound levels – reduce outdoor sound by up to 40 decibels.
- Reduces stormwater detention requirements. Potentially save on costs in stormwater conveyance infrastructure.

DOCUMENTATION

- Building roof drawings that highlight locations of specific roof materials and/or vegetated roof systems; AND
- CRRC test label that shows the initial reflectance value of at least 0.70 and emittance value of at least 0.75. (Option 1); OR
- Total calculated area of installed vegetated green-roof system. (Option 2)
- Information that high-reflectance industrial grade coating is non-glare.

ACKNOWLEDGMENTS

or as updated in the Addendum

- USGBC, 2005. LEED® for New Construction and Major Renovations Version 2.2, October.
- California Energy Commission, 2005. California Title 24 Energy Efficiency Standards.
- Cool Roof Rating Council. CRRC-1 Program Manual.

PD9-HI-2 Heat Island Reduction: Heat Island Reduction – Non-Roof

INTENT

Reduce heat island produced by artificial thermal warming due to site development. Minimize impact on microclimate and human habitats.

POINT ALLOCATION

2 Potential Planning & Design Points

ACTIONS & TARGETS

To achieve points, comply with the following:

- Follow the requirements outlined in latest version of the LEED® standards. (See most recent addendum).

TECHNICAL APPROACHES

- Minimize paved-over surfaces, especially impervious pavements.
- Maximize high-albedo pavements (i.e., Portland Cement Concrete for roadways).
- Provide shade (calculated on June 21, noon solar time) to cover dark impervious surfaces using native or climate-tolerant trees and large shrubs, vegetated trellises or other exterior structures supporting vegetation.
- Substitute vegetated surfaces for impervious surfaces. Landscape to reduce heat through plant transpiration. Vegetated surfaces will also assist in earning points with performance standard PD6-SM-2, Provide Stormwater Treatment.
- Use plants that do not attract wildlife.
- Use open grid pavement systems.
- Evaluate structured (stacked) parking in lieu of asphalt-paved surface lots.
- Develop high-albedo structural roof to cover dark pavements and parking spaces.
- Consider the use of solar panels that may assist in earning points with performance standards PD12-EC-3, Energy Optimization and PD12-EC-5, On-Site Alternative & Renewable Energy.
- Install trees to provide shade within 5 years for at least 30% of dark colored impervious surfaces.

BENEFITS

- Reduces the urban heat island effect.
- Reduces the energy use and cooling costs associated with temperature gradients.
- Reduces the stormwater drainage requirements through use of pervious surfaces.
- Increases atmospheric carbon storage (i.e., reduce global warming) through landscaping and reduce local air temperatures through evapotranspiration.

DOCUMENTATION

- Follow the requirements outlined in the latest revision of the LEED® standards. (See most recent Addendum).

ACKNOWLEDGMENTS

or as updated in the Addendum

- USGBC, 2005. LEED® for New Construction and Major Renovations Version 2.2, October.
- US Army Corps of Engineers, 2002. Sustainable Project Rating Tool (SPiRiT), June.

PD10-LQ-1 Interior & Exterior Lighting Quality: Exterior Light Pollution Reduction

INTENT

Minimize light trespass from the non-FAA regulated areas of the site, reduce development impact on nocturnal environments and improve nighttime visibility through glare reduction and the distinction between signage and runway/taxiway lighting.

POINT ALLOCATION

2 Potential Planning & Design Points

ACTIONS & TARGETS

To achieve points, comply with the following:

- Implement the requirements outlined in the latest revision of the LEED® standards. (See most recent Addendum).

TECHNICAL APPROACHES

- Model the site lighting using a computer model.
- Consider full cutoff luminaries, low-reflectance, non-specular surfaces and low angle spotlights for roadway and building lighting.
- Adopt site lighting criteria to maintain safe light levels while avoiding off-site lighting and night-sky pollution. Focus light toward the earth to minimize night-sky pollution.
- Minimize site lighting where safety and security allows.
- Limit the maximum candela value of interior lighting to fall within the building (not out through windows) and the maximum candela value of all exterior lighting to fall within the property.
- Use High Pressure Sodium (HPS) lamps instead of Metal Halide (MH) lamps, where acceptable. HPS lamps produce more lumens per watt, have less mercury content per lamp and have a greater average rated life expectancy than MH lamps, which could potentially decrease maintenance and replacement costs.
- Limit lighting in protected ecological areas to mitigate lighting impacts on wildlife.
- Design for monitoring of maximum candela value.

BENEFITS

- Decreases glare impacts at night.
- Reduces environmental impact on nocturnal species.
- Increases quality of life in communities surrounding construction sites.
- Reduces energy consumption and long-term operating costs.

DOCUMENTATION

- Follow the requirements outlined in the latest revision of the LEED® standards. (See most recent Addendum).

ACKNOWLEDGMENTS

or as updated in the Addendum

- USGBC, 2005. LEED® for New Construction and Major Renovations Version 2.2, October.
- City of Chicago, O'Hare Modernization Program, 2003. Sustainable Design Manual, December.
- Harder, Susan, 2007. Data retrieved from http://www.darkskysociety.org/handouts/white_paper-mh_vs_hps.pdf

PD10-LQ-2 Interior & Exterior Lighting Quality: Interior Lighting Quality

INTENT

Achieve increasing levels of interior lighting quality to increase energy efficiency and reduce environmental impacts associated with lighting products.

POINT ALLOCATION

2 Potential Planning & Design Points

ACTIONS & TARGETS

To achieve points, comply with the following:

- Eliminate the use of incandescent lamps; AND
- Increase energy performance; AND
- For retrofit projects, retrofit T-12 lighting; AND
- Recycle existing luminaries.

TECHNICAL APPROACHES

- Utilize LED lighting for signs, stairs and signals.
- Use most efficient fluorescent tubular lamps.
- To minimize costs, encourage application for tax reduction or rebate for installation of high efficiency tubular lamps.
- Utilize compact fluorescent light bulbs in lieu of incandescent lamps for areas with low ceiling heights and minimal light requirements.
- Provide low mercury/low lead lamps.
- Specify strict site lighting criteria.
- Conduct a light modeling study.
- Coordinate electrical lighting scenarios with day-lighting strategies.
- Specify recyclable lamps.
- Minimize site lighting where possible.
- Design for monitoring of maximum candela value.

BENEFITS

- Reduces pollution and environmental impacts.
- Reduces cost associated with energy use.
- Reduces mercury and lead in landfills by recycling luminaries.
- Increases employee productivity.

DOCUMENTATION

- Provide recycling information for existing luminaries.
- Provide documentation that no incandescent lamps were used.
- Provide specification sheets for fluorescent luminaries and signs along with plans identifying the fixtures. Also, provide a work plan that outlines steps that will be taken to recycle existing luminaries.

ACKNOWLEDGMENTS

or as updated in the Addendum

- USGBC, 2005. LEED® for New Construction and Major Renovations Version 2.2, October.

PD11-NP-1 Noise Pollution Reduction: Interior Noise & Acoustical Control

INTENT

Develop acoustical control measures during the planning and design phases to reduce interior noise levels from both interior and exterior noise sources affecting indoor noise quality.

POINT ALLOCATION

2 Potential Planning & Design Points

ACTIONS & TARGETS

To meet requirements, comply with the following:

- Design and construct building, mechanical and ventilation systems to achieve the target noise levels established in Table 1; AND
- Use soundproofing and building design features provided in reference material below, other available references or through consultation with a Certified Acoustical Engineer; AND
- Engage a third party Certified Acoustical Engineer to conduct independent interior noise level and octave-band measurements within one month of completion of the finished project using American Society of Testing and Materials (ASTM) procedures referenced in the Acknowledgements section. (See most recent Addendum).

TECHNICAL APPROACHES

- Identify building, mechanical and ventilation systems designed to mitigate interior noise levels.
- Conduct an independent interior noise level measurement audit for the completed project.
- Place noise transmissive surfaces away from sensitive spaces.
- Program locations of mechanical equipment and other sources of noise away from areas of occupancy.
- Utilize acoustical ceiling tiles, flooring and walls.
- Specify lighting and HVAC systems that produce minimal noise.
- Develop an insulation plan.
- Specify laminated glazing or double-pane windows.

BENEFITS

- Reduces overall interior noise levels from both interior and exterior noise sources.
- Improves the ambient noise quality for regular occupants of the completed project.

DOCUMENTATION

- A technical report provided by a Certified Acoustical Engineer summarizing the results of the interior noise level measurements and comparison to target interior noise levels and RC and NC curves. If necessary, provide additional noise mitigation measures to meet recommended noise levels.

ACKNOWLEDGMENTS

or as updated in the Addendum

- ASTM, 2003. ASTM E336-05: Standard Test Method for Measurement of Airborne Sound Insulation in Buildings.
- ASTM, 2003. ASTM 1332-90: Standard Classification for Determination of Outdoor-Indoor Transmission Class.
- ASTM, 2007. ASTM C423-07a: Standard Test Method for Sound Absorption and Sound Absorption Coefficients by the Reverberation Room Method.

PD11-NP-1 continued on next page.

PD11-NP-1 (CONT.) Noise Pollution Reduction: Interior Noise & Acoustical Control

ACKNOWLEDGMENTS (CONT.)

- California Department of Health Services, 1980. Catalog of STC and IIC Ratings for Wall and Floor/Ceiling Assemblies.
- Harris, C.M. Handbook of Acoustical Measurements and Noise Control, 3rd, 1991.

Table 1
Target Interior Background Noise Levels in Unoccupied Rooms

Type of Room	Room Criterion (RC) Level 1, 2 (dB)	Noise Criterion (NC) Level 1 (dB)	A-Weight Sound Level (dBA)
Conference Rooms	RC 25-30	NC 25-30	33-38
Lecture Rooms	RC 25-30	NC 25-30	33-38
Executive Offices	RC 25-30	NC 25-30	33-38
Private Offices	RC 30-35	NC 25-35	38-43
Hotel Bedrooms	RC 30-35	NC 25-35	38-43
Open-Plan Offices	RC 35-40	NC 25-40	43-48
Lobbies, Public Areas	RC 35-40	NC 25-40	43-48
Restaurants	RC 35-45	NC 25-45	48-53
Public Offices	RC 35-45	NC 25-45	48-53

Notes:

1. RC and NC criterion are based on a series of curves of octave-band sound spectra in a system for rating the noisiness of an occupied indoor space. An actual octave-band spectrum is compared with this set of curves to determine the RC and NC level of the space.
2. RC levels are recommended for evaluating noise in a room supplied by an HVAC system

Source: C.M. Harris, Handbook of Acoustical Measurements and Noise Control, Third Ed., 1991.

PD12-EC-1 Energy Efficiency & Conservation: Energy Management Plan

INTENT

Develop a management plan to reduce energy use as new technologies and processes become available. The energy management plan applies to both building and non-building projects.

ACTIONS & TARGETS

To meet requirements, comply with the following:

- For building AND non-building projects:
  - Energy Management Plan, including energy baseline impact evaluation with mitigation goals for a minimum of the top five energy usage processes.
- For building projects:
  - Design project electrical system, HVAC systems and building envelope (if applicable) to comply with California Title 24. (See most recent Addendum); OR
- For non-building projects:
  - Design for the optimization of energy demands from project equipment and systems.

TECHNICAL APPROACHES

- Design building envelope, HVAC and lighting systems with reduced energy use in mind.
- Gather input from maintenance staff to develop an Energy Management Plan.
- Develop an energy use budget for the first year of the project.
- Identify strategies that can be used to reduce energy consumption below the energy use budget established for the first year.
- Develop an energy management plan to inventory, track, manage and plan energy intensive processes related to the finished project. The plan will be used to analyze energy uses in order to identify processes that may be less efficient and to give a better understanding of where energy will be used. The plan will identify top energy-intensive processes and a plan will be developed to evaluate and analyze the process for future improvements;
- Create an inventory of energy use processes, building electrical uses and energy exchanging processes. Examples include HVAC system, boilers, steam generator, heat exchangers, lighting system, appliances, fenestration, building insulation and motors;
- Develop baseline energy consumption by determining the rated amount of energy in watts used in each process, transferred or lost;

POINT ALLOCATION

2 Potential Planning & Design Points

BENEFITS

- Reduces energy costs and buffers against volatile energy markets.
- Decreases carbon footprint.
- Reduces consumption of excess natural and non-renewable resources.
- Reduces environmental, economic and social impacts related to energy production.
- Develops plan to continually reduce energy as new technologies become available.

DOCUMENTATION

- For building projects:
  - Documentation to prove compliance with California Title 24 can be provided with one of the following methods:
    - Provide third party documentation certifying that the building is in compliance with California Title 24; OR
    - Provide a model of the California Energy Code using Energy Pro.
      - Include in this model the Title 24 minimum energy calculations.
      - Include in this model the actual energy use calculations.

PD12-EC-1 continued on next page.

PD12-EC-1 (CONT.) Energy Efficiency & Conservation: Energy Management Plan

TECHNICAL APPROACHES (CONT.)

- List the inventory from highest energy usage to lowest energy usage;
- Develop a plan to evaluate how energy can be reduced from the highest energy usage processes. This should include a periodic review of the processes to look for new technologies or ideas to reduce energy consumption;
- Develop targets to reduce energy usage for high-energy processes with set targets and deadlines;

DOCUMENTATION (CONT.)

- For non-building projects:
  - Narrative describing how energy related devices were designated and selected to be as energy efficient as possible.

PD12-EC-2 Energy Efficiency & Conservation: Energy Systems Commissioning

INTENT

Verify that energy systems have been installed and calibrated and perform according to the construction submittals. Verify that construction submittals have been developed from the basis of design and the Owner's project requirements.

POINT ALLOCATION

3 Potential Planning & Design Points

ACTIONS & TARGETS

To meet requirements, comply with the following:

- Designate an individual or firm independent from the planning, design and construction teams to lead and review the commissioning process to determine that the systems meet "basis of design" and Owner's project requirements; AND
- Owner shall develop project requirements. These requirements shall include performance standards attempted from or related to these Guidelines and additional requirements related to energy from, but not limited to, city or state code, regulations or comprehensive standards; AND
- Document basis of design assumptions, standards, regulations and Owner's project requirements; AND
  - Basis of design should be documented with the following sections: Introduction and Background (in response to Owner's project requirements), Objective (summary of standards, codes, regulations, assumptions and other design criteria used to form basis of design), Response to Requirements (table that lists standards, codes, regulations and assumptions with the design and component used to fulfill requirements) and Conclusion.
- Develop and incorporate commissioning specifications (Division 1) stating commissioning requirements and required documentation from system commissioners; AND
- Develop and implement a Commissioning Plan that outlines responsibilities and requirements to document and verify the commissioning process; AND
- Verify that systems have been commissioned appropriately through commissioning documents provided from the responsible parties to the Owner; AND
- Summarize and document commissioning process with Owner's project requirements, basis of design, contractor submittal and checklist with documentation showing that requirements have been met.

BENEFITS

- Ensures processes are functioning as specified and designed to reduce energy consumption.
- Decreases carbon footprint.
- Reduces consumption of excess natural and non-renewable resources.
- Reduces environmental impacts related to energy production.

DOCUMENTATION

- Copy of the Commissioning Plan.
- Documentation verifying commissioning of systems with a narrative summary of the commissioning process and basis of design criteria.
  - Project requirements should be documented with the following sections: Introduction and Background, Objective, Requirements (in bulleted list or table with explanation of requirements) and Conclusion.

PD12-EC-2 continued on next page.

PD12-EC-2 (CONT.) Energy Efficiency & Conservation: Energy Systems Commissioning

TECHNICAL APPROACHES

- Identify an individual to lead commissioning process early on.
- Develop Owner's project requirements at the earliest possible stage.
- Review the design intent and the basis of design documentation.
- Incorporate commissioning requirements into the construction documents.
- Develop and utilize a Commissioning Plan.
- Verify installation, functional performance, training, operations and maintenance documentation.
- Complete a Commissioning Report.
- Evaluate whether energy systems are sized appropriately.
- Develop commissioning requirements for the following systems:
  - Central building automation system
  - HVAC system equipment
  - Lighting controls and sensors
  - Site lighting
  - Refrigeration systems
  - Vertical transport
  - Building envelope
  - Uninterruptible power supply systems
  - Lightning protection
  - Domestic and process water pumping and mixing systems
  - Equipment sound control systems
  - Data and communication systems
  - Paging systems
  - Security systems
  - Irrigation systems
  - Plumbing
  - Backup energy supply systems
  - Emergency Power generators and automated power transfer switching
  - Life Safety Systems
  - Runway lighting and illuminated signage
  - Runway NAVAIDS
  - Traffic systems
  - Pump systems
  - Oil/water separators

ACKNOWLEDGMENTS

or as updated in the Addendum

- USGBC, 2005. LEED® for New Construction and Major Renovations Version 2.2, October.

PD12-EC-3 Energy Efficiency & Conservation: Energy Optimization

INTENT

Reduce energy use over baseline energy levels established as part of PD12-EC-1, Energy Management Plan. This performance standard applies to both building and non-building projects.

ACTIONS & TARGETS

To achieve points, comply with the following:

- Calculate projected reductions in energy use compared to the baseline levels established in PD12-EC-1, Energy Management Plan; AND
- For buildings, reductions are calculated based on exceeding California Title 24 baselines. (See most recent Addendum); AND
- Utilize Energy Star compliant equipment whenever available. Reference inventory of energy uses from Energy Management Plan (PD12-EC-1) and determine which are covered under the Energy Star Specifications. Categories include Appliances, Home Electronics, Office Equipment, Lighting, Commercial Food Services and other Commercial Products. A complete listing can be found at the EPA website.

TECHNICAL APPROACHES

- Develop baseline energy consumption by itemizing sources of energy use.
- Develop computer energy-simulation model to assess energy performance and identify the most cost effective energy measures.
- Design building envelope, HVAC and lighting system with reduced energy use in mind.
- Incorporate advanced lighting to reduce energy usage.
- Use light colored paints and interiors to reflect light.
- Incorporate larger windows on the northern face of a building. Southern facing windows should be shaded with overhangs or deciduous vegetation. Coniferous trees planted to block northwest winds in the winter may reduce heating costs.
- Incorporate overhead sky lighting.
- Incorporate sensors that adjust lighting based on incoming light levels.
- Use efficient HVAC systems as HVAC consumes a large portion of energy.
- Improve building envelope to reduce energy losses.
- Develop open office plan.
- Provide high-efficiency motors and systems.

POINT ALLOCATION

10 Potential Planning & Design Points

- Points will be awarded depending on the energy reduced over the baseline inventory according to the following schedule:
  - 10% Reduction = 1 pt
  - 14% Reduction = 2 pt
  - 18% Reduction = 3 pt
  - 22% Reduction = 4 pt
  - 26% Reduction = 5 pt
  - 30% Reduction = 6 pt
  - 34% Reduction = 7 pt
  - 38% Reduction = 8 pt
  - 42% Reduction = 9 pt
  - 46% Reduction = 10 pt

BENEFITS

- Reduces energy costs and buffers against volatile energy markets.
- Decreases carbon footprint.
- Reduces consumption of excess natural and non-renewable resources.
- Reduces environmental impacts related to energy production.

DOCUMENTATION

- Simulated model of energy usage based on improved design.
- Calculations of percent reduction in energy compared to baseline inventory calculations (PD12-EC-1, Energy Management Plan).
- Table of Energy Star eligible devices denoting which devices were included in the design. Include a detailed explanation if an available Energy Star device is not selected for the design.

PD12-EC-3 continued on next page.

PD12-EC-3 (CONT.) Energy Efficiency & Conservation: Energy Optimization

TECHNICAL APPROACHES (CONT.)

- Organize circuiting of lighting and building systems so that individual areas may be separately controlled.
- Orient buildings for passive solar/daylight penetration.
- Include architectural features for daylight and glare.
- Install motion sensors in stairs, toilets, storage and equipment rooms.
- Quantify energy performance after mitigation component design and compare to a baseline evaluation without mitigation components. Provide a summary report to the LAWA.
- Define lighting requirements carefully.
- Specify a strict quality control program for system component storage and installation.
- Consider ease of maintenance when designing lighting and HVAC systems.
- Specify the use of infrared imaging during construction to identify issues with thermal leaks from buildings.
- Use variable air-volume systems for cooling to reduce energy use during part-load conditions.
- Evaluate a multiple-chiller system with units of varying size.
- Utilize absorption cooling.
- Tie lighting, temperature and ventilation in public areas of terminals to flight schedules.
- Design terminal areas with a variety of light and sound levels.
- Include the following technologies and strategies:
  - Specify Variable Frequency Drive (VFD) motors.
  - Energy efficiency upgrades to relocated facilities.
  - Use LED “exit” signs in buildings.
  - Provide daylight harvesting control systems.
  - Optimize lighting controls.
  - Integrate lighting systems with BAS.
  - Use high performance glazing and window systems.
  - Utilize under floor air distribution systems.
  - Design for high levels of thermal insulation
  - Utilize premium efficiency motors.
  - Utilize ground-source heat pumps.
  - Utilize LED lighting for lighting, signage and signals, including for taxiways and runways.
  - Include compact fluorescent light bulbs for lighting.
  - Employ heat recovery from equipment rooms, such as an in-line baggage room, and apply to other areas of the site.
  - Utilize thermal storage to decrease peak loading.
  - Apply for Energy Star Rating.
  - Ensure that energy systems are not oversized.

ACKNOWLEDGMENTS

or as updated in the Addendum

- California Energy Commission, 2005. California Title 24 Energy Efficiency Standards.
- www.energystar.gov or updated website (see most recent Addendum)

PD12-EC-4 Energy Efficiency & Conservation: Provide Infrastructure for Pre-Conditioned Air

INTENT

Provide infrastructure in terminal buildings and gates to support the use of preconditioned air by aircraft as part of new construction, renovation and retrofit projects.

ACTIONS & TARGETS

To achieve points, comply with the following:

- Provide infrastructure for 400 Hz ground power at new and renovated terminal gates; AND
- Retrofit existing gates with 400 Hz ground power to enable installation of preconditioned air units.

TECHNICAL APPROACHES

- Include requirement for preconditioned air units in bid documents for terminal and gate design and renovation projects.
- Establish lease provisions that require preconditioned air units at gates with 400 Hz power, for new terminal leases.

POINT ALLOCATION

2 Potential Planning & Design Points

BENEFITS

- Use of preconditioned air units that require 400 Hz ground power will eliminate the need for aircraft to use auxiliary power units (APUs) or ground power units (GPUs) to generate electricity while they are at a gate. APUs are typically powered by the aircraft using Jet-A fuel; GPUs are typically powered by diesel engine generators. Preconditioned air will reduce or eliminate air emissions associated with the use of APUs and GPUs by gate-parked aircraft.
- Reduce risk of chemical spills from APUs and GPUs.
- Improves air quality for passengers, airport personnel and the local community.

DOCUMENTATION

- Report identifying gates with 400 Hz ground power and gates with preconditioned air units installed.

PD12-EC-5 Energy Efficiency & Conservation: On-Site Alternative & Renewable Energy

INTENT

Develop on-site renewable and alternative energy supplies as part of the project.

ACTIONS & TARGETS

To achieve points, comply with the following:

- Develop and install on-site energy generation devices utilizing alternative or renewable energy sources.
  - Alternative resources may include cogeneration systems, biogas, biodiesel and advanced coal-based fuels or tar sands that reduce carbon emissions through carbon sequestration or other methods that can mitigate the carbon sources. Hydrogen-based fuels can also be refined from coal-based fuels and used provided the carbon has been sequestered or contained from the atmosphere.
  - Renewable resources include wind, solar, tidal, geothermal and newly developed techniques or energy systems that are not based on petroleum fuels and are carbon neutral during operation.

TECHNICAL APPROACHES

- Determine readily available sources of renewable or alternative energy such as, but not limited to, biogas, solar, wind, tidal, geothermal or coal gasification.
- To minimize costs, investigate energy tax credits by local utilities or federal, state or local agencies.
- Investigate cogeneration of power.
- Implement discrete photovoltaic power source (non-glare) for outlying equipment, ancillary buildings and parking and site lighting.
- Use non-glare solar powered signs, lighting and water heaters.
- Include solar trombe-walls for passive solar heating.
- Install geothermal heating and cooling systems.
- Utilize wind power where appropriate.
- Design for building-integrated photovoltaic cells.
- Utilize fuel cells.
- For solar projects, minimize glare.
- Conduct a life-cycle assessment of the alternative or renewable energy system to ensure a cumulative positive impact on the environment, economy and community.

POINT ALLOCATION

6 Potential Planning & Design Points

- Points are awarded depending on the percentage of the total energy for the final project (after optimization) supplied by on-site power generation with the following schedule:
  - 2.5% Energy Generated = 1 pt
  - 5% Energy Generated = 2 pt
  - 10% Energy Generated = 3 pt
  - 15% Energy Generated = 4 pt
  - 25% Energy Generated = 5 pt
  - 40% Energy Generated = 6 pt

BENEFITS

- Reduces energy costs and buffers against volatile energy markets.
- Decreases carbon footprint and air pollution.
- Stabilizes energy-dependent economy from foreign affairs.
- Reduces environmental impacts related to energy production.
- Increases economy of scale to reduce costs of alternative energy.
- Increases research in additional alternative energy production.

DOCUMENTATION

- Equipment specification submittal specifying alternative energy equipment.
- Calculations showing percentage of alternative and/or renewable energy generated compared to the optimized energy design (PD12-EC-3, Energy Optimization) or the baseline energy demand (PD12-EC-1, Energy Management Plan) if energy optimization is not included in the project.

PD13-EI-1 Emission Impact Evaluation & Mitigation: Refrigerant Management/Ozone Protection – Planning & Design

INTENT

Reduce the use of gases and chemicals that contribute to ozone depletion.

ACTIONS & TARGETS

To meet requirements, comply with the following:

- If upgrading an existing building that currently uses non-compliant refrigerants and equipment, replace such equipment to achieve compliance; AND
- Determine feasibility of designing HVAC&R equipment that makes use of alternative or substitute refrigerants; AND
- Confirm equipment is exempt from South Coast Air Quality Management District (SCAQMD) permitting by reviewing Rule 219. (See most recent Addendum); AND
- Comply with the requirements of Section 608 of the Clean Air Act, National Recycling and Emission Reduction Program. (See most recent Addendum); AND
- Comply with the requirements of SCAQMD Rule 1415, Reduction of Refrigerant Emissions from Stationary Refrigeration and Air Condition Systems. (See most recent Addendum).

TECHNICAL APPROACHES

- Eliminate equipment that utilizes chlorofluorocarbons (CFC) and hydrocholorofluorocarbon (HCFC) refrigerants.
- Use evaporative cooling.
- Select HVAC&R with a reduced refrigerant charge.
- Specify new base building HVAC equipment that uses no CFC or HCFC refrigerants.
- Conduct an inventory to identify equipment that uses CFC and HCFC refrigerants and adopt a replacement schedule for these refrigerants when reusing existing HVAC systems.

POINT ALLOCATION

1 Potential Planning & Design Point

BENEFITS

- Reduces ozone destruction.
- Creates a healthier ozone layer to block out harmful ultraviolet (UV) rays and electromagnetic (EM) radiation.
- Streamlines compliance or exemption from SCAQMD Refrigerant requirements (Rule 1415).
- Reduces greenhouse gas (GHG) emissions, commonly used in refrigeration systems, with high global warming potentials (GWP).

DOCUMENTATION

- Documentation included in a facility-wide Registration Plan, in accordance with SCAQMD Rule 1415.
- Documentation of sources of refrigerant sales and sales certification.
- Documentation of the use and replacement of sources of potential hydrofluorocarbons (HFC) and perfluorocarbons (PFC) and calculate the reduction in ozone depleting emissions.

PD13-EI-2 Emission Impact Evaluation & Mitigation: Greenhouse Gas Emissions – Planning & Design

INTENT

Understand potential greenhouse gas (GHG) emissions from the final project and develop mitigation measures to reduce potential new or cumulative impacts.

ACTIONS & TARGETS

To meet requirements, comply with the following:

- Conduct a GHG Impact Evaluation of potential GHG emissions from direct emission sources expected from the completed project, to be included in the LAWA site-wide inventory per California Assembly Bill 32 (AB32) requirements. (See most recent Addendum); OR
- Conduct a GHG Impact Evaluation of potential GHG emissions from direct and indirect emission sources expected from the completed project, to be included in the LAWA site-wide inventory, making use of (International Organization for Standardization (ISO) 14064 Part 1 methodologies along with the World Resources Institute (WRI) GHG protocol. (See most recent Addendum). The Impact Evaluation will include sources required per AB32 regulations in addition to other direct and indirect sources per the WRI GHG protocol. To ensure consistency with AB32 requirements, an operational organizational boundary should be assumed; AND
- Estimate potential electricity consumption expected from the completed project, to be included in the LAWA site-wide inventory per AB32 requirements; AND
- Assess feasibility of including GHG reduction measures in the project design, specifically energy consumption reduction, reuse or alternatives such as solar energy generation; AND
- Develop a GHG baseline impact evaluation for Scope 1 (direct) and Scope 2 (indirect) emissions, as defined by WRI. Achieve at least a 25% reduction in GHG emissions for the final project compared to the GHG baseline. The baseline energy evaluation (PC12-EC-1) should serve as the basis for the GHG baseline.

TECHNICAL APPROACHES

- Identify design changes to mitigate GHG emissions of the final project.
- Obtain and implement a VALE grant.

POINT ALLOCATION

2 Potential Planning & Design Points

BENEFITS

- Reduces overall GHG emissions from the final project.
- Streamlines compliance with national, state, regional or local mandatory or voluntary annual GHG reporting that may be required for the entire LAWA site, for example the requirements of AB32, the Western Climate Initiative (WCI), the Climate Registry or other developing programs.
- Streamlines compliance with voluntary or mandatory cap and trade programs either in conjunction with the future requirements being developed in accordance with AB32, or other programs such as WCI and the Climate Registry.
- Potential for cost-effective, energy-efficient alternatives that can reduce long-term operational costs.

DOCUMENTATION

- GHG Impact Evaluation, per AB32 requirements to be included in the LAWA site-wide inventory if required per AB32; OR
- GHG Impact Evaluation, following ISO 14064 Part 1 methodologies and the WRI GHG protocol requirements, to be included in the LAWA site-wide inventory if LAWA not required to report per AB32. Impact Evaluation should be verifiable per ISO 14064 Part 3 by a second party verifier following ISO 14065 methodologies and standards. (See most recent Addendum); AND

PD13-EI-2 continued on next page.

PD13-EI-2 (CONT.) Emission Impact Evaluation & Mitigation: Greenhouse Gas Emissions – Planning & Design

DOCUMENTATION (CONT.)

- Documentation of available mitigation measures for use in GHG emission discussions or potential California Environmental Quality Act (CEQA) documentation.
- Calculations showing a 25% reduction in GHG emissions for the final project compared to the GHG baseline evaluation.

ACKNOWLEDGMENTS

or as updated in the Addendum

- California Air Resources Board, 2007. "Staff Report: Initial State of Reasons for Rulemaking, Public Hearing to Consider Mandatory Reporting of Greenhouse Gas Emissions Pursuant to the California Global Warming Solutions Act of 2006 (Assembly Bill 32)", October.
- ISO, 2006. "Greenhouse Gases – Part 1: Specification with guidance at the organizational level for quantification and reporting of greenhouse gas emissions and removals"; International Standard ISO 14064-1, First Edition 2006-03-01.
- ISO, 2006. "Greenhouse Gases – Part 3: Specification with guidance for the validation and verification of greenhouse gas assertions"; International Standard ISO 14064-3, First Edition 2006-03-01.
- ISO, 2007. "Greenhouse Gases – Requirements for greenhouse gas validation and verification bodies for use in accreditation or other forms of recognition"; International Standard ISO 14065, First Edition 2006-04-15.
- The Climate Registry, 2008. "General Reporting Protocol v1.1." Data retrieved from www.theclimateregistry.org/protocols/general-reporting-protocol.php

PD13-EI-3 Emission Impact Evaluation & Mitigation: Criteria & Air Toxics – Planning & Design

INTENT

Understand potential criteria and air toxics emissions from proposed designs and structures, ensure consistency with regulatory requirements and develop mitigation measures to reduce potential new or cumulative impacts.

POINT ALLOCATION

1 Potential Planning & Design Point

ACTIONS & TARGETS

To meet requirements, comply with the following:

- Conduct an Air Emissions Impact Evaluation for the future design build-out for criteria emissions using the most recent available version of the Urbemis Model. (See most recent Addendum); AND
- If the potential exists for toxic emissions that would require permitting through the South Coast Air Quality Management District (SCAQMD) and therefore a Rule 1401 Air Toxics Analysis, conduct an Air Toxics Impact Evaluation in accordance with the procedures detailed in SCAQMD Rule 1401. (See most recent Addendum); AND
- Assess feasibility of including air emission reduction measures as part of proposed operations including, but not limited to, providing or adding access to transit services, adding and encouraging bike and pedestrian trails, improving parking and reducing on-road trucks in connection with day-to-day operations; AND
- Develop a baseline impact evaluation using the baseline energy analysis (PD12-EC-1, Energy Management Plan). Achieve a 25% reduction in criteria and air toxics emissions for the final project compared to the baseline.

TECHNICAL APPROACHES

- Conduct an Air Emission Impact Evaluation for the final project based on known emissions sources or based on land use if details not available.
- Identify operational changes to mitigate air emissions such as alternative-fueled equipment, connections to transit and pedestrian/bike paths, improved/available parking and reduced truck trips required for operations.
- Obtain and implement a VALE grant.

BENEFITS

- Reduces overall criteria and air toxics emissions from day-to-day operations.
- Streamlines compliance with current air quality regulations and requirements.

DOCUMENTATION

- Estimation of activities and equipment usage during phases of operation along with approximate criteria and air toxics emissions.
- Documentation of mitigation measures implemented, including alternative fuels used for equipment.
- Air Emissions Impact Evaluation.
- Calculations showing a 25% reduction in criteria and air toxics emissions for the final project compared to the baseline impact evaluation.

PD14-MR-1 Materials & Resources: Waste Reduction & Management Plan

INTENT

For the full-build out of the project, determine what design elements and infrastructure are needed to facilitate efficient waste reduction, recycling and reuse during operation. This performance standard applies to both building and non-building projects and should not address waste management during construction, which is covered in performance standards CN6-WM-1 and CN6-WM-2.

POINT ALLOCATION

1 Potential Planning & Design Point

ACTIONS & TARGETS

To meet requirements, comply with the following:

- Develop a Waste Reduction and Management Plan for the final project, including a listing of spatial allocation, infrastructure and equipment that is needed; AND
- Include a review of waste reduction and management implications as a project team meeting agenda item during conceptual/ schematic design phase. Document likely waste streams, categories and strategies for minimizing volume. Identify planning and design changes that can facilitate proper waste reduction and management; AND
- Identify a baseline, if feasible, for waste streams; AND
- Identify potential waste category harvesters. Include contact information in project Operation and Maintenance (O&M) Manual (PD16-PC-1, Operation & Maintenance Program); AND
- Develop an education program for end-users on waste reduction opportunities and policies during commissioning and highlight design features and infrastructure; AND
- For buildings, identify categories of potentially reusable/recyclable materials and set up comprehensive recycling activities, including the following activities:
  - Identify local/municipal recycling practices and procedures (i.e., one-stream/two-stream, hauling program, documentation, etc.); AND
  - Provide one or more designated areas for the collection and storage of non-hazardous materials for recycling, including but not limited to paper, cardboard, glass, plastics, metals, batteries, light bulbs, toner cartridges, tires and electronics including cathode ray tube (CRT) monitors; AND
  - Evaluate the efficiency of developing a Materials Recycling Facility (MRF) on-site at the airport, to include separate lines, cardboard balers, can crushers, recycling chutes and/or conveyors and other technologies as applicable.

BENEFITS

- Limits costs of waste disposal.
- Maximizes diversion of waste to landfills and incinerators.

DOCUMENTATION

- Waste Reduction and Management Plan.
- Tabulation of potential waste streams and reduction/management strategy for each.
- For buildings, documentation showing designated areas for the collection and storage of recyclables.
- Copy of materials used for educating the project end-users.
- Section of O&M Manual addressing the Waste Reduction and Management Plan.

PD14-MR-1 continued on next page.

PD14-MR-1 (CONT.) Materials & Resources: Waste Reduction & Management Plan

TECHNICAL APPROACHES

- Include training on waste reduction for the project team as part of the Initial Sustainability Project Planning Meeting.
- Provide appropriate space for recycling receptacles and dumpsters for segregating waste streams and facilitating recycling.
- Design for "recycling stations" located throughout the final project, if applicable, to streamline the segregation and management of waste streams.
- Design to comply with American Society of Testing and Materials (ASTM) E2129-05 and the EPA's Green Purchasing Guidelines. (See most recent Addendum).
- Audit similar waste streams to determine the waste baseline.
- Educate building occupants on waste reduction policies.
- Review existing facilities to identify optimal location(s) for recyclables storage.
- Comply with requirements of the latest version of LEED® components for waste management. (See most recent Addendum). Refer to the California Integrated Waste Management Board for estimated solid waste generation rates and the Solid Waste Characterization Database. (See most recent Addendum).
- Coordinate recyclable collection infrastructure with hauler capability.
- Specify cardboard balers, aluminum can crushers, recycling chutes and other technologies.
- Allow for program expansion.
- Design infrastructure for the following recyclables:
  - Plastic
  - Aluminum
  - Glass
  - Paper, newspapers, magazines and cardboard
  - Carpet
  - Food waste
  - Gas & oil filters
  - Motor oil and anti-freeze
  - Scrap metal
  - Batteries
  - Light bulbs
  - Toner cartridges
  - Tires
  - Packing materials
  - Electronics
  - Rubber removed from runways
  - Other as identified by Owner

PD14-MR-2 Materials & Resources: Material Durability

INTENT

Direct decisions regarding construction material choices toward maximum practical levels of durability, Selecting products with high design service life, extending material life and minimizing maintenance and replacement cycles.

POINT ALLOCATION

3 Potential Planning & Design Points

ACTIONS & TARGETS

To achieve points, comply with the following:

- Develop a list of prioritized/preferred high durability materials and include in the specifications; AND
- Adjust standard capital project budget estimating norms to account for higher material first costs, if applicable.

TECHNICAL APPROACHES

- Assemble existing baseline cost data by hours and total cost for daily and periodic/cyclical facility cleaning and maintenance.
- Review engineering standards for building systems equipment subject to period maintenance or replacement (e.g., air handler motors and belts, pumps and valves, luminaries or switches) to identify potential durability upgrades that would measurably reduce life cycle maintenance costs.
- Avoid products that require frequent replacement or regular maintenance to reduce future waste, including landscaping materials.
- Utilize plastic lumber for greater material durability.
- Use asphalt containing recycled tires to achieve a longer life cycle and reduce required maintenance.
- Specify more durable, longer lasting materials and finishes to extend material life and reduce maintenance requirements.

BENEFITS

- Saves capital construction funds over facility lifecycle due to reduced component replacement.
- Reduces operational costs from reduced regular maintenance requirements.
- Increases perceived value of capital program expenditures.

DOCUMENTATION

- List of materials that were selected based on durability and a description for each material outlining the advantages of using that material in regards to durability.
- Comparison of industry standard materials versus high quality/ durability materials. It should include a life cycle analysis and cost comparison.

ACKNOWLEDGMENTS

or as updated in the Addendum

- USEPA. GreenScapes. Data retrieved from www.epa.gov/greenscapes

PD14-MR-3 Materials & Resources: Building Reuse

INTENT

Extend the life cycle of existing building stock, conserve resources, retail cultural resources, reduce waste and reduce environmental impacts of new buildings as they relate to materials manufacturing and transport.

POINT ALLOCATION

3 Potential Planning & Design Points

ACTIONS & TARGETS

To achieve points, comply with the following:

- Develop/update LAWA airport(s) Master Plans taking into account opportunities for reuse, re-tasking or relocation of existing facilities inventory to address changes in agency functions, capacities or requirements; AND
- Review individual facility replacement plans; perform due diligence with regard to potential reuse of existing inventory rather than new construction.

TECHNICAL APPROACHES

- Challenge facilities-planning staff and/or consultants to think "outside the box" before advocating the expediency of demolition for existing facilities.
- Relocate or reuse existing structures.

BENEFITS

- Potential capital construction cost savings.
- Minimizes loss of embedded energy.
- Minimizes use of fossil and other non-renewable energy sources in the transport of materials to the project site.

DOCUMENTATION

- Documentation of quantities of targeted existing building components prior to selective demolition.
- Records of quantities of materials removed from existing facilities, documenting reuse, recycling and diversion from a landfill.
- Documentation requirements of the relevant performance standards of the latest version of LEED®. (See most recent Addendum).

ACKNOWLEDGMENTS

or as updated in the Addendum

- USGBC, 2005. LEED® for New Construction and Major Renovations Version 2.2, October.

PD14-MR-4 Materials & Resources: Material Reuse

INTENT

Design for the reuse of existing materials, products and equipment to reduce demand for virgin materials and thereby reduce waste and energy and environmental, social and economic impacts associated with the extraction and processing of virgin resources.

POINT ALLOCATION

2 Potential Planning & Design Points

ACTIONS & TARGETS

To achieve points, comply with the following:

- Design to the requirements of the latest LEED® standards in regards to material reuse. (See most recent Addendum).

TECHNICAL APPROACHES

- Include contact information for the following in standard Division 1 project specifications: the California Materials Exchange from California's Integrated Waste Management Board and the Salvaged Building Materials Exchange. (See most recent Addendum).
- Reuse the following major components:
  - Aggregate and fly-ash in cast in place concrete
  - Bituminous concrete pavement
  - Unit pavers
  - Soil and vegetation
  - Steel reinforcement
  - Structural and miscellaneous steel
  - Steel fencing and furnishings
  - Unit masonry
  - Ductile iron pipe
  - Aluminum products
  - Site-generated broken concrete for gabions
  - Steel doors and frames
  - Aluminum doors and windows
  - Plaster
  - Terrazzo
  - Acoustical ceilings
  - Drywall
  - Carpet and resilient flooring
  - Toilet and shower compartments
  - Equipment
  - Sheet metal ductwork
  - Site lighting

BENEFITS

- Potential capital construction cost savings in some circumstances.
- Minimizes loss of embedded energy.
- Minimizes use of fossil and other non-renewable energy sources in the harvesting of raw materials, the manufacture of components and their transport to the project site.

DOCUMENTATION

- Documentation of estimated quantities of existing targeted materials and components prior to modifying existing structure(s).
- Documentation of quantities of categorized materials removed and/or replaced.
- Documentation requirements of the relevant performance standards in the latest version LEED®. (See most recent Addendum).

ACKNOWLEDGMENTS

or as updated in the Addendum

- USGBC, 2005. LEED® for New Construction and Major Renovations Version 2.2, October.

PD14-MR-5 Materials & Resources: Recycled Content

INTENT

Increase use of products that incorporate recycled content materials, thereby reducing impacts resulting from extraction and processing of virgin materials.

POINT ALLOCATION

2 Potential Planning & Design Points

ACTIONS & TARGETS

To achieve points, comply with the following:

- Use materials with recycled content such that the sum of post-consumer recycled content plus one-half of the pre-consumer content constitutes meet the requirements of the latest LEED® standards. (See most recent Addendum).

BENEFITS

- Minimizes loss of embedded energy from the discarding of materials that could be recycled/re-manufactured.
- Minimizes use of fossil and other non-renewable energy sources in the harvesting of raw materials and the manufacture of components.

TECHNICAL APPROACHES

- Establish the appropriate project goal for recycled content materials.
- Include contact information in project specifications for reference and search tool such as the Guide to Resource-Efficient Building Elements from the Center for Resourceful Building Technology, the Recycled Content Product Directory from the California Integrated Waste Management Board and Oikos. (See most recent Addendum).

DOCUMENTATION

- Documentation requirements of the relevant performance standards of the most recent version of LEED®. (See most recent Addendum).
- Provide technical fact sheets on available materials with recycled content to facilitate their inclusion in projects.

ACKNOWLEDGMENTS

or as updated in the Addendum

- USGBC, 2005. LEED® for New Construction and Major Renovations Version 2.2, October.

PD14-MR-6 Materials & Resources: Design Roads for Increased Life Cycle

INTENT

Maximize roadway life cycle to reduce embodied energy requirements, reduce future construction and repair related environmental degradation.

POINT ALLOCATION

2 Potential Planning & Design Points

ACTIONS & TARGETS

To achieve points, comply with the following:

- Meet credit requirements for University of Washington (UW) Greenroads credit PT-1, Long Life Pavement Design on new or altered roads. (See most recent Addendum); AND
- Meet credit requirements for UW Greenroads credit PR-8, Pavement Life Cycle Assesment on new or altered roads. (See most recent Addendum); AND
- Meet credit requirements for UW Greenroads credit PR-6, Paving Construction Quality Control on new or altered roads. (See most recent Addendum); AND
- Meet credit requirements for UW Greenroads credit CA-1, Quality Management System on new or altered roads. (See most recent Addendum).

BENEFITS

- Reduces liability of airports for collisions caused by damaged roads.
- Decreases maintenance costs.
- Reduces Change Orders/Stop Work incidences that could potentially increase project costs.
- Reduces future cost and environmental impact from repairs/ rebuilding.
- Minimizes embodied carbon footprint.

TECHNICAL APPROACHES

- Perform a pavement Life Cycle Analysis for each potential paving strategy.
- Use rubberized pavements or innovative pavement treatments to improve durability.
- Design to meet long life pavement design criteria.
- Ensure that quality contractors are used in roadway construction.
- Use warm-mix asphalt.

DOCUMENTATION

- Use UW Greenroads credit documentation for each credit.

ACKNOWLEDGMENTS

or as updated in the Addendum

- University of Washington (UW) Greenroads

PD14-MR-7 Materials & Resources: Regional Materials

INTENT

Increase the demand for materials and products that are extracted and manufactured within the region, thereby supporting the use of indigenous resources and reducing the environmental impact resulting from transportation.

POINT ALLOCATION

2 Potential Planning & Design Points

ACTIONS & TARGETS

To achieve points, comply with the following:

- Meet the requirement that 10-20% of the cost of the project is from regional materials and products

TECHNICAL APPROACHES

- Establish the appropriate project goal for regional materials utilization.
- Evaluate materials for their potential origin from regional sources including: concrete, architectural precast concrete, asphalt, structural steel, unit masonry, stone masonry, post-industrial content gypsum board, concrete pipe, manholes and handholes, electrical duct banks, cable, gas and water piping and landscape material and seed.
- Allow longer lead times for local companies to supply materials.
- Specify Mechanical/Electrical/Plumbing (MEP) equipment and components for buildings.
- Develop an inspection plan to ensure that the specified regional materials are installed.

BENEFITS

- Reduces use of fossil fuels and cost in the transport of materials and components.
- Stimulates the growth of local and regional economies.

DOCUMENTATION

- Documentation requirements of the relevant performance standards of the latest version of LEED®. (See most recent Addendum).

ACKNOWLEDGMENTS

or as updated in the Addendum

- USGBC, 2005. LEED® for New Construction and Major Renovations Version 2.2, October.

PD14-MR-8 Materials & Resources: Rapidly Renewable Materials

INTENT

Reduce the use and depletion of finite raw materials and long-cycle renewable materials.

POINT ALLOCATION

3 Potential Planning & Design Points

ACTIONS & TARGETS

To achieve points, comply with the following:

- Develop a preliminary/baseline calculation identifying potential incorporation of rapidly renewable materials (RRMs) into project scope and/or design; AND
- Identify and conform to the appropriate target content level in accordance with the latest LEED® standards. (See most recent Addendum).

TECHNICAL APPROACHES

- Establish the appropriate project goal for renewable materials utilization.
- Consider temporary construction materials.
- Evaluate materials options for their potential to be provided from rapidly renewable sources including: concrete formwork, poplar OSB, “agriboard,” sunflower seed board, bamboo flooring, cork, wool carpets and fabrics, cotton batting insulation, linoleum flooring, bio-based plastics, wheat grass or straw board carpentry.
- Include contact information for the following in project specifications: GreenSpec, from BuildingGreen, Inc. and Oikos. (See most recent Addendum).

BENEFITS

- Reduces the use of long-cycle renewable materials and thereby reduces the depletion of these materials.
- Encourages the use and advances the markets for rapidly renewable materials.

DOCUMENTATION

- Project’s total project cost or total materials cost.
- Review the final project’s design documents to calculate values of RRMs to be included in the project.
- Provide narrative describing special circumstances or considerations.
- Submit the final calculation of the final percentage of use of RRMs based upon actual project design drawings and specifications.
- Meet the documentation requirements of the relevant performance standards of the latest version of LEED®. (See most recent Addendum).

ACKNOWLEDGMENTS

or as updated in the Addendum

- USGBC, 2005. LEED® for New Construction and Major Renovations Version 2.2, October.

PD14-MR-9 Materials & Resources: Certified Wood

INTENT

Encourage environmentally responsible forest management practices.

POINT ALLOCATION

2 Potential Planning & Design Points

ACTIONS & TARGETS

To achieve points, comply with the following:

- Meet the requirement that 10-20% of the cost of the project is FSC-derived products.

TECHNICAL APPROACHES

- Establish a goal for FSC-certified wood products for the project and identify suitable suppliers.
- Include contact information for the following in project specifications: Forest Stewardship Council, United States. (See most recent Addendum).
- Specify construction materials, finish products and temporary construction materials that meet the goal.
- Consider temporary construction materials when developing the inventory of wood components.
- Develop an inspection program to ensure that the FSC-certified wood products are installed.

BENEFITS

- Ensures sufficient supply of forest-based products and materials, primarily wood.
- Reverses the trend toward deforestation due to less sustainable forest management practices.
- Reduces deforestation in global efforts to curb greenhouse gas emissions.

DOCUMENTATION

- List of FSC-derived products included in the project.
- Contact information from vendors of products identified as utilizing FSC-certified forestry operations.
- Documentation requirements of the relevant performance standards of the latest version of LEED®. (See most recent Addendum).

ACKNOWLEDGMENTS

or as updated in the Addendum

- USGBC, 2005. LEED® for New Construction and Major Renovations Version 2.2, October.

PD14-MR-10 Materials & Resources: Wood Preservatives

INTENT

Reduce the requirements for and use of preservative-treated wood.

POINT ALLOCATION

2 Potential Planning & Design Points

ACTIONS & TARGETS

To achieve points, comply with the following:

- Specify in bid documents that the use of CCA (copper chromate arsenate or "wolmanized") lumber is prohibited; AND
- Specify and verify the use of lumber treated with borate-based chemicals for dry conditions; AND
- Prohibit the use of creosote-coated lumber; AND
- During construction phase, verify the certification stamps indicating ACQ (ammoniacal copper quaternary) treated lumber for wet and/or in-ground conditions and compile an inspection summary.

TECHNICAL APPROACHES

- Prohibit the use of copper chromate arsenate lumber.
- Prohibit the use of creosote-coated lumber.
- Reduce the requirements for preservative-treated wood.
- Utilize ammoniacal copper quaternary for wet conditions.
- Use lumber that is treated with less toxic, borate-based chemicals for dry conditions.
- Prohibit the use of creosote to treat ground contact members.

BENEFITS

- Eliminates the use of arsenic-based wood preservatives and removes an additional pollutant from soils and groundwater ecosystems.

DOCUMENTATION

- Inspection summary.
- Specifications included in the bid documents.

ACKNOWLEDGMENTS

or as updated in the Addendum

- Port Authority of New York and New Jersey, Engineering Department, 2004. Sustainable Design Guidelines, New Construction, July.

PD14-MR-11 Materials & Resources: Low-Emitting Materials

INTENT

Reduce the quantity of indoor air contaminants that are odorous, irritating and/or harmful to the comfort and well-being of installers and occupants.

POINT ALLOCATION

2 Potential Planning & Design Points

ACTIONS & TARGETS

To achieve points, comply with the following:

- Require the use of low-volatile organic compound (VOC) (or, where applicable, no-VOC) sealants, adhesives, paints, coatings, carpet systems, composite wood or agrifiber products; AND
- Specify that shop-finished materials are to meet the VOC emission requirements, including where applicable, primed steel, finished metals including aluminum, finished millwork and finished steel and wood doors, frames and windows.

TECHNICAL APPROACHES

- Refer to similar standards and/or prohibitions as documented in South Coast Air Quality Management District (SCAQMD) Rule 1168 (Adhesives and Sealants), Rule 1113 (Paints and Coatings) and applicable source-specific SCAQMD standards. (See most recent Addendum).
- Refer to the Carpet and Rug Institute “Green Label” standard for carpet standards. (See most recent Addendum).
- Utilize low-VOC adhesive and sealants.
- Utilize low-VOC field applied paints and coating.
- Utilize low-VOC carpet systems.
- Utilize wood and agrifiber products with no added urea-formaldehyde resins.
- Specify that shop-finished material meet the VOC emission requirements.
- Consider the following materials: primed steel, finished metals including aluminum, finished millwork, finished steel and wood doors and windows.

BENEFITS

- Reduces the emissions into the atmosphere of VOCs that have a negative impact on indoor air quality and the Earth’s atmosphere.
- Potential reduction in absenteeism due to respiratory-related illness.

DOCUMENTATION

- Material Safety Data Sheet (MSDS) for each product documenting VOC levels and highlighting that in each case the product conforms to the applicable VOC level limits.

ACKNOWLEDGMENTS

or as updated in the Addendum

- USGBC, 2005. LEED® for New Construction and Major Renovations Version 2.2, October.

PD14-MR-12 Materials & Resources: Furniture & Building Fixtures

INTENT

Reduce the consumption of energy, the usage of non-sustainable manufacturing process and the use of non-rapidly renewable wood resources in the manufacture of furniture and fixtures.

POINT ALLOCATION

1 Potential Planning & Design Point

ACTIONS & TARGETS

To achieve points, comply with the following:

- Specify the use of reused or salvage furniture for at least 20% of furniture; AND
- Include stipulations of the use of sustainable materials, solvents, adhesives, fabrication processes and coatings in the recycling/re-manufacture of furniture and building fixtures; AND
- Specify furniture and building fixtures with high recycled-material content.

TECHNICAL APPROACHES

- Specify the use of furniture systems that are Greenguard certified. (See most recent Addendum).
- Stipulate the latest version of applicable LEED® credits for each type of furniture, fixture or component (e.g., sustainable forestry practices for wood, low/no-VOC paint and coatings, readily recyclable metal for fittings, etc.). (See most recent Addendum).
- Specify the use of recycled furniture.
- Utilize local organizations that specialize in the reuse of office furniture.

BENEFITS

- Reduces the quantities of longer-replacement cycle hardwoods used in the manufacture of furniture.
- Limits the loss of embedded energy and diversion from landfill of existing furniture and fixtures.
- Potentially minimizes costs associated with the purchase of new furniture and fixtures.

DOCUMENTATION

- Documentation and calculation of the percentage of the use of recycled, reused or salvaged furniture and building fixtures.

ACKNOWLEDGMENTS

or as updated in the Addendum

- USGBC, 2005. LEED® for New Construction and Major Renovations Version 2.2, October.

PD14-MR-13 Materials & Resources: Design for Deconstruction, Reuse & Recycling

INTENT

Reduce environmental, economic and social impacts from resource extraction and manufacturing related to future building needs, upgrades and rebuilding on-site by designing structures with modular, reusable, easily recyclable, and de-constructible components. This performance standard applies to buildings, building fixtures and infrastructure.

POINT ALLOCATION

2 Potential Planning & Design Points

ACTIONS & TARGETS

To achieve points, comply with the following:

- Evaluate potential future uses for the structure and building components; AND
- Specify materials and system with high future value during material palette selection; AND
- Use minimal connector and material whenever possible; AND
- Detail connections for simple disassembly, ensure that connections are accessible; AND
- Design building components on a modular human scale to minimize equipment needed for disassembly.

TECHNICAL APPROACHES

- Minimize load-bearing walls while complying with earthquake design standards.
- Minimize use of chemical (adhesive) connectors; prefer simple friction-based connectors while complying with earthquake requirements.
- Evaluate potential future uses for the land, structure and/or building components.
- Consider the future value of materials and systems during selection.
- Use homogenous material whenever possible.
- Label components clearly and permanently that are meant for reuse where possible, include instructions if necessary. Coordinate with PD16-PC-1, Operations & Maintenance Program.
- Detail connections for disassembly.
- Refer to King County Guide to Design for Disassembly. (See most recent Addendum).
- Design structures that are flexible, for future use, modular, to be structurally reconfigured and made of parts designed to be easily removed and reused.
- Consider structure and component lifecycle.

BENEFITS

- Diverts construction waste from landfills and incinerators.
- Reduces tipping fees.
- Reduces future liability for waste.
- Reduces environmental impacts of producing new construction products and materials.
- Decreases future building costs.
- Increases possibility of reuse/ reorganization of structures.
- Encourages repair/replacement/ reuse of standardized parts.
- Facilitates flexible use of space.

DOCUMENTATION

- Narrative guide to future structure uses, include instructions and plans for internal reconfigurations to meet projected needs, instructions for additions and subtractions to the structure and instructions for disassembly, reuse and recycling of building components.
- Project drawings detailing systems designed to be deconstructed and provide special emphasis on location of connectors.
- Material data sheets for materials designed to be recycled easily.

PD14-MR-14 Materials & Resources: Flexible Systems, Spaces & Infrastructure

INTENT

Create flexible systems, spaces and infrastructure to enhance resource efficiency related to future uses, upgrades and expansions and maximize the life cycle of installed materials.

POINT ALLOCATION

3 Potential Planning & Design Points

ACTIONS & TARGETS

To achieve points, comply with the following:

- Evaluate potential future uses for the structure, building components and mechanical/electrical/plumbing systems; AND
- Specify flexible components of HVAC, electrical and fiber optics and other wiring; AND
- Detail system connectors for future changes, ensuring that connections are accessible; AND
- Strategically locate load-bearing walls.

TECHNICAL APPROACHES

- Design for current needs with the ability to expand into the future. Do not oversize components during initial design phase to account for future build-out.
- Design HVAC system in such a way that it is flexible to expand or downsize it depending on the future need of the space.
- Design AC roof units so additional units may be placed, if necessary in the future.
- Design for additional temperature, electrical, sprinklers and communication zones in a large space so that future renovation work will have adequate services.
- Place entrances and corridors to spaces in such a way that future uses may utilize existing egresses.
- Place windows in new construction projects with appropriate spacing for future placement of dividers or permanent walls.
- Consider structure and component life cycle.
- Create touchdown spaces or other flexible and diverse workspaces to enable expansion as well as ad-hoc collaborations and enhance opportunities for intense, efficient use of facilities.
- Consider the future value of materials and systems during selection.
- Use homogenous material whenever possible.

BENEFITS

- Reduces environmental impacts of producing new construction products and materials.
- Decreases future building costs.
- Increases possibility of reuse/ reorganization/expansion/ downsizing of structures.
- Encourages repair/replacement/ reuse of components within a space.
- Diverts construction waste from landfills and incinerators.
- Reduces future liability for waste.
- Facilitates ease of adaptation to changing technologies and infrastructure requirements.

DOCUMENTATION

- Narrative guide to future structure uses, include instructions and plans for internal reconfigurations to meet projected needs, instructions for additions and subtractions to the structure and instructions for disassembly, reuse and recycling of building components.
- Project drawings that detail systems designed to be expanded or downsized, provide special emphasis on location of connectors.

PD14-MR-14 continued on next page.

PD14-MR-14 (CONT.) Materials & Resources: Flexible Systems, Spaces & Infrastructure

TECHNICAL APPROACHES (CONT.)

- Label components clearly and permanently that are meant for reuse where possible, include instructions if necessary. Coordinate with PD16-PC-1, Operations & Maintenance Program.
- Detail connections for future expansion or downsizing.
- Design spaces that are flexible for future use and that can be structurally reconfigured to either expand or downsize.
- Place load bearing walls in areas that will allow for future reuse without having to relocate them.
- Design for movable or demountable partition systems.

ACKNOWLEDGEMENTS

or as updated in the Addendum

- Green Guide for Healthcare, version 2.2, 2007. Data retrieved from http://www.gghc.org

PD15-IQ-1 Indoor Environmental Quality: Minimum Indoor Air Quality (IAQ) Performance

INTENT

Provide minimum indoor air quality to occupants to maintain occupant comfort, health and well-being and develop a baseline for indoor air quality.

POINT ALLOCATION

1 Potential Planning & Design Point

ACTIONS & TARGETS

To meet requirements, comply with the following:

- Compliance with American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) 62.1-2004, Ventilation for Acceptable Indoor Air Quality. (See most recent Addendum).

TECHNICAL APPROACHES

- Meet the ventilation requirements of the referenced standard.
- Evaluate carbon or electrostatic filters.
- Provide a security monitoring for outdoor air intakes for terminal buildings.
- Determine potential IAQ problems on the site and locate air intakes away from contaminants such as loading areas, exhaust fans, cooling towers, air pollution sources and potential attacks.

BENEFITS

- Increases occupancy productivity through improved occupant health and comfort.
- Reduces health risk associated with stagnant air.
- Enhances occupant experience.

DOCUMENTATION

- Compliance with AHSRAE 62.1-2004 documentation sections.
- Minimum airflow and minimum outdoor airflow calculations.
- Document regional air quality. If regional air quality is not in attainment, submit a description of the methods that are used to treat outdoor air.

ACKNOWLEDGMENTS

or as updated in the Addendum

- USGBC, 2005. LEED® for New Construction and Major Renovations Version 2.2, October.

PD15-IQ-2 Indoor Environmental Quality: Air Quality Monitoring

INTENT

Provide active floor monitoring data to determine if spaces are receiving proper ventilation.

POINT ALLOCATION

2 Potential Planning & Design Points

ACTIONS & TARGETS

To achieve points, comply with the following:

- Install permanent monitoring systems to monitor airflow, temperature, and humidity to each zone; AND
- Configure monitoring equipment to notify or alarm operators and/or the Building Automation System of fluctuations from design point greater than 10%; AND
- Install carbon dioxide (CO_2) sensors between 3 and 6 feet above the floor in active spaces with occupant density greater than 25 people per 1,000 sq. ft.; AND
- For spaces potentially impacted by aircraft emissions, install fuel vapor monitors and integrate with Building Automation System.

TECHNICAL APPROACHES

- Install CO_2 monitors to adjust the HVAC ventilation system automatically.
- Provide real-time control of terminal unit (VAV box) flow rates and total outdoor airflow rates based on CO_2 levels.

BENEFITS

- Increases occupancy productivity through improved occupant health and comfort.
- Reduces health risk associated with stagnant air.
- Enhances occupant experience.
- Ensures adequate airflow to disperse stagnant and unclean air.

DOCUMENTATION

- Equipment specification submittals specifying monitoring equipment.
- Drawings showing locations of monitoring equipment.

ACKNOWLEDGMENTS

or as updated in the Addendum

- USGBC, 2005. LEED® for New Construction and Major Renovations Version 2.2, October.
- City of Chicago, O'Hare Modernization Program, 2003. Sustainable Design Manual, December.

PD15-IQ-3 Indoor Environmental Quality: Increased Effective Ventilation

INTENT

Provide additional ventilation above minimum American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) standard to improve indoor air quality and occupant comfort.

POINT ALLOCATION

2 Potential Planning & Design Points

ACTIONS & TARGETS

To achieve points, comply with the following:

- For mechanical ventilated spaces, increase outdoor air intake flow by 30% above minimum ASHRAE 62.1 standards. (See most recent Addendum).

TECHNICAL APPROACHES

- Select and place air diffusers for mechanically-ventilated spaces, particularly office and terminal spaces, following the recommended design approached in the ASHRAE 2001 Fundamentals, Chapter 32, Space Air Diffusion. (See most recent Addendum).
- Analyze use of heat recovery devices for exhaust air to heat additional outdoor air intake.
- Increase air change effectiveness using:
  - Displacement ventilation in terminal areas
  - Under-floor air distribution in office areas
  - Operable windows and skylights in cargo buildings
  - Increase air movement in cargo facilities with ceiling fans
- Evaluate trickle ventilators in cargo facilities.
- Evaluate relief vents or operable skylights in cargo facilities.
- Use a heat recovery system to mitigate additional energy for additional ventilation.
- Follow the eight design steps from the Carbon Trust Good Practice Guide 237 for naturally ventilated spaces.

BENEFITS

- Increases occupancy productivity through improved occupant health and comfort.
- Reduces health risk associated with stagnant air.
- Enhances occupant experience.
- Ensures adequate airflow to disperse stagnant and unclean air.

DOCUMENTATION

- Minimum outdoor air intake flow calculation according to ASHRAE 62.1.
- Calculations showing design point outdoor air intake flow.
- Calculations showing 30% increase over ASHRAE 62.1 standards.

ACKNOWLEDGMENTS

or as updated in the Addendum

- USGBC, 2005. LEED® for New Construction and Major Renovations Version 2.2, October.

PD15-IQ-4 Indoor Environmental Quality: Indoor Chemical & Pollutant Source Control

INTENT

Minimize occupant exposure to toxic chemical pollutants and hazardous particulates.

POINT ALLOCATION

2 Potential Planning & Design Points

ACTIONS & TARGETS

To achieve points, comply with the following:

- Store chemicals and hazardous products (e.g., powder, particulate, dust, liquid or gas) in isolated and enclosed cabinets; AND
- For spaces designed for non-industrial uses where chemicals and hazardous products are used or contained such as janitorial closets, garages, laundry areas, printing rooms or maintenance bays:
  - Provide additional exhaust rates of 0.50 cfm/sq. ft. with no air recirculation; AND
  - Seal off space with deck-to-deck partitions or hard lid ceilings and self-closing doors. If doors cannot be provided, ensure sufficient exhaust so negative pressure is created in the space with a 10 Pa pressure difference; AND
- Provide permanent entryway system to capture dirt and particulates from entryways into the building directly connected to the outdoors at least 6 feet long in the direction of travel; AND
- Identify chemicals and hazardous products that will be used or potentially used in the building; AND
- Provide a written plan for appropriate storage of non-compatible chemicals in the same space.

TECHNICAL APPROACHES

- Provide a separate exhaust system where spaces are known to use or contain chemicals and hazardous chemicals.
- Provide doors for spaces to avoid high exhaust rates.
- Identify hazardous products or processes that will use hazardous chemicals.
- Evaluate drains plumbed for appropriate disposal of liquid wastes.
- Consolidate central locations for storage of concentrated cleaning chemicals and other pollutant sources.
- Ensure proper ventilations, such as fume hoods, for activities that produce hazardous gasses.

BENEFITS

- Increases occupancy productivity through improved occupant health and comfort.
- Reduces health risk due to uncontrolled exposure to hazardous particulates and chemical pollutants.
- Enhances occupant experience.

DOCUMENTATION

- List of known or potential chemicals to be located in design space and the written plan for storing non-compatible chemicals.
- Electronic As-Built drawings that clearly identify spaces where hazardous products are contained or used with the appropriate modifications listed as requirements.

PD15-IQ-4 continued on next page.

PD 15-IQ-4 (CONT.) Indoor Environmental Quality: Indoor Chemical & Pollutant Source Control

TECHNICAL APPROACHES (CONT.)

- Prohibit the indoor use of combustion engine-based devises without direct exterior exhaust and make-up air.
- Utilize finish materials and assemblies that resist mold growth.
- Design central locations for terminal and office buildings for storage of concentrated cleaning chemicals and other pollutant sources.
- Avoid plants, trees and bushes in building entrance areas.
- Eliminate plants that require pesticides.
- Provide utility outlets such as water and electricity for cleaning.
- Install grates or mats to track dirt before it enters the building.

ACKNOWLEDGMENTS

or as updated in the Addendum

- USGBC, 2005. LEED® for New Construction and Major Renovations Version 2.2, October.

PD15-IQ-5 Indoor Environmental Quality: Lighting Control

INTENT

Maximize personnel lighting needs by providing adjustable lighting for individual spaces and multi-occupant spaces.

POINT ALLOCATION

1 Potential Planning & Design Point

ACTIONS & TARGETS

To achieve points, comply with the following:

- Provide task lighting for 90% of workspaces; AND
- Provide adjustable lighting controls for 90% of individually partitioned spaces.

TECHNICAL APPROACHES

- Install controls that dim or turn lights off at times when daylight is sufficient, such as photoelectric controls.
- Install motion sensors to turn lights off when the space is unused.
- Use direct digital control system for greater accuracy, flexibility and operator interface compared to pneumatic systems.
- Include task lighting for cubicles.
- Consider tying lighting in public areas of terminals to flight schedules.
- Consider designing terminal areas with a variety of light and sound levels.
- Maximize the use of natural daylight.

BENEFITS

- Increases occupancy productivity through improved occupant comfort.
- Increases occupant experience.
- Increases energy efficiency.

DOCUMENTATION

- Electronic As-Built drawings that indicate the location of adjustable and task lighting.
- Verifiable documentation that lighting controls were installed and meet the 90% targets.

ACKNOWLEDGMENTS

or as updated in the Addendum

- USGBC, 2005. LEED® for New Construction and Major Renovations Version 2.2, October.

PD15-IQ-6 Indoor Environmental Quality: Thermal Comfort Design

INTENT

Specify indoor thermal environmental settings based on industry standards and HVAC requirements that will maximize occupant comfort and energy efficiency.

POINT ALLOCATION

1 Potential Planning & Design Point

ACTIONS & TARGETS

To achieve points, comply with the following:

- Develop environmental operations set points for humidity, air temperature, floor temperature and air speed using American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) Standard 55-2004, Thermal Comfort Conditions. (See most recent Addendum). Include these set points in the Operations & Maintenance (O&M) Manual (PD16-PC-1).

BENEFITS

- Increases occupancy productivity through improved occupant comfort.
- Enhances occupant experience.

TECHNICAL APPROACHES

- Fully comply with ASHRAE Standard 55-2004, Thermal Comfort Conditions.
- Analyze the use of heat recovery systems or economizers to recover and reduce energy use while maintaining a comfortable thermal environment and minimizing heating costs.
- Incorporate air curtains or revolving doors at entrances.
- Evaluate humidification in HVAC systems serving office and terminal areas.
- For spaces with humidification, install humidistats.
- Evaluate under-floor air-distribution systems with individual diffusers in office areas.

DOCUMENTATION

- Calculations and environmental operations set points for humidity, air temperature, floor temperature and air speed.
- Documentation verifying that systems were installed and operating as designed and specified.

ACKNOWLEDGMENTS

or as updated in the Addendum

- USGBC, 2005. LEED® for New Construction and Major Renovations Version 2.2, October.

PD15-IQ-7 Indoor Environmental Quality: Daylight & Views

INTENT

Provide views to outdoor spaces to building occupants by introducing natural daylight and unobstructed views to the interior.

POINT ALLOCATION

2 Potential Planning & Design Points

ACTIONS & TARGETS

To achieve points, comply with the following:

- Orient stations or spaces that are occupied by personnel for over two hour intervals such that direct views of the outdoors exist; AND
  - Personnel must have an unobstructed and continuous viewing area of a minimum of 12 sq. ft. to the outdoors from a normal work position.
- 50% of fenestration area should be completely unobstructed with no partitions greater than 4 feet (opaque or transparent) separating fenestration from continuous spaces greater than 500 sq. ft.; AND
- Provide for every 10 sq. ft. of floor space a minimum of 1 sq. ft. of fenestration.

BENEFITS

- Increases occupancy productivity through improved occupant comfort.
- Increases occupant experience.
- Reduces energy use by using daylight instead of artificial light sources.

TECHNICAL APPROACHES

- Maximize natural daylight to reduce lighting needs. Consider building orientation, shallow floor plates, increased building perimeter, floor-to-ceiling heights and ceiling configurations.
- Provide photo-integrated light sensors to dim artificial lights when sufficient daylight is penetrating building.
- Develop lighting and daylight model.
- Design partitioned offices in center of floor plans with windows so a direct view of fenestration can be achieved.
- Use open workstation cubicles or cubical walls lower than 4 feet.
- Avoid HVAC or electrical wiring within 5 feet of outer walls so that ceiling height can be modified to increase viewable fenestration.
- Design building to maximize view opportunities.
- Provide sky or clerestory lighting as appropriate in cargo facilities.
- Coordinate daylight strategy with BAS and lighting control system.
- Provide exterior and interior permanent shading devices.

DOCUMENTATION

- Calculations showing minimum fenestration area.
- Construction drawings and calculations showing 50% of fenestration area is unblocked.
- Drawings showing workstations are oriented such that a direct view to fenestrations can be observed from a typical workstation.

PD15-IQ-7 continued on next page.

PD 15-IQ-7 (CONT.) Indoor Environmental Quality: Daylight & Views

TECHNICAL APPROACHES (CONT.)

- Use shallow floor plates.
- Orient buildings to maximize amount of daytime sunlight through windows.
- Use light colored interior decoration to reflect light.
- Provide spectrally selective glazing to maximize daylight and minimize heat gain.
- Use daylight model or calculations to assess foot-candle levels and daylight factors achieved.

ACKNOWLEDGMENTS

or as updated in the Addendum

- USGBC, 2005. LEED® for New Construction and Major Renovations Version 2.2, October.

PD16-PC-1 Post-Construction Maintenance, Monitoring & Reporting: Operation & Maintenance Program

INTENT

Ensure that adequate information is obtained from the planning, design and construction teams to set-up an effective Operation and Maintenance (O&M) program. Establish procedures and process for systems operation.

ACTIONS & TARGETS

To meet requirements, comply with the following:

- Compile an O&M Manual for major systems. The O&M Manual shall be written in lay terms and, in addition to equipment submittals, provide a summary of step-by-step instructions for operation and maintenance, checklists, schedules and data log sheets to facilitate the proper operation and maintenance of the systems and a description of how each system affects other systems; AND
- Specify the participation of the personnel preparing the O&M Manual in the facility commissioning; AND
- Obtain and review the full commissioning documents, including the information for system start-up. Include commissioning information in the O&M Manual. Coordinate with PD12-EC-2, Energy Systems Commissioning; AND
- For the maintenance program(s), incorporate features of reactive, preventative, predictive and reliability-centered maintenance, depending on the criticality of the system or equipment; AND
- Provide comprehensive training to appropriate personnel; AND
- In the O&M Manual, include a requirement and comprehensive instructions for displaying a hard copy for interested parties and updating the Manual annually.

TECHNICAL APPROACHES

- Good facility O&M starts with complete system information and trained building operators. Operators should participate in start-up and commissioning to help them develop the understanding they need to operate the system in accordance with the design intent.
- Providing a full set of design and construction documentation will provide the system operators with the information they need to maintain the equipment as the manufacturer recommends.
- Writing and following a maintenance plan for the facility will increase system efficiency and reduce system downtime. A good plan will evaluate each component of each system and incorporate the proper maintenance strategy to minimize unnecessary maintenance while maximizing system up time.

POINT ALLOCATION

2 Potential Planning & Design Points

BENEFITS

- A well run O&M program targeting energy efficiency can save an estimated 5% to 20% on energy bills without a significant capital investment. In addition to energy/ resource savings, a well-run O&M program:
  - Increases the safety of staff, as properly maintained equipment is safer equipment.
  - Ensures the comfort, health and safety of users through properly functioning equipment to provide a healthy indoor environment.
  - Confirms that the design life expectancy of equipment is achieved.
  - Facilitates the compliance with federal legislation such as the Clean Air Act and the Clean Water Act.

DOCUMENTATION

- Hard copy or computer-based O&M Manual for major systems.
- Complete set of commissioning documents including equipment start-up forms signed by the contractor and commissioning agent.
- Complete test and balance report for the facility.
- Complete set of record drawings showing the facility as constructed.
- Evidence of training, including an attendance sheet, dates of training and material covered during training.
- Written protocols for providing access to the O&M Manual and updating the Manual on an annual basis.

PD16-PC-1 continued on next page.

PD16-PC-1 (CONT.) Post-Construction Maintenance, Monitoring & Reporting: Operation & Maintenance Program

TECHNICAL APPROACHES (CONT.)

- Specify the development of a comprehensive O&M Manual, including record logs, for systems and operations:
  - Central building automation system
  - HVAC system equipment
  - Lighting controls and sensors
  - Refrigeration systems
  - Vertical transport
  - Building envelope
  - Emergency power generators and automatic transfer switching
  - Uninterruptible power supply systems
  - Plumbing and fixtures
  - Life safety system; fire protection fire alarm, egress pressurization; lighting protection
  - Domestic and process water pumping and mixing systems
  - Equipment sound control systems
  - Data and communication systems
  - Paging systems
  - Security systems
  - Irrigation systems

ACKNOWLEDGMENTS

or as updated in the Addendum

- USDOE, 2004. Operations & Maintenance Best Practices – A Guide to Achieving Operational Efficiency, Release 2.0; Prepared by Pacific Northwest National Laboratory for the Federal Energy Management Program, July.
- Portland Energy Conservation, Inc. (PECI), 1999. Fifteen O&M Best Practices.

PD16-PC-2 Post-Construction Maintenance, Monitoring & Reporting: Staff Training

INTENT

Ensure that the staff that will be responsible for operating and maintaining the building and infrastructure are aware of the design intent and proper operation of the installed systems.

POINT ALLOCATION

1 Potential Planning & Design Point

ACTIONS & TARGETS

To meet requirements, comply with the following:

- Require operation and maintenance (O&M) staff of the final project to attend training classes to increase understanding of building and infrastructure operations and to keep current with the evolving technologies.

TECHNICAL APPROACHES

- Specify the execution of a comprehensive training program(s) for appropriate staff that covers aspects of building operations and maintenance.
- Include O&M staff in the building design meetings to capture their perspective and ideas.
- Require building staff participation during commissioning, testing and balancing activities.

BENEFITS

- Transfers knowledge of sustainability concepts that were developed during design to the staff that will be operating the building.
- Reduces energy usage due to more precise building operation.
- Provides a more comfortable environment for the building occupants.

DOCUMENTATION

- Documentation verifying that the training requirements in the Equipment, Controls, Test & Balance and Commissioning sections of the specifications were achieved.
- Written sequences of operations for systems consuming energy. Coordinate with PD16-PC-1, Operation & Maintenance Program.

ACKNOWLEDGMENTS

or as updated in the Addendum

- Portland Energy Conservation, Inc. (PECI), 1999. Fifteen O&M Best Practices.

PD16-PC-3 Post-Construction Maintenance, Monitoring & Reporting: Systems Monitoring

INTENT

Prepare to verify that the building systems are operating in accordance with the design intent and quickly identify when a system is not operating within parameters so that corrective actions can be taken.

POINT ALLOCATION

2 Potential Planning & Design Points

- See Actions & Targets for further breakdown of points.

ACTIONS & TARGETS

To achieve points, comply with the following:

- Develop and implement a Measurement and Verification Plan (M&VP) that incorporates the monitoring information from the monitored end-uses and is consistent with Option B, C or D of the 2001 International Performance Measures & Verification Protocol (IPMVP) Volume III, Part 1: Concepts and Practices for Determining Energy Savings in New Construction. (See most recent Addendum); AND
- For an additional point, implement M&VP and report data from the first year.

TECHNICAL APPROACHES

- Develop and implement an M&VP that incorporates the monitoring information from the monitored end-uses and is consistent with Option B, C or D of the 2001 International Performance Measurement & Verification Protocol (IPMVP) Volume I: Concepts and Options for Determining Energy and Water Savings. (See most recent Addendum).
- Include energy efficient operation in the M&VP; use system monitoring to test the effectiveness of the Plan.
- Use the results from the first year of operation to set goal for more efficient operation.
- Use the results from the first year of operation to identify when a systems performance is deteriorating.
- Specify the submission of a report following the first year of project end-use.

BENEFITS

- Verifies energy savings from the advanced design approaches.
- Minimizes energy bills by quickly identifying system malfunctions.
- Establishes an energy usage baseline so that future changes can be quantified.

DOCUMENTATION

- Measurement and Verification Plan.
- Measurement and Verification Report following the first year of project end-use.

ACKNOWLEDGMENTS

or as updated in the Addendum

- International Performance Measurement & Verification Protocol (IPMVP), 2001. Volume III, Part 1: Concepts and Practices for Determining Energy Savings in New Construction.
- Portland Energy Conservation, Inc. (PECI), 1999. Fifteen O&M Best Practices.
- Portland Energy Conservation, Inc. (PECI), 1999. Putting the “O” Back in O&M.

PD16-PC-4 Post-Construction Maintenance, Monitoring & Reporting: Recommissioning

INTENT

Ensure system performance is maintained for the life of the building.

POINT ALLOCATION

1 Potential Planning & Design Point

ACTIONS & TARGETS

To achieve points, comply with the following:

- Develop a Recommissioning Plan in accordance with A Retrocommissioning Guide for Building Owners, Portland Energy Conservation, Inc. (PECI), 2007 that stipulates recommissioning at least every 5 years, or whenever a renovation or change of use occurs. (See most recent Addendum).

TECHNICAL APPROACHES

- Re-conduct commissioning of system to optimize system performance.
- Include recommissioning of affected systems as part of building modification or addition.
- Re-commission systems when building energy usage deviates from the planned energy usage.

BENEFITS

- Improves the overall performance by optimizing energy efficient design features and directly addressing equipment performance and system integration issues.
- Ensures that operating and maintenance staff has the knowledge and documentation needed to operate and maintain the building.
- Increases occupancy productivity through improved comfort.

DOCUMENTATION

- Recommissioning Plan.

ACKNOWLEDGMENTS

or as updated in the Addendum

- Portland Energy Conservation, Inc. (PECI), 2007. A Retrocommissioning Guide for Building Owners.

PD16-PC-5 Post-Construction Maintenance, Monitoring & Reporting: Emission Reduction Reporting

INTENT

Capture emission reductions from energy efficiency improvements and other operational changes.

ACTIONS & TARGETS

To achieve points, comply with the following:

- Calculate GHG, criteria and air toxics emissions for the first year of operation and compare to the projected impact evaluations calculated as part of PD13-EI-2, Greenhouse Gas Emmissions - Planning & Design and PD13-EI-3, Criteria & Air Toxics - Planning & Design; AND
- Based on calculations, identify largest sources of GHG emissions and develop a mitigation plan to decrease these emissions.
- For an additional point, submit a comparison between the estimated calculations and actual emissions one year after the completion of the project.

TECHNICAL APPROACHES

- Specify tracking and recording emission reductions as part of energy reduction projects.
- Specify reporting emissions reductions through third-party voluntary certification program.

POINT ALLOCATION

2 Potential Planning & Design Points

- See Actions & Targets for further breakdown of points.

BENEFITS

- Encourages the mitigation of greenhouse gas (GHG), criteria and air toxics emissions.
- Identifies largest sources of emissions and measures the progress of reduction strategies.
- Carbon reductions may soon have a monetary value that will be great enough to affect the financial performance of energy conservation projects.

DOCUMENTATION

- Submit mitigation plan.
- A narrative summarizing the calculations of the emission reductions from direct and indirect sources, identification of the largest sources of GHG emissions and a mitigation plan to further decrease emissions.
- Compare actual emissions of project to calculations one year after the completion of the project.

ACKNOWLEDGMENTS

or as updated in the Addendum

- California Climate Action Registry. General Reporting Protocol, Reporting Entity-Wide Greenhouse Gas Emissions, Version 2.2.
- California Climate Action Registry. CARROT – California Climate Action Registry Reporting Online Tool.

PD16-PC-6 Post-Construction Maintenance, Monitoring & Reporting: Sustainable Project Cost Impacts

INTENT

Track ongoing costs and benefits from the sustainable measures included in the project compared to a traditional building.

ACTIONS & TARGETS

To achieve points, comply with the following:

- Calculate savings and increases in capital costs associated with the sustainable features of the final project and compare to estimated costs for the same project built by traditional methods; AND
- For an additional point, calculate cost savings and increases due to sustainable features and compare to estimated costs for the same project built by traditional methods one year after the completion of the project.

TECHNICAL APPROACHES

- Prepare a report showing overall operation and maintenance (O&M) costs over first year of project end-use.
- Track actual costs and estimate traditional costs throughout the life cycle of the project (i.e., through the planning, design and construction phases).

POINT ALLOCATION

2 Potential Planning & Design Points

- See Actions & Targets for further breakdown of points.

BENEFITS

- Provides information for analyzing the current project.
- Provides information for improved decision-making for future projects.

DOCUMENTATION

- Prior to the commencement of construction, submit a plan summarizing the estimated cost calculations of the final project with sustainable features versus a project built with traditional methods, including assumptions and methods of estimation and calculation.
- After 1 year from the completion of the project, submit the analysis (including calculating cost savings and increases due to sustainable features) comparing the end costs with the estimated costs submitted before the start of construction.

ACKNOWLEDGMENTS

or as updated in the Addendum

- USDOE, 2004. Operations & Maintenance Best Practices – A Guide to Achieving Operational Efficiency, Release 2.0; Prepared by Pacific Northwest National Laboratory for the Federal Energy Management Program, July.

PD16-PC-7 Post-Construction Maintenance, Monitoring & Reporting: Productivity Impacts

INTENT

Capture the effects the sustainability-designed building has on the health and productivity of the building users.

POINT ALLOCATION

3 Potential Planning & Design Points

ACTIONS & TARGETS

To achieve points, comply with the following:

- Prepare a report at the end of 1 year comparing employee sick time for the workers in the sustainable building versus other groups employed by LAWA, national trends and/or previous year's total sick time prior to occupancy of the sustainable facility.

TECHNICAL APPROACHES

- Measure and communicate changes in absenteeism of affected employees.
- Measure and communicate healthcare cost impacts.
- Measure and communicate user satisfaction with the building.

BENEFITS

- Provides documentation to show positive effects of sustainable construction on worker health and productivity.

DOCUMENTATION

- Employee sick leave documentation aggregated for facility users.
- Employee healthcare insurance costs aggregated for facility users.

PD17-SR-1 Social Responsibility: Environmental Accountability

INTENT

Ensure that operators and designers have an overall sustainable and/or green policy statement that supports LAWA's Sustainable Vision and Principles.

POINT ALLOCATION

1 Potential Planning & Design Point

ACTIONS & TARGETS

To achieve points, comply with the following:

- All operator(s) and designer(s) involved in the project must have a sustainability and/or green policy statement that has been approved by senior management.

TECHNICAL APPROACHES

Make statement available to public via company website or other media.

BENEFIT

- Communicates company-wide commitment to sustainability that is in line with LAWA's sustainability commitments.

DOCUMENTATION

- List of Operators and Designers on the team
- Policy Statement with senior management endorsement from each team member.

PD17-SR-2 Social Responsibility: Community Involvement

INTENT

Build partnerships with the community through LAWA's Community Relations Division to foster support for projects on LAWA property.

POINT ALLOCATION

1 Planning & Design Point

ACTIONS & TARGETS

To achieve points, comply with the following:

- Provide a project description highlighting sustainability aspects to the appropriate airport's Community Relations Division.

BENEFITS

- Develops trust of community and support for projects.
- Encourages community investment in project.

TECHNICAL APPROACHES

Contact the airport's Community Relations Division to provide project team with the appropriate format of the project description.

DOCUMENTATION

- Provide copy of project description with highlighted sustainability aspects.
- Proof of submission to applicable airport's Community Relations Division.
- Proof of publication to the community (optional).

PD17-SR-3 Social Responsibility: Codes of Conduct

INTENT

Ensure that operators and designers have a Code of Conduct or an ethics policy statement.

POINT ALLOCATION

1 Planning & Design Point

ACTIONS & TARGETS

To achieve points, comply with the following:

- All operator(s) and designer(s) involved in the project must have a Code of Conduct or an ethics policy statement.

TECHNICAL APPROACHES

Make statement available to public via company website or other media.

BENEFIT

- Communicates company-wide commitment to sustainability which is in line with LAWA's sustainability commitments.

DOCUMENTATION

- List of Operators and Designers on the team
- Code of Conduct or an ethics policy statement with senior management endorsement from each entity.

PD17-SR-4 Social Responsibility: Sustainable Employee Development

INTENT

Develop and invest in human capital by creating and implementing sustainable work practices.

POINT ALLOCATION

- 2 Planning and Design Points for meeting 50% of the Actions & Targets
- 3 Planning & Design Points for meeting ≥ 90% of the Actions & Targets

ACTIONS & TARGETS

To achieve points, comply with the following:

- Develop policy statements for sustainable employee development for the following:
  - LSAG training
  - Flex-time
  - Modified workweek
  - LEED awareness training
  - Tuition reimbursement
  - Credential reimbursement and renewals
  - Conference presentation reimbursement
  - Conference attendance reimbursement
  - Non- mandatory training program
  - Volunteer time reimbursement
  - Telecommuting

TECHNICAL APPROACHES

- Consider on-line training
- Conduct regular reviews to ensure alignment with company sustainability policies (refer to PD17-SR-1).

BENEFITS

- Provides a sustainable source of human resources willing and able to work on current and future projects.
- Increases retention of talented and skilled workforce to provide a competitive edge to the enterprise.
- Enables completion of projects in a timely manner with the highest quality and level of workmanship.
- Minimizes turnover, which in turn minimizes training expenses of new employees.

DOCUMENTATION

- Policy statements for each Action & Target
- Documentation of training records, logs, certifications and developmental plans of employees
- Budgets and prior year expenditures for employee reimbursement

PD17-SR-5 Social Responsibility: Sustainable Workplace

INTENT

Provide a sustainable workplace for human capital.

ACTIONS & TARGETS

To achieve points, comply with the following:

- Develop policy statements for a sustainable workplace for the following:
  - Car-pooling incentives
  - Bicycling incentives
  - Public transportation incentives
  - Ergonomic assessments
  - Telecommuting
  - Recycling program
- Provide documentation of achievement of the following:
  - LEED® certified workspace or building
  - Energy Star® equipment
  - Energy Star®-rated workspace or building
  - Daylighting for a minimum of 80% of the workplace

TECHNICAL APPROACHES

- Conduct regular reviews to ensure alignment with company sustainability policies (refer to PD17-SR-1).
- Develop and implement programs to ensure long-term satisfaction and retention of employees

POINT ALLOCATION

- 2 Planning & Design Points for meeting 50% of Actions & Targets
- 3 Planning & Design Points for meeting ≥ 90% of Actions & Targets

BENEFITS

- Provides a sustainable source of human resources willing and able to work on current and future projects.
- Increases retention of talented and skilled workforce to provide a competitive edge to the enterprise.
- Enables completion of projects in a timely manner with the highest quality and level of workmanship.
- Minimizes turnover, which in turn minimizes training expenses of new employees.

DOCUMENTATION

- Policy statements
- Documentation of certifications
- Budgets and prior year expenditures for employee reimbursement

PD17-SR-6 Social Responsibility: Company Philanthropy & Social Investments

INTENT

Develop and implement philanthropic activities that benefit outside communities.

POINT ALLOCATION

2 Planning & Design Points

ACTIONS & TARGETS

To achieve points, comply with the following:

- All operator(s) and designer(s) involved in the project must develop a company-wide philanthropy and social investment policy.
- All operator(s) and designer(s) involved in the project must develop a philanthropic goal.

TECHNICAL APPROACHES

- Social and philanthropic activities may be of financial (monetary) nature or material (donation) such as giving of books, equipment or time.
- Establish a program where employees may set goals for volunteering hours, charities or donation amounts.

BENEFITS

- Provides social organizations with funds for implementing programs doing social good.
- Enhances the reputation and public profile of the organization overall.
- Provides an opportunity to counter negative publicity.
- Maintains and establishes the brand image/identity of an organization such as LAWA.

DOCUMENTATION

- Documentation of time, materials or dollars donated and to what charity/ies

PD18-AE-1 Additional Planning & Design Elements: LEED® Accredited Professional – Planning & Design

INTENT

Support and encourage the integration of sustainable concepts and practices into planning and design as required by these Guidelines.

POINT ALLOCATION

1 Potential Planning & Design Point

ACTIONS & TARGETS

To achieve points, comply with the following:

- Follow the requirements outlined in the latest LEED® standards. (See most recent Addendum): At least one principal participant of the project team shall be a LEED® Accredited Professional (AP).

TECHNICAL APPROACHES

- Assign one or more project team members to take the LEED® Professional Accreditation Exam, if not certified already.
- Assign the LEED® AP to review information regarding sustainable concepts and practices including green building design and construction and the application of the LAWA-Sustainable Rating System early in the project life cycle with the project team members.
- Assign the LEED® AP as a facilitator of an integrated design and construction process in conjunction with the construction liaison (CN2-CS-2, Designation and Actions of Construction Sustainability Liaison) to ensure the dynamic monitoring of sustainability goals and conflict resolutions.
- Involve LEED® Accredited Professionals at every level of planning and design.

BENEFITS

- Provides in-house expertise and experiences in coordinating the documentation process similar to that required for LAWA-Sustainable Certification.
- Monitors progress through the planning, design and construction phases and identifies conflicts early to reconcile overall project and sustainability objectives.
- Provides additional insight associated with local regulations, such as California Title 24 Energy Efficiency Standards (see most recent Addendum), for achievement and resolution of sustainability issues.
- Reduces the need for redesign during the various design stages that could potentially increase project costs.

DOCUMENTATION

- Documentation requirements outlined in the latest LEED® standards. (See most recent Addendum):
  - Provide the name of the LEED® AP.
  - Provide the name of the LEED® AP's company.
  - Provide a brief description of the LEED® AP's project role(s).
  - Provide a copy of the LEED® AP certificate.

ACKNOWLEDGMENTS

or as updated in the Addendum

- USGBC. 2005. LEED® for New Construction and Major Renovations version 2.2. October.

PD18-AE-2 Additional Planning & Design Elements: Innovation in Planning & Design

INTENT

Provide projects with the opportunity to be awarded additional DPs for exceptional performance in a particular LAWA-Sustainable Performance Standard. Alternatively, additional DPs may be awarded for use of innovated materials, technologies or practices not specifically addressed by this rating system. In addition, recognition will be given to the contractor or project that exceeds the requirements.

POINT ALLOCATION

Variable Points

- See Appendix for explanation of point allocation.

ACTIONS & TARGETS

To achieve points, comply with the following:

- Follow the requirements outlined in the latest LEED® standards. (See most recent Addendum): In writing, identify the intent of the proposed innovation credit, the proposed requirement for compliance, the proposed submittals to demonstrate compliance and the design approach (strategies) that might be used to meet the requirements.

TECHNICAL APPROACHES

- Exceed a LAWA-Sustainable Performance Credit such as energy or water efficiency and conservation substantially. For example, increase the total water use reduction from 40% to 50%.
- Create an interactive multimedia display (e.g., video, website, etc.) that would engage and educate visitors about the green aspects of the completed project.
- Acquire manufacturers' documentation and guarantee of installations, projected results and in-situ performance criteria compared to standard performance results.
- Develop and compile a maintenance manual that outlines required schedules and procedures to maintain sustainable performances, such as recommendations for "green" cleaning products, coordination of indoor air filter replacements, comprehensive recycling programs, etc.

BENEFITS

- Encourages the use of evolving sustainable initiatives and technologies that may provide unanticipated environmental, social and economic benefits to achieve the sustainable goals of the project.
- Evaluates a benchmark for sustainable design or practices by surpassing prescribed LAWA-Sustainable Performance Criteria.
- Increases the likelihood of achieving and upgrading the targeted LAWA-Sustainable Level.
- Offers recognition to the contractor or project that exceeds the requirements.
- A separate set of submittals is required for each point pursued.

DOCUMENTATION

- Documentation requirements outlined in the latest LEED® standards. (See most recent Addendum):
  - Provide the specific title for the Credit being pursued.
  - Provide a narrative statement of the Credit Intent.
  - Provide a narrative statement describing the Credit Requirements.

PD18-AE-2 continued on next page.

PD18-AE-2 (CON T.) Additional Planning & Design Elements: Innovation in Planning & Design

DOCUMENTATION (CONT.)

- Provide a detailed narrative describing the project's approach to achievement of the Credit. This narrative should include a description of the quantifiable environmental benefits of the Credit Proposal.
- Provide copies of specific construction drawings or exhibits that will serve to illustrate the project's approach to the Credit.

ACKNOWLEDGMENTS

or as updated in the Addendum

■ USGBC. 2005. LEED® for New Construction and Major Renovations version 2.2. October.

PART 5:
Sustainable Construction Guidelines

Los Angeles World Airports
Global Leader in Airport Sustainability

Sustainable Construction Guidelines Performance Measures

List of Performance Standards

Project Logistics

CN1-PL-1 Develop & Implement Sustainable Construction Training

CN1-PL-2 Implement a Sustainability Inspection Program

CN1-PL-3 Construction Scheduling & Sequencing

CN1-PL-4 Paperless Submittals & Change Orders

Contractor Sustainability Requirements

CN2-CS-1 Contractor Sustainability Experience/Performance Requirement

CN2-CS -2 Designation and Actions of Contractor Sustainability Liaison

CN2-CS -3 Electronic As-Built Drawing Submittals

CN2-CS -4 Contractor Public Involvement

Stormwater Management & Erosion Control

CN3-SM-1 Erosion & Sedimentation Control Measures

CN3-SM-2 Dust Control

CN3-SM-3 Stormwater Pollution Prevention Plan

CN3-SM-4 Minimize Site Disturbance During Construction

Construction Water Conservation

CN4-WC-1 Reduce Potable Water Use During Construction

Construction Indoor Air Quality

CN5-IA-1 Construction IAQ Management Plan – During Construction

CN5-IA-2 Construction IAQ Management Plan – Before Occupancy

Construction Waste Management

CN6-WM-1 Recycle & Reuse of Construction Materials

CN6-WM-2 Salvage Materials & Resources

Construction Vehicles

CN7-CV-1 Vehicle Idling Plan

CN7-CV-2 Low-Emission Construction Vehicles

CN7-CV-3 Retrofit Construction Vehicles

CN7-CV-4 Alternative Transportation During Construction

Construction Equipment

CN8-CE-1 Construction Equipment Maintenance

Sustainable Construction Guidelines Performance Measures

CN8-CE-2 Low-Emission Construction Equipment

EMISSION IMPACT EVALUATION & MITIGATION

CN9-EI-1 Refrigerant Management/Ozone Protection – Construction

CN9-EI-2 Greenhouse Gas Emissions – Construction

CN9-EI-3 Criteria & Air Toxics – Construction

CONSTRUCTION MATERIALS CONVEYING

CN10-MC-1 Construction Materials Conveying Plan

CONSTRUCTION NOISE CONTROL

CN11-NC-1 Construction Noise & Acoustical Control Plan

CN11-NC-2 Construction Noise Levels

CONSTRUCTION LIGHTING

CN12-CL-1 Construction Light Pollution Reduction

CN12-CL-2 Energy Efficient Temporary Lighting During Construction

LANDSCAPE MAINTENANCE

CN13-LM-1 Non-Toxic Landscape Maintenance Chemicals

CN13-LM-2 Composting & Vermiculture During Construction

CN13-LM-3 Integrated Pest Management

CONSTRUCTION HEALTH & SAFETY

CN14-HS-1 Construction Health & Safety Plan

CN14-HS-2 Dust Hazard

CONSTRUCTION ROADWAYS

CN15-CR-1 Construction Traffic Control

CN15-CR-2 Prevent & Repair Roadway Damage During Construction

SOCIAL RESPONSIBILITY

CN16-SR-1 Environmental Accountability

CN16-SR-2 Codes of Conduct

CN16-SR-3 Sustainable Employee Development

CN16-SR-4 Sustainable Workplace

CN16-SR-5 Company Philanthropy & Social Investments

CN16-SR-6 Promote the Use of Local Contractors & Suppliers

ADDITIONAL CONSTRUCTION ELEMENTS

CN17-AE-1 LEED® Accredited Professional

CN17-AE-2 Innovation in Construction

SUSTAINABLE CONSTRUCTION CHECKLIST

Project Name: _____ Date: _____

☐ Draft Date: _____ ☐ Final (Please sign last page)

Yes	Maybe	No	Possible Points	Number	Performance Standard Title	Notes	Status	Verified (initials)
Project Logistics								
			1	CN1-PL-1	Develop & Implement Sustainable Construction Training			
			1	CN1-PL-2	Implement a Sustainability Inspection Program			
			1	CN1-PL-3	Construction Scheduling & Sequencing			
			1	CN1-PL-4	Paperless Submittals & Change Orders			
			4		**TOTAL**			
Contractor Sustainability Requirements								
			1	CN2-CS-1	Contractor Sustainability Experience/Performance Requirement			
			1	CN2-CS-2	Designation and Actions of Contractor Sustainability Liasison			
			1	CN2-CS-3	Electronic As-Built Drawing Submittals			
			2	CN2-CS-4	Contractor Public Involvement			
			5		**TOTAL**			
Storm Water Management and Erosion Control								
			1	CN3-SM-1	Erosion & Sedimentation Control Measures			
			1	CN3-SM-2	Dust Control			
			1	CN3-SM-3	Storm Water Pollution Prevention Plan			
			1	CN3-SM-4	Minimize Site Disturbance During Construction			
			1	CN3-SM-4	Minimize Site Disturbance During Construction - 80% Threshold			
			5		**TOTAL**			
Construction Water Conservation								
			2	CN4-WC-1	Reduce Potable Water Use During Construction			
			2		**TOTAL**			

SUSTAINABLE CONSTRUCTION CHECKLIST

Project Name: _____ Date: _____

☐ Draft Date: _____ ☐ Final (Please sign last page)

Yes	Maybe	No	Possible Points	Number	Performance Standard Title	Notes	Status	Verified (initials)
Construction Indoor Air Quality								
			1	CN5-IA-1	Construction IAQ Management Plan - During Construction			
			1	CN5-IA-2	Construction IAQ Management Plan - Before			
			2		**TOTAL**			
Construction Waste Management								
			1	CN6-WM-1	Recycle & Reuse of Constuction Materials			
			1	CN6-WM-1	Recycle & Reuse of Constuction Materials			
			2	CN6-WM-2	Salvage Materials & Resources			
			4		**TOTAL**			
Construction Vehicles								
			1	CN7-CV-1	Vehicle Idling Plan			
			1	CN7-CV-2	Low-Emission Construction Vehicles - 75%			
			1	CN7-CV-2	Low-Emission Construction Vehicles - 100%			
			1	CN7-CV-3	Retrofit Construction Vehicles - 50%			
			1	CN7-CV-3	Retrofit Construction Vehicles -100%			
			1	CN7-CV-4	Alternative Transporation During Construction			
			6		**TOTAL**			
Construction Equipment								
			1	CN8-CE-1	Construction Equipment Maintenance			
			1	CN8-CE-2	Low-Emission Construction Equipment			
			2		**TOTAL**			
Emission Impact Evaluation & Mitigation								
			1	CN9-EI-1	Refrigerant Management/Ozone Protection - Construction			
			1	CN9-EI-2	Greenhouse Gas Emissions - Construction			
			1	CN9-EI-3	Criteria & Air Toxics - Construction			
			3		**TOTAL**			

SUSTAINABLE CONSTRUCTION CHECKLIST

Project Name: _____ Date: _____

☐ Draft Date: _____ ☐ Final (Please sign last page)

Yes	Maybe	No	Possible Points	Number	Performance Standard Title	Notes	Status	Verified (initials)
Construction Materials Conveying								
			1	CN10-MC-1	Construction Materials Conveying Plan			
			1		**TOTAL**			
Construction Noise Control								
			1	CN11-NC-1	Construction Noise & Acoustical Control Plan - Two Actions			
			1	CN11-NC-1	Construction Noise & Acoustical Control Plan - One Additional Action			
			1	CN11-NC-2	Construction Noise Levels			
			3		**TOTAL**			
Construction Lighting								
			1	CN12-CL-1	Construction Light Pollution Reduction			
			1	CN12-CL-2	Energy Efficient Temporary Lighting During Construction			
			2		**TOTAL**			
Landscape Maintenance								
			1	CN13-LM-1	Non-Toxic Landscape Maintenance Chemicals			
			1	CN13-LM-2	Conposting & Vermiculture During Construction			
			1	CN13-LM-3	Integrated Pest Management			
			3		**TOTAL**			
Construction Health & Safety								
			1	CN14-HS-1	Construction Health & Safety Plan			
			1	CN14-HS-2	Dust Hazard			
			2		**TOTAL**			

SUSTAINABLE CONSTRUCTION CHECKLIST

Project Name: _____ Date: _____

☐ Draft Date: _____ ☐ Final (Please sign last page)

Yes	Maybe	No	Possible Points	Number	Performance Standard Title	Notes	Status	Verified (initials)
Construction Roadways								
			1	CN15-CR-1	Construction Traffic Control			
			1	CN15-CR-2	Prevent & Repair Roadway Damage During Construction			
			2		**TOTAL**			
Social Responsibility - Construction								
			1	CN16-SR-1	Environmental Accountability			
			1	CN16-SR-2	Codes of Conduct			
			2	CN16-SR-3	Sustainable Employee Development			
			1	CN16-SR-3	Sustainable Employee Development			
			2	CN16-SR-4	Sustainable Workplace			
			1	CN16-SR-4	Sustainable Workplace			
			2	CN16-SR-5	Company Philanthropy & Social Investments			
			1	CN16-SR-6	Promote Use of Local Contractors & Suplliers			
			11		**TOTAL**			
Additional Construction Elements								
			1	PD18-AE-1	LEED Accredited Professional - Construction			
			1	PD18-AE-2	Innovation in Planning & Design			
			1	PD18-AE-2	Innovation in Planning & Design			
			1	PD18-AE-2	Innovation in Planning & Design			
			4		**TOTAL**			
			61		**GRAND TOTAL**			

☐ Final

Signature: _____

Title: _____

Name: _____

CERTIFICATION STATEMENT

FOR THE SUBMISSION OF DOCUMENTATION TO RECEIVE CREDIT FOR ACHIEVEMENT OF THE PERFORMANCE STANDARDS INCLUDED IN THE SUSTAINABLE AIRPORT PLANNING, DESIGN AND CONSTRUCTION GUIDELINES

For airport projects, the Sustainable Airport Planning, Design and Construction Guidelines (Guidelines) are required to be implemented throughout the project life cycle. As part of the Guidelines, Project Delivery Teams are obligated to submit documentation as verifiable evidence that the requirements of the performance standards included in the Guidelines were met for the project. This Certification Statement must be submitted in conjunction will all relevant and required documentation in order to receive credit for the actions taken to accomplish each performance standard for the project.

"I certify, based upon my knowledge, information and belief obtained from my personal observation and observation of the staff under my direct supervision, that the requirements for the performance standard listed below were met for the indicated project below and that all relevant and required documentation is contained herein.

Project Name

Project Location

Contractor or Entity Responsible for Project

Performance Standard Name and Number

PREPARED BY:

Printed Name | Title

Signature | Date

APPROVED BY:

Printed Name | Title

Signature | Date

CN1-PL-1 Project Logistics: Develop & Implement Sustainable Construction Training

INTENT

Make on-site and management construction team members aware, prior to the start of construction, of sustainability practices in order to gain an understanding of the principles of sustainability. Facilitate proactively based decisions and methods of work that are sustainable.

POINT ALLOCATION

1 Potential Construction Point

ACTIONS & TARGETS

To meet requirements, comply with the following:

- Provide training for on-site and management team members regarding sustainability, which includes the following concepts, prior to the start of construction and as new construction team members become involved in construction:
  - Sustainability: To develop and have the least negative impact on the environment, economy and local community.
  - LAWA Sustainability Vision and Principles.
  - Construction sustainability: How construction impacts sustainability.
  - Proactive sustainability: Examples of actions workers can do to be more sustainable.
  - LAWA's Construction Guidelines.
  - LAWA's Planning and Design Guidelines; AND
- The Program Management Team, the Construction Management Team, LAWA or LAWA's representative shall conduct the training, unless an outside specialty consultant is designated.

TECHNICAL APPROACHES

- Conduct research of sustainability issues, especially relating to construction, which should be conducted by the management company.
- Sustainability issues must be communicated to employees, especially the management team.
- Engage workers to develop sustainability presentations to determine real issues confronting workers and how changes may affect them.
- Management should develop a sustainability training program in order to have a meaningful understanding of sustainability rather than using an outside party.
- Emphasize environmentally and socially sensitive areas.

BENEFITS

- Creates work environments where team members can proactively support sustainability.
- Improves construction sustainability performance.

DOCUMENTATION

- Agenda for the Initial Sustainable Construction Training.
- Meeting materials (handouts, presentation slides, etc.).
- Meeting minutes.
- Attendance list including name, company, department, role on the project and contact information.
- Explanation for the absence of key stakeholders and documentation that a separate meeting was held for those stakeholders that could not make the initial meeting.
- Follow-up training to accommodate new employees and the information described above.

CN1-PL-2 Project Logistics: Implement a Sustainability Inspection Program

INTENT

Ensure compliance with LAWA required and selected sustainable construction performance standards and promote sustainability as an active and on-going construction goal. Capture quantifiable information regarding sustainability activities associated with a LAWA construction project.

POINT ALLOCATION

1 Potential Construction Point

ACTIONS & TARGETS

To meet requirements, comply with the following:

- Designate an inspector not working on the project to inspect and document compliance with required performance standards on a quarterly basis; AND
- The selected inspector may be a member of the Program Management organization, the Contractor's organization, a third party organization or other organization as approved by LAWA. The inspector may work on the sustainability training for this project; AND
- Designated inspector should be made available to answer questions about construction sustainability performance; AND
- Provide quarterly progress reports to the Oversight Committee, including updates and checklists in accordance with the Oversight Committee's schedule; AND
- Develop a Final Sustainable Construction Project Report within three months of substantial completion of the project that includes necessary documentation of sustainable activities, including those items outlined in the Guidelines for achievement of the LAWA performance standards, including inspection checklists completed during the project.

TECHNICAL APPROACHES

- Work on sustainability training should be done by the selected inspector in conjunction with project and site managers.
- Introduce selected inspector to construction team and allow them to have an introductory question and answer (Q&A) session.
- Develop daily checklists customized to the sustainable construction activities and record pertinent information.
- Document sustainable activities.
- Track progress at several stages throughout the construction process to provide continual feedback on sustainability performance.
- Prepare interim progress reports to track and document gaps that may occur during construction or documentation phase.

BENEFITS

- Maintains and creates a sustainable work environment where workers can proactively support sustainability.
- Improves construction sustainability performance.
- Ensures that construction is sustainable and requirements are met.
- Documents progress toward LAWA's overall improvement in sustainability performance.
- Facilitates knowledge transfer.
- Provides on-going data to identify areas where improvement can be made.

DOCUMENTATION

- List of employees on the project and tasks showing that the selected inspector is not assigned to project-related tasks except for developing sustainability training and conducting the sustainability inspections.
- Monthly inspection reports, submitted to the LAWA Project Manager.
- Final Sustainable Construction Project Report.

CN1-PL-3 Project Logistics: Construction Scheduling & Sequencing

INTENT

Reduce impacts, including moisture exposure and physical damage, due to unnecessary on-site storage of materials during construction. Prevent impacts to surrounding environment due to activities conducted during ecologically sensitive times. Restore the site to pre-construction conditions.

POINT ALLOCATION

1 Potential Construction Point

ACTIONS & TARGETS

To achieve points, comply with the following:

- Closely coordinate material deliveries with installation (i.e., employ "just-in-time" deliveries); AND
- Minimize storage of materials on-site; AND
- Determine what necessary permits and regulations affect project development and obtain permits as soon as possible; AND
- Avoid scheduling construction in or during ecologically sensitive seasons and times; AND
- When construction during ecologically sensitive times is unavoidable, employ techniques to reduce construction impacts; AND
- Restore the site to pre-construction activities as soon as possible.

TECHNICAL APPROACHES

- Expedite construction of building envelope to minimize moisture exposure to interior surfaces, thus minimizing the potential for mold.
- Coordinate deliveries with installation times closely.
- Determine when ecologically sensitive times occur.
- Avoid construction during the wet season when run-off is likely to occur, especially on toxic or polluted sites.
- Schedule low impact activities during sensitive times.
- Publish a construction schedule with a focus on sustainability.
- Schedule and coordinate construction activities to reduce noise and vibration impacts.
- Minimize the extent and duration of exposure of bare ground surface to be opened at one time, to prevent erosion at the source.
- Plan the phases or stages of construction to minimize exposure. Before site disturbance occurs, perimeter controls, sediment traps, basins and diversions should be in place to control runoff and capture sediments.
- Schedule construction activities to minimize operational impacts on airside and landside airport activities.

BENEFITS

- Reduces impacts and costs from installation and replacement of damaged materials.
- Reduces impacts due to construction activities during ecologically sensitive times.
- Minimizes impacts on airport activities and landside passenger traffic.
- Reduces the size of the staging area.
- Reduces material costs by ordering only what is needed.

DOCUMENTATION

- Pre-construction plans and schedules that show material deliveries and installations.
- Pre-construction plans and schedules that show ecologically sensitive times and mitigation plans to avoid activities that will adversely affect the environment during these times.
- Pre-construction plans and schedules that show restoration activities in a timely manner including, but not limited to, restoring sidewalks, pavement and vegetation.

CN1-PL-4 Project Logistics: Paperless Submittals & Change Orders

INTENT

Reduce the amount of paper generated and printing associated with construction administration.

POINT ALLOCATION

1 Potential Construction Point

ACTIONS & TARGETS

To achieve points, comply with the following:

- Develop submittals/correspondence, including change orders, electronically (to the greatest extent possible) and convert to a Portable Document Format (PDF); AND
- Send and receive submittals/correspondence, revisions and amendments electronically (to the greatest extent possible); AND
- Coordinate with LAWA regarding the use of a global document control system. Include software and training costs into construction administrative costs; AND
- Use electronic filing system to save and backup files; AND
- Establish a written procedure for reviewing and commenting on electronic project documents; AND
- Establish a written protocol for required signatures, license stamps, etc.; AND
- Establish a written policy on restricted access procedures for electronic posting; AND
- Minimize the number of printed copies of submittals/ correspondence.

TECHNICAL APPROACHES

- Incorporate paperless submittals/correspondence into contract documents.
- Utilize electronic submission of documents.

BENEFITS

- Reduces consumption and waste associated with standard printing, including paper, ink and plastics used in the production of standard submissions.
- Avoids use of fossil fuels associated with courier and standard mailings.
- Reduces costs of deliverable productions and delivery.
- Allows the reader to customize the use of print media to review specific aspects of documents.
- Allows quick access to documents while enabling confidentiality.
- Enables faster communication through electronic submittals of revisions, amendments, etc.
- Reduces physical space needed to house document submittals.

DOCUMENTATION

- Contract with design team and Owner shall require submittals/ correspondence be paperless (to the greatest extent possible).
- Written protocols and procedures for electronic document submission.
- Record of electronic document submission.

CN2-CS-1 Contractor Sustainability Requirements: Contractor Sustainability Experience/ Performance Requirement

INTENT

Promote the use of Contractors with sustainability experience to provide firsthand experience in daily management of sustainability goals for the project.

POINT ALLOCATION

1 Potential Construction Point

- See Table 1 for explanation of "Experience Score".

ACTIONS & TARGETS

To achieve points, comply with the following:

- Obtain an "Experience Score" of 10, as outlined in Table 1. Points may be awarded only for past projects with listed sustainability goals according to LEED® or Owner Administered Sustainability Guidelines that were successfully accomplished upon completion of that project.

TECHNICAL APPROACHES

- Provide a mix of General Contractors and Sub-Contractors with sustainability experience for larger projects. Provide focused sustainability experience with the General Contractor for smaller projects.

BENEFITS

- Promotes the environmental, economic and social benefits associated with the successful completion of sustainable projects by involving experienced Contractors, Sub-Contractors, Suppliers and Manufacturers in the project. The shared experiences in project reporting and strategies will benefit the completion of the sustainability goals.
- Shares "lessons learned" to benefit the project and aid in the avoidance of Stop Work incidences, Change Orders, redesign needs and other potential design and construction obstacles and setbacks that could potentially increase project costs.

DOCUMENTATION

- Documentation of sustainability experience of the Contractor, Subcontractor, Suppliers, Manufacturers and other members of the Contractor Team. Complete "Experience Score" for Team in accordance with scoring criteria.
- Identification of prior experience in sustainability projects. Documentation that the goals were met for the previous project by submitting compliance documentation from Agency or Group. LEED® project certification or similar documentation is required.

Table 1 follows

Table 1
Experience Point Designation for each past project that achieved planned sustainability goals.*

Project Size	Points for Each Project	Maximum Number of Points
General Contractor or Joint Venture Party		
Projects exceeding $10 million	2	8
Projects between $5 million and $10 million	1	8
Projects between $250,000 and $ 5million	2	10
Projects under $250,000	5	10
Sub-Contractor		
Projects exceeding $10 million	1	8
Projects between $5 million and $10 million	0.5	16
Projects between $250,000 and $5 million	1	5
Projects under $250,000	5	10
Suppliers, Manufacturers, or other Team Members		
Projects exceeding $10 million	0.5	8
Projects between $5 million and $10 million	0.5	8
Projects between $250,000 and $5 million	0.5	8
Projects under $250,000	2	10

**According to LEED® or Owner Administered Sustainability Guidelines*

Notes:

Baseline construction values shall be indexed on a yearly basis, effective December 31 of each year, to the total project escalation according to "ENR" for Lost Angeles, California. The baseline date for construction dollar values for this DP is January 1, 2008.

For projects using non-traditional contracting, the Construction Members shall be assigned traditional contracting roles for the allocation of points. If contracting is traditional and there are no Sub-Contractors, Level 2 points shall be applied to General Contractor (Level 1).

CN2-CS-2 Contractor Sustainability Requirements: Designation and Actions of Contractor Sustainability Liaison

INTENT

Provide tracking of sustainability goals and coordinate consistent communication with the Owner.

POINT ALLOCATION

1 Potential Construction Point

ACTIONS & TARGETS

To achieve points, comply with the following:

- Designate a Contractor Sustainability Liaison to the Owner that is a LEED® Accredited Professional (AP); AND
- Document identification and resolution of sustainability issues, and actions related to achieving the project sustainability goals. If original goals are changed, alternative actions to maintain the project sustainability goals must be indicated and actions must be directed and tracked for the resolution of issues.

TECHNICAL APPROACHES

- Identify the Construction Sustainability Liaison to the Owner as part of the Pre-Construction Meeting (or other meeting).
- Require agenda item at the regularly scheduled Construction Meetings to review status (current, since last meeting and anticipated within the next two meeting cycles) of sustainability achievement.
- Meet the baseline sustainability goals by successfully attaining the baseline credits, maintaining the number of credits included in the baseline goal through alternative credits or exceeding the original baseline credits.
- Require regular meetings (weekly or monthly) with the Sustainability Liaison.

BENEFITS

- Provides incentives to track and focus on achieving the sustainability goals.
- Reviewing and monitoring sustainable construction provides assurances to stakeholders that the sustainability goals will be met by reducing the opportunity to replace planned sustainable actions with non-approved actions that may contradict the agreed upon sustainability goals.
- Ongoing monitoring will identify issues related to sustainability in the early stages. By identifying issues early, the ability to avoid Stop Work incidences, Change Orders, redesign needs and other potential design and construction obstacles and setbacks that could potentially increase project costs, will be minimized though early intervention to correct them.
- Requires the Contractor Sustainability Liaison to the Owner to be a LEED® AP.

DOCUMENTATION

- Copy of LEED® AP certificate of the Contractor Sustainability Liaison to the Owner.
- Copies of Construction Meeting minutes, including review statements for the current status, status since the last meeting and anticipated status of sustainability compliance for the next two meeting cycles. Indicate deviations and correction methods to be implemented to maintain project sustainability goals.
- Progress template (Gantt chart or similar visual documentation) for indicating the original, current and final status of sustainability compliance.
- Table 1 is a suggested template, containing the minimum reporting requirements related to the above-required documentation. Attach the project progress schedule or sustainable item roll-up schedule to this template and include in the project meeting minutes.

Table 1 follows

Table 1
Minimum Reporting Requirements Template

This template must be completed and signed by the Contractor Sustainability Liaison to the Owner.

Item	Description	DP/CP	Responsibility	Status*	Actions Required
1	Designation and Actions of Contractor Sustainability Liaison	CN2-CS-2	General Contractor	Change since last meeting: Hired since last meeting and through end of Project.	Ongoing reporting included as attachment to Meeting Minutes.
2	Recycle & Reuse of Construction Waste	CN6-WM-1	General Contractor Engineer	Change Since Last Meeting: Completed Subcontractor Training during weekly Work Box Meeting. Mason noted that buy-back program would be used for excess remaining materials with Supplier. Site/Civil Engineer will request crushed stone from blasting to be evaluated as fill.	Masonry Submittal will note “buy-back” provision. Crushing excess material for fill is not anticipated. Site/Civil Engineer will require testing for proposed fill for approval as fill.

** Include available information related to current status, status since last meeting and anticipated status of sustainability compliance for the next two meeting cycles.*

CN2-CS-3 Contractor Sustainability Requirements: Electronic As-Built Drawing Submittals

INTENT

Reduce the use of paper, the amount of space necessary to store project documents and vehicle miles required for distribution of project documentation and submittals, while providing easily accessible milestone progress documentation toward completing project sustainability goals.

POINT ALLOCATION

1 Potential Construction Point

ACTIONS & TARGETS

To achieve points, comply with the following:

- Establish electronic signature(s) for meeting legal signatory requirements associated with submittals and verification; AND
- Establish security protocol for access restriction for contracting and security; AND
- Establish protocol for posting of submittals to prevent alteration at each level of review and security, while permitting markup; AND
- Establish central registry for official “printed” documents; AND
- Submit final as-built drawings electronically.

TECHNICAL APPROACHES

- Adopt library and documentation procedures and protocols for posted materials.
- Establish central depositories for viewing secure project information.

BENEFITS

- Reduces the use of paper products and fossil fuels used for distribution of interim submittals with electronic media and central posting.
- Enhances the reduction of time required for the distribution of information.
- Faster distribution will benefit the project in reducing the time between the submission of submittals and the official documentation, allowing the opportunity for reducing overall construction time. Reductions in construction time will reduce the overall construction period energy-use.
- Near real-time availability of documents for review and commenting.

DOCUMENTATION

- List of interim as-built submittals, including the title, content and date submitted.
- Electronic signatures and signatories.
- Record where documents are stored at in central registry.

CN2-CS-4 Contractor Sustainability Requirements: Contractor Public Involvement

INTENT

Engage the public in a proactive manner regarding construction processes and educate the public on sustainable processes and alternatives that occur during a project.

POINT ALLOCATION

2 Potential Construction Points

ACTIONS & TARGETS

To achieve points, comply with the following:

- Include a statement of the sustainability goals of the project on a sign or similar posting at the boundary of the project site where the public can safely view it. Provide progress tracking of goals on same format; AND
- Designate a Contractor official as a Sustainability Liaison to the Public that will attend the public hearings. The Contractor Sustainability Liaison to the Public must be a LEED® Accredited Professional (AP).

TECHNICAL APPROACHES

- Indicate sustainable goals in interactions with the public for construction projects.
- Require the Contractor to provide interaction with the public to communicate sustainable goals.
- The liaison can but does not have to be the same person as that designated in CN2-CS-2, Designation and Actions of Contractor Sustainability Liaison.

BENEFITS

- The social benefit of keeping the public informed of how the construction phase activities affects the environment and economy of the neighborhoods and stakeholders will provide early and informed dialogue opportunities.
- Benefits associated with the early intervention to solve issues related to the public will create opportunities to reduce the impact related to the public and completion of the project.

DOCUMENTATION

- LEED® AP certificate of the Contractor Sustainability Liaison to the Public. Liaison may be a third party Design Professional, hired by the Contractor or a Contractor employee.
- Copy of the project sign indicating the project's sustainability goals. Include at least four sustainable goals listed in "lay-terms" on the project sign. One-half of the goals indicated shall be construction related; one-half shall be related to planning and design. The Owner shall approve goals.

CN3-SM-1 Stormwater Management & Erosion Control: Erosion & Sedimentation Control Measures

INTENT

During construction, prevent siltation and sedimentation of down-gradient sites.

POINT ALLOCATION

1 Potential Construction Point

ACTIONS & TARGETS

To meet requirements, comply with the following:

- Stabilize disturbed areas until permanent erosion control measures are installed; AND
- After soil is permanently stabilized, remove non-biodegradable erosion controls (e.g., silt fences); AND
- Install sedimentation controls on stormwater structures prior to construction and remove after permanent erosion control measures are installed; AND
- Inspect erosion controls weekly and during rain events in accordance with the National Pollutant Discharge Elimination System (NPDES) General Permit. (See most recent Addendum). A member of the Construction Team or Program Management Team may serve as the inspector for this type of inspection; AND
- Provide an area adjacent to the site exit for construction vehicle tire wash-off to avoid tracking soil onto roadways; AND
- SLOPES LESS THAT 1:4 (vertical to horizontal)—Install linear control devices (such as wattles or silt fences) no more than 5 meters apart until soil is permanently stabilized; OR
- SLOPES BETWEEN 1:4 AND 1:3—Install linear control devices no more than 3 meters apart. In these areas, seeded vegetation must achieve 80% cover before it is considered fully established; OR
- SLOPES GREATER THAN 1:3—Place linear control devices no more than 2 meters apart. Retaining walls are required for permanent (post-construction) slopes steeper than 1:2. Benching and terracing is recommended; AND
- No terracing past 2:1.

TECHNICAL APPROACHES

- Cover soil during rainfall, high wind and at night with plastic sheets or other cover than can be easily removed for soil stockpiles or areas under active construction.

BENEFITS

- Reduces habitat loss and water quality impairment due to siltation.
- Prevents soil accumulation on roadways and associated cleanup costs.
- Reduces the cost of bringing in additional soil lost to erosion.
- May reduce accidents on roadways due to soil deposits and reduce complaints from abutters, which could result in work stoppages that could potentially increase project costs.

DOCUMENTATION

- Erosion and Sedimentation Control Plan outlining procedures for both temporary and permanent soil stabilization. This plan should include material specifications, special procedures for slopes at or over 1:2 and weekly inspections with pre-storm and post-storm inspections.

CN3-SM-1 continued on next page.

CN3-SM-1 (CONT.) Stormwater Management & Erosion Control: Erosion & Sedimentation Control Measures

TECHNICAL APPROACHES (CONT.)

- Use temporary soil stabilization techniques, including hydraulic mulch, compost, hydro seeding, oil binders, straw mulch, wood mulch and rolled mats.
- Ensure rolled mats conform to site contours.
- Cover 80% of soil surface with vegetation to achieve permanent soil stabilization in seeded areas. Apply wood mulch to ground surface to complement vegetation.
- Minimize disturbed areas and keep pre-existing vegetation intact whenever feasible.
- Establish temporary and permanent seeding plans.
- Develop an inventory of topsoil for potential reuse.
- Use biodegradable, natural fiber geotextiles.
- Make sure a layer of topsoil and compose is present to support growth when using vegetation to stabilize soils.
- Incorporate temporary sedimentation basins, temporary ditch checks, diversion dikes, temporary ditches and pipe slope drains into the construction plans.
- Monitor stormwater quality pre- and post-construction.
- Locate construction lay-down areas and stockpiles on areas that will be paved as part of the construction.
- Develop a policy to chip or compost vegetation for reuse on-site.

ACKNOWLEDGMENTS

or as updated in the Addendum

- Caltrans, 2003. Guide for Temporary Soil Stabilization, July.

CN3-SM-2 Stormwater Management & Erosion Control: Dust Control

INTENT

Prevent air and water pollution from wind erosion at construction sites.

ACTIONS & TARGETS

To meet requirements, comply with the following:

- Schedule earth moving during a low wind season when possible; AND
- Prepare a Dust Control Plan with the following information:
  - Documentation of wind patterns including direction and velocity; AND
  - Construction site plan showing locations of disturbed soil; AND
  - Best Management Practices (BMPs) that will be used for each disturbed soil location during each phase of construction; AND
  - Provisions for BMP inspections and personnel training; AND
  - Inspection and recordkeeping forms, to be kept on-site with Dust Control Plan; AND
- Develop a tracking protocol for implementation of the Dust Control Plan and execute, enforce and maintain the tracking protocol.

TECHNICAL APPROACHES

- Schedule construction activities to minimize the total disturbed area.
- Adjust BMPs based on meteorological conditions and activity level of disturbed soil.
- Use non-hazardous and biodegradable BMPs.
- Use non-potable water for dust control.
- Do not use BMPs that would increase impervious area or would otherwise cause stormwater pollution.
- Restrict traffic flows to stabilized construction roads and limit travel speed to 15 MPH.
- Provide cover for trucks transporting materials to and from site.
- Develop Dust Control Plan.

POINT ALLOCATION

1 Potential Construction Point

BENEFITS

- Prevents health and environmental impacts from wind-borne dust.
- Prevents loss of valuable topsoil from construction site.
- Prevents complaints from site abutters.
- Prevents environmental compliance issue with regulatory agencies responsible for administration of regulations.

DOCUMENTATION

- Dust Control Plan at least one month prior to start of construction activity.
- Documentation verifying that the tracking protocol was implemented.

ACKNOWLEDGMENTS

or as updated in the Addendum

- Construction Handbook, 2004. California Stormwater Quality Association, September.
- USGBC, 2005. LEED® for New Construction and Major Renovations version 2.2, October.

CN3-SM-3 Stormwater Management & Erosion Control: Stormwater Pollution Prevention Plan

INTENT

Prevent air and water pollution from wind erosion at construction sites.

POINT ALLOCATION

1 Potential Construction Point

ACTIONS & TARGETS

To meet requirements, comply with the following:

- Prepare a Stormwater Pollution Prevention Plan (SWPPP) for the construction site and activities; AND
- The SWPPP must comply with California's most recent Multi-Sector General Permit (MSGP) requirements. (See most recent Addendum).

TECHNICAL APPROACHES

- Coordinate equipment and material storage with contractors.
- Prepare a Spill Prevention Plan for construction activities.
- Prepare a hydrology report to document typical rainfall, drainage patterns, flow rates and run-in/runoff expected during storms.
- Prepare a soil report to document drainage characteristics, soil stability and design constraints.
- Prepare a preliminary grading and drainage plan from the hydrology and soil reports, which records slopes, areas of cut and fill, areas of soil disturbance and protection of existing vegetation.
- Delineate site perimeter to prevent disturbance beyond construction area.
- Practice good housekeeping – this will prevent potential pollutants from coming in contact with stormwater.
- Store materials and construction waste in areas sheltered from rain and runoff.
- Select BMPs carefully. The identification of the best BMP may differ with weather conditions, construction phase and materials currently in use.
- Develop a frequency for site inspections to ensure compliance with SWPPP and BMPs.
- Train on-site personnel in pollution prevention procedures and always make the SWPPP available at the construction site for review.
- Collect, treat and/or properly dispose of water used for vehicle washing.
- Use non-potable water for dust control.

BENEFITS

- Prevents or reduces releases of pollutants, saving downstream water resources.
- Provides for a quick and effective response in the event of a spill or pollutant release.
- Prevents loss of valuable topsoil from the construction site.
- Prevents complaints from site abutters.

DOCUMENTATION

- SWPPP at least one month prior to start of construction activities.

ACKNOWLEDGMENTS

or as updated in the Addendum

- Construction Handbook, 2004. California Stormwater Quality Association, September.
- USGBC, 2005. LEED® for New Construction and Major Renovations version 2.2, October.

CN3-SM-4 Stormwater Management & Erosion Control: Minimize Site Disturbance During Construction

INTENT

Minimize disturbance of soil and vegetation during construction activities.

ACTIONS & TARGETS

To meet requirements and/or achieve points, comply with the following:

- Develop a construction site plan that focuses on minimizing site disturbance, including the disturbed area for final construction; AND
- Restrict construction access roads to areas that are already access roads, are graveled, will be paved during construction or are already paved; AND
- Avoid disturbing vegetation for the creation of staging areas.
- Above and beyond point, meet the 80% threshold.

TECHNICAL APPROACHES

- Use contractor incentives (i.e., increased compensation) to promote reduced area of disturbance.
- Evaluate the need for slurry walls to prevent co-mingling of aquifers.
- Ensure that contractors and sub-contractors have been briefed on access roads and staging area locations.
- Flag or otherwise mark areas not to be disturbed.
- Use just-in-time delivery of materials to reduce staging needs.
- Protect unconsolidated material to be staged from weather by covering or otherwise securing it.
- Use equipment with longer reaches to minimize compaction of soil.

POINT ALLOCATION

2 Potential Construction Points

- Points will be awarded according to the following schedule:
  - Perform first three actions and targets = 1 pt
  - 80% threshold = 1 pt

BENEFITS

- Minimizes need for erosion and sedimentation control.
- Preserves existing vegetation and habitat.
- Reduces need and cost for landscaping materials.
- Maintains infiltration rate of stormwater by reducing soil compaction.

DOCUMENTATION

- Construction site plan showing compliance with actions listed.

ACKNOWLEDGMENTS

or as updated in the Addendum

- AASHTO, 2004. Environmental Stewardship Practices, Procedures and Polices for Highway Construction and Maintenance, September.

CN4-WC-1 Construction Water Conservation: Reduce Potable Water Use During Construction

INTENT

Minimize use of potable water and increase the use of recycled water during construction. Optimize the utilization of water resources on the job site.

ACTIONS & TARGETS

To meet requirements, comply with the following:

- Develop a Construction Water Reuse Plan to minimize the use of potable water to the highest extent possible. Reuse non-potable water or greywater for suitable tasks on the construction site, such as dust control and soil compaction.

TECHNICAL APPROACHES

- Consider the use of non-potable water or greywater for the following purposes:
  - Soil compactions
  - Dust suppression and control
  - Concrete mixing and aggregate wash down (upon approval of licensed structural engineer)
  - Consolidation of backfill material around potable/non-potable pipelines
  - Irrigation of landscaping on construction sites
- Use non-potable water for vehicle or tire washing and recycle the used water.
- Consult California Title 22 Water Recycling Criteria to ensure that recycled water undergoes recommended treatment processes to achieve the appropriate level for the respective tasks. (See most recent Addendum).

POINT ALLOCATION

2 Potential Construction Points

BENEFITS

- Minimizes the depletion of reservoirs and aquifers.
- Improves the integrity and recharge of watershed catchments.
- Reduces burden on public infrastructure by minimizing energy use to draw, treat and distribute water unnecessarily.
- Reduces the costs of environmental impacts to extract water from other regions.
- Reduces stormwater runoff during construction and related infrastructure costs.

DOCUMENTATION

- Construction Water Reuse Plan that includes information on how reclaimed greywater and/or stormwater will be collected, treated and reused.
- List of tasks/activities that will be addressed using reclaimed water and how it will meet the requirements as stated in the California Title 22 Water Recycling Criteria.
- Following construction, provide a Construction Water Use Plan Addendum documenting the total gallons (as measured in meters) of reclaimed water that were used during construction.

ACKNOWLEDGMENTS

or as updated in the Addendum

- State of California. Title 22 Division 4 Chapter 3, Water Recycling Criteria.

CN5-IA-1 Construction Indoor Air Quality: Construction IAQ Management Plan – During Construction

INTENT

Reduce indoor air quality (IAQ) problems resulting from the construction/renovation process in order to help sustain the comfort and well-being of construction workers and final occupants.

POINT ALLOCATION

1 Potential Construction Point

ACTIONS & TARGETS

To achieve points, comply with the following:

- Identify and conform to the latest LEED® standards. (See most recent Addendum); AND
- Replace filtration media immediately prior to occupancy; AND
- For areas being renovated, include protective measures for existing air systems.

TECHNICAL APPROACHES

- Meet or exceed the recommended Design Approaches of the Sheet Metal and Air Conditioning Contractors' National Association (SMACNA) IAQ, Chapter 3. (See most recent Addendum).
- Protect stored on-site or installed absorptive materials from moisture damage.
- Limit the operation of air-handling equipment during construction.
- Sequence the installation of materials to avoid contamination.
- Use filtration media with a Minimum Efficiency Reporting Value (MERV) of eight at each return air grill, as determined by American Society of Heating, Refrigeration and Air-Conditioning Engineers (ASHRAE) 52.2-1999, if air handlers are used during construction. (See most recent Addendum).
- Replace filtration media immediately prior to occupancy, subsequent to flush out.
- Evaluate conducting a two-week building flush out with 100% outside air.
- Educate personnel on the effects of poor IAQ.
- Appoint an IAQ Manager who will identify problems and methods of mitigation.
- Monitor airflow within the contaminated area.
- Isolate contamination areas by blocking return air grills or added filtration.
- Use ventilation systems overnight to purge the work area.
- Communicate hazards of IAQ during daily health and safety meetings.
- Include strategies listed on the Checklist (part 2, version 2).

BENEFITS

- Keeps workers and occupants safe and comfortable.
- Increases worker productivity.
- Minimizes the risk for mold and other IAQ problems.

DOCUMENTATION

- Provide an IAQ Management Plan meeting the requirements of the latest LEED® standards. (See most recent Addendum).
- For areas being renovated, provide a narrative explaining how existing air systems were protected.

ACKNOWLEDGMENTS

or as updated in the Addendum

- USGBC, 2005. LEED® for New Construction and Major Renovations version 2.2, October.

CN5-IA-2 Construction Indoor Air Quality: Construction IAQ Management Plan – Before Occupancy

INTENT

Reduce indoor air quality (IAQ) problems resulting from the construction/renovation process in order to help sustain the comfort and well-being of construction workers and building occupants.

POINT ALLOCATION

1 Potential Construction Point

ACTIONS & TARGETS

To achieve points, comply with the following:

- Identify and conform to the latest LEED® standards. (See most recent Addendum); AND
- Replace filtration media in HVAC equipment immediately prior to occupancy.

TECHNICAL APPROACHES

- Meet or exceed the recommended Design Approaches of the Sheet Metal and Air Conditioning Contractors' National Association (SMACNA) IAQ, Chapter 3. (See most recent Addendum).
- Protect stored on-site or installed absorptive materials from moisture damage.
- Limit the operation of air-handling equipment during construction.
- Sequence the installation of materials to avoid contamination.
- Use filtration media with a Minimum Efficiency Reporting Value (MERV) of eight at each return air grill, as determined by American Society of Heating, Refrigeration and Air-Conditioning Engineers (ASHRAE) 52.2-1999, if air handlers are used during construction. (See most recent Addendum).
- Replace filtration media immediately prior to occupancy, subsequent to flush out.
- Evaluate conducting a two-week building flush out with 100% outside air.
- Educate personnel on the effects of poor IAQ.
- Appoint an IAQ Manager who will identify problems and methods of mitigation.
- Monitor airflow within the contaminated area.
- Isolate contamination areas by blocking return air grills or added filtration.
- Use ventilation systems overnight to purge the work area.
- Communicate hazards of IAQ during daily health and safety meetings.
- Include strategies listed on the Checklist (part 2, version 2).

BENEFITS

- Management of sources of IAQ problems will promote healthy environments for the permanent occupants of the project.

DOCUMENTATION

- Documentation requirements from the latest LEED® standards. (See most recent Addendum).

ACKNOWLEDGMENTS

or as updated in the Addendum

- USGBC, 2005. LEED® for New Construction and Major Renovations version 2.2, October.

CN6-WM-1 Construction Waste Management: Recycle & Reuse of Construction Materials

INTENT

Avoid use of landfills and incinerators for construction debris, recycle and reuse as much material as possible and eliminate the amount of waste produced on the jobsite as part of the same project.

ACTIONS & TARGETS

To meet requirements, comply with the following:

- Identify and conform to the latest LEED® standards. (See most recent Addendum); OR
- Apply recycled material from another construction site to the project site.

TECHNICAL APPROACHES

- Meet or exceed the requirements of the Balanced Earthwork Plan.
- Adopt a Construction Waste Management Plan.
- Develop a detailed Lay-Down/Sequencing Plan.
- Evaluate (at a minimum) the following waste for recycling:
  - Cardboard
  - Land-clearing debris
  - Metal
  - Brick
  - Concrete
  - Asphalt
  - Plastic
  - Clean wood
  - Glass
  - Gypsum wallboard
  - Carpet
  - Insulation
  - Cable/wire
- Require haulers to cover truck beds.
- Identify project waste that is a resource to another project such as:
  - Concrete
  - Fill
  - Asphalt
  - Land-clearing debris
  - Small ancillary buildings or structures
  - Building components
- Designate a specific site area for recycling.
- Track recycling efforts throughout the construction process.
- Evaluate sub-contractor materials practices for refused or rejected materials.

POINT ALLOCATION

2 Potential Construction Points

- Points will be awarded according to the following schedule:
  - 50% threshold = 1 pt
  - 75% threshold = 2 pts

BENEFITS

- Extends the life of existing landfills and reduces the need for new landfills through the reduction of total waste generated.
- Reduces the demand for raw materials.
- Reuse of on-site materials reduces the need and the cost to travel offsite for materials.
- Decreases costs associated with landfill disposal.

DOCUMENTATION

- Documentation requirements from the latest LEED® standards. (See most recent Addendum).

CN6-WM-1 continued on next page.

CN6-WM-1 (CONT.) Construction Waste Management: Recycle & Reuse of Construction Materials

TECHNICAL APPROACHES (CONT.)

- Coordinate with salvaged material efforts.
- Avoid the use of non-recyclable materials when able.
- Use locally available materials and resources.
- Utilize the "Construction Waste Management Database" provided by the Whole Building Design Guide. (See most recent Addendum).

ACKNOWLEDGMENTS

or as updated in the Addendum

- USGBC, 2005. LEED® for New Construction and Major Renovations version 2.2, October.

CN6-WM-2 Construction Waste Management: Salvage Materials & Resources

INTENT

Salvage construction materials and products in order to reduce demand for virgin materials and to reduce waste, thereby reducing impacts associated with the extraction and processing of virgin resources. Establish procedures that make salvaged resources available to other LAWA projects and the regional construction community.

POINT ALLOCATION

2 Potential Construction Points

ACTIONS & TARGETS

To achieve points, comply with the following:

- Salvage 10% of construction and demolition waste by weight; OR
- Apply salvaged material from another construction site to the project site.

TECHNICAL APPROACHES

- Evaluate salvageable materials.
- Coordinate with other airport projects that may use the project's construction and demolition waste as a resource.
- Advertise for salvage activities prior to demolition activities.
- Evaluate creating a public information site to list salvaged materials to offer for sale or donation.
- Utilize the "Construction Waste Management Database" provided by the Whole Building Design Guide to identify resources for salvaged or surplus materials for reuse. (See most recent Addendum).

BENEFITS

- The reuse of building materials promotes the reduction of extraction and processing of virgin materials for new building products.
- Divert construction waste from landfills.

DOCUMENTATION

- Documentation of the end-use of the salvage materials.
- Calculation of percentage by weight of the materials salvaged.

ACKNOWLEDGMENTS

or as updated in the Addendum

- USGBC, 2005. LEED® for New Construction and Major Renovations version 2.2, October.

CN7-CV-1 Construction Vehicles: Vehicle Idling Plan

INTENT

Reduce emissions from construction vehicles including criteria pollutants, hazardous air pollutants (HAP) and greenhouse gases (GHG) and reduce overall fuel consumption by reducing overall operational time (idling time).

POINT ALLOCATION

1 Potential Construction Point

ACTIONS & TARGETS

To meet requirements, comply with the following:

- In accordance with the Mitigation Plan for Air Quality as stipulated in the Standard Operating Procedure MM-AQ-1 of the LAX Master Plan's Mitigation, Monitoring and Reporting Program (MMRP), construction vehicles are prohibited from idling in excess of idling limits for diesel-fueled vehicles, currently set at five minutes by the California Air Resources Board (CARB) Section 2485, Airborne Toxic Control Measure to Limit Diesel-Fueled Commercial Motor Vehicle Idling. (See most recent Addendum). Implement Vehicle Idling Inspection Program and record findings; AND
- Ensure construction vehicles operating during construction make use of idle reduction technologies including, but not limited to, battery-powered auxiliary power systems (APS) and fuel-fired heaters (meeting CARB equipment specifications); AND
- Post signage for no idling areas.

TECHNICAL APPROACHES

- Ensure construction activities do not require significant amounts of vehicle idling.
- Ensure that, when possible, no idling occurs within 100 feet of a sensitive receptor area, such as air intakes.
- Ensure that newer vehicle engines using recent idling and emission reduction technologies are implemented whenever technologically feasible.
- Turn off vehicles that will be left idle for more than 30 seconds.

BENEFITS

- Reduces emissions of criteria pollutants, HAPs and GHGs.
- Reduces consumption (and impacts from consumption) of non-renewable fossil fuels, including impacts from oil and gas production.
- Reduces health impacts associated with diesel particulate matter, including asthma and acute bronchitis.
- Ensures compliance with the LAX Master Plan's MMRP, already established.
- Ensures compliance with CARB Heavy-Duty Vehicle Idling Emissions Reduction Program.

DOCUMENTATION

- Inventory of vehicles making use of alternative idling reduction technologies.
- Inventory of and verification that 2007 or later model-year vehicles have obtained and display appropriate labeling on their hoods designating compliance with APS operational requirements in California.
- Vehicle Idling Program inspection logs.
- Identify areas where signage will be installed on a plan.

CN7-CV-2 Construction Vehicles: Low-Emission Construction Vehicles

INTENT

Reduce emissions from construction vehicles including criteria pollutants, hazardous air pollutants (HAP) and greenhouse gases (GHG) by using technologically feasible and fuel-efficient options.

ACTIONS & TARGETS

To achieve points, comply with the following:

- Ensure that 75% of the construction vehicles used during construction meet the current California Low-Emission Vehicle Standard; AND
- Voluntarily comply with South Coast Air Quality Management District's (SCAQMD) fleet rules (regardless of fleet size) for on-road, light- and medium-duty construction vehicles (Rule 1191) or on-road, heavy-duty construction vehicles (Rule 1196), requiring new additions or replacements to be made using alternative fuels, duel fuels or dedicated gasoline options where technologically feasible. (See most recent Addendum); AND
- Develop and maintain an inventory of construction vehicles used. The inventory must include a listing of vehicle type, fuel type and overall fuel usage during each phase of construction. On-road vehicles should also maintain records of official DMV registrations, manufacturer, model and model-year; AND
- In accordance with the Mitigation Plan for Air Quality, as stipulated in the Standard Operating Procedure MM-AQ-1 of the LAX Master Plan's Mitigation, Monitoring and Report Program (MMRP), construction equipment must be properly maintained in accordance with manufacturers' specifications and schedules. (See most recent Addendum); AND
- Employ use of "cleaner burning diesel fuel" where technologically feasible, in accordance with the Mitigation Plan for Air Quality, which is prepared for Master Plan projects.
- For an additional point, 100% of the construction vehicles used during construction meet the current California Low-Emission Vehicle Standard. (See most recent Addendum).

TECHNICAL APPROACHES

- Install new low-emission engines into old equipment chassis.
- Consider use of alternative fuel vehicles.
- Replace aging equipment with new low-emission models when available and technologically feasible.
- Perform routine maintenance and engine rebuilds to maintain original vehicle emission levels.
- Decrease emissions and fuel consumption by reducing vehicle idle times.
- Require construction vehicles that meet California Low-Emission Vehicle Standards. (See most recent Addendum).

POINT ALLOCATION

2 Potential Construction Points

- See Actions & Targets for further breakdown of points.

BENEFITS

- Reduces emissions of criteria pollutants, HAPs and GHGs.
- Reduces consumption (and impacts from consumption) of non-renewable fossil fuels, including impacts from oil and gas production.
- Reduces health impacts associated with diesel particulate matter, including asthma and acute bronchitis.
- Ensures compliance with the LAX Master Plan's MMRP, already established.

DOCUMENTATION

- Inventory of vehicles in use during phases of construction, including information that would be required for compliance auditing per SCAQMD Rule 1196 (g).
- A log of maintenance and repair conducted to construction vehicles in use during construction.

CN7-CV-3 Construction Vehicles: Retrofit Construction Vehicles

INTENT

Reduce emissions from older construction vehicles and equipment including criteria pollutants, hazardous air pollutants (HAP) and greenhouse gases (GHG) by using technologically feasible and fuel-efficient options.

POINT ALLOCATION

2 Potential Construction Point

- See Actions & Targets for further breakdown of points.

ACTIONS & TARGETS

To achieve points, comply with the following:

- Install diesel oxidization catalysts on 50% of the heavy-duty diesel vehicles that do not meet current California Low-Emission Vehicle Standards. (See most recent Addendum); AND
- Install particulate filters, if available, on heavy-duty diesel vehicles that will be on-site for more than 30 cumulative days in a calendar year; AND
- Retrofit construction vehicles with emerging or alternative emissions reduction technologies if available and technologically feasible.
- For an additional point, retrofit 75% of heavy-duty diesel vehicles that do not meet current California Low-Emission Vehicle Standards. (See most recent Addendum).

TECHNICAL APPROACHES

- Include particulate filters or other emissions hardware, like oxidation catalysts, for vehicles on-site for more than 180 cumulative days within a calendar year.
- Develop a vehicle inspection program to ensure pollution control devices are in place.
- Require construction vehicles that use high-technology diesel emissions traps.

BENEFITS

- Reduces emissions of criteria pollutants, HAPs and GHGs.
- Reduces consumption (and impacts from consumption) of non-renewable fossil fuels, including impacts from oil and gas production.
- Reduces health impacts associated with diesel particulate matter, including asthma and acute bronchitis.
- Ensures compliance with the LAX Master Plan's Mitigation, Monitoring and Reporting Program (MMRP), already established.

DOCUMENTATION

- Document the equipment that has been retrofitted with emission reduction controls.
- A log of the maintenance and repair conducted to construction vehicles in use during construction.

CN7-CV-4 Construction Vehicles: Alternative Transportation During Construction

INTENT

Provide alternative transportation during construction to reduce personal vehicle emissions, congestion and oil consumption.

POINT ALLOCATION

1 Potential Construction Point

ACTIONS & TARGETS

To achieve points, comply with the following:

- Develop and promote a carpooling plan; AND
- Provide shuttles when multiple vehicles travel back and forth frequently between sites; AND
- Create incentives for car sharing or carpooling with preferential parking and disincentives to those that drive in single-occupancy vehicles such as parking fees or permits; AND
- Develop documents that include an Alternative Transportation Options Plan for employees and distribute to employees.

TECHNICAL APPROACHES

- Provide coordinated and staged private vehicle parking during construction.
- Provide a transportation plan to and from the construction site.
- Use the funds raised from project parking fees to subsidize mass transportation passes.
- Encourage employee carpooling.
- Designate preferential parking for carpool vehicles and coordinate with Ride Share.

BENEFITS

- Reduces environmental impacts to air and water from combustion engine vehicles.
- Reduces congestion from single-occupancy vehicles.
- Reduces demand and environmental impacts from obtaining and refining oil.

DOCUMENTATION

- Alternative Transportation Options Document developed for employees.
- Narrative describing the level of use of Alternative Transportation Options Plan.

CN8-CE-1 Construction Equipment: Construction Equipment Maintenance

INTENT

Reduce environmental and employee health and safety impacts from potentially hazardous maintenance chemicals and processes used during constructions.

POINT ALLOCATION

1 Potential Construction Point

ACTIONS & TARGETS

To achieve points, comply with the following:

- Use environmentally friendly chemicals and processes when alternatives are available; AND
- Conduct maintenance activities under cover; AND
- Recycle and/or dispose safely of hazardous wastes; AND
- Produce an environmental Spill Response Plan to cleanup chemical, fuel or oil spills; AND
- Maintain current MSDSs on-site.

TECHNICAL APPROACHES

- Use biodiesel-based oils that can biodegrade naturally.
- Contain and clean chemical spills properly and dispose of cleanup supplies properly.
- Avoid using excessive chemicals when unnecessary.
- Reduce variety and quantity of chemical supplies.
- Require contractors to submit a pre-construction plan to recycle oil and use environmentally friendly maintenance products during construction.
- Use biodegradable hydraulic fluid and non-toxic lubricants.

BENEFITS

- Reduces environmental impacts to air and water.
- Provides a less hazardous work environment.
- Increases employee health and productivity.

DOCUMENTATION

- Pre-construction plans and specifications that require use of environmentally friendly chemicals and processes.
- Spill Response Plan.

ACKNOWLEDGMENTS

or as updated in the Addendum

- City of Chicago, O'Hare Modernization Program, 2003. Sustainable Design Manual, December.

CN8-CE-2 Construction Equipment: Low-Emission Construction Equipment

INTENT

Reduce environmental and employee health and safety impacts from potentially hazardous maintenance chemicals and processes used during constructions.

POINT ALLOCATION

1 Potential Construction Point

ACTIONS & TARGETS

To achieve points, comply with the following:

- Construction equipment rated at 50 horsepower and greater must comply with the requirements of the California Air Resources Board (CARB) Section 93116, Airborne Toxic Control Measures for Diesel Particulate Matter from Portable Engines Rated at 50 Horsepower and Greater. (See most recent Addendum). Measures include use of CARB diesel fuel and certification of particulate matter standards; AND
- Develop and maintain an inventory of construction equipment used. The inventory must include a listing of equipment type, fuel type and total fuel usage during each phase of construction; AND
- In accordance with the Mitigation Plan for Air Quality, as stipulated in the Standard Operating Procedure MM-AQ-1 of the LAX Master Plan's Mitigation, Monitoring and Report Program (MMRP), construction will include a combination, to be specified by the contractor, of electricity from power poles and portable diesel- or gasoline-fueled generators. Diesel-fueled generators should make use of cleaner burning diesel and technologically feasible emission controls. The usage of electricity from power poles must be tracked and documented. (See most recent Addendum); AND
- In accordance with the Mitigation Plan for Air Quality, as stipulated in the Standard Operating Procedure MM-AQ-1 of the LAX Master Plan's MMRP, construction equipment must be properly maintained in accordance with manufacturers' specifications and schedules; AND
- Employ use of "cleaner burning diesel fuel" where technologically feasible, in accordance with the Mitigation Plan for Air Quality, which is prepared for Master Plan projects.

TECHNICAL APPROACHES

- Require construction equipment to limit idle times.

BENEFITS

- Reduces emissions of criteria pollutants, HAPs and GHGs.
- Reduces consumption (and impacts from consumption) of non-renewable fossil fuels, including impacts from oil and gas production.
- Reduces health impacts associated with diesel particulate matter, including asthma and acute bronchitis.
- Ensures compliance with the LAX Master Plan's MMRP, already established.

DOCUMENTATION

- Inventory of equipment in use during construction, including type, size (horsepower), fuel usage and approximate/average hours of operation.
- Electricity usage logs or documentation detailing the amount of electricity from power poles versus generators.
- A log of maintenance and repair conducted to construction equipment in use during construction.

CN8-CE-2 continued on next page.

CN8-CE-2 (CONT.) Construction Equipment: Low-Emission Construction Equipment

TECHNICAL APPROACHES (CONT.)

- Implement proposed Tier 4 emission standards for non-road diesel equipment.
- Install new low-emission engines and combustion units into old equipment where technologically feasible.
- Consider the use of alternative fuels for construction equipment.
- Replace aging equipment with new low-emission models when available and technologically feasible.
- Perform routine maintenance and engine rebuilds to maintain original equipment emission levels.
- Maintain an inventory of equipment in use and electricity usage for use in inventories developed as part of these Guidelines.

CN9-EI-1 Emission Impact Evaluation & Mitigation: Refrigerant Management/Ozone Protection – Construction

INTENT

Reduce the use of chemicals that contribute to ozone depletion.

POINT ALLOCATION

1 Potential Construction Point

ACTIONS & TARGETS

To meet requirements, comply with the following:

- Determine feasibility of utilizing HVAC&R equipment during construction that makes use of alternative or substitute refrigerants; AND
- Comply with the requirements of Section 608 of the Clean Air Act, National Recycling and Emission Reduction Program. (See most recent Addendum); AND
- Comply with the requirements of South Coast Air Quality Management District (SCAQMD) Rule 1415, Reduction of Refrigerant Emissions from Stationary Refrigeration and Air Condition Systems. (See most recent Addendum).

TECHNICAL APPROACHES

- Eliminate equipment that utilizes chlorofluorocarbon (CFC) and hydrochlorofluorocarbon (HCFC) refrigerants.
- Use evaporative cooling.
- Inspect and maintain equipment frequently to detect leaks.
- Select HVAC&R with reduced refrigerant charge.

BENEFITS

- Reduces ozone destruction.
- Creates a healthier ozone layer to block out harmful ultraviolet (UV) rays and electromagnetic (EM) radiation.
- Streamlines compliance or exemption from SCAQMD refrigerant requirements (Rule 1415).
- Reduces greenhouse gases, commonly used in refrigeration systems, with a high global warming potential.

DOCUMENTATION

- Documentation of sources of refrigerant sales and sales certification associated with construction activities.
- Calculations and documentation of potential hydrofluorocarbons (HFC) and perfluorocarbons (PFC).

CN9-EI-2 Emission Impact Evaluation & Mitigation: Greenhouse Gas Emissions – Construction

INTENT

Identify potential greenhouse gas (GHG) emissions during construction and develop mitigation measures to reduce potential new or cumulative impacts while also improving overall efficiency and sustainability.

POINT ALLOCATION

1 Potential Construction Point

ACTIONS & TARGETS

To meet requirements, comply with the following:

- Conduct a GHG Impact Evaluation of construction GHG emissions from stationary and mobile combustion emission sources expected during the construction phase; AND
- Estimate potential electricity consumption specific to construction activities expected from the construction phase; AND
- Assess feasibility of including GHG reduction measures in the construction phase. This feasibility study must include energy consumption reduction and alternative-fueled construction equipment that may result in lower GHG and air pollutant emissions; AND
- Maximize reduction in construction GHG emissions compared to the construction GHG inventory.

TECHNICAL APPROACHES

- Conduct a GHG Impact Evaluation for projected construction activities.
- Identify design changes to mitigate GHG emissions.
- Obtain and implement a VALE grant.

BENEFITS

- Reduces overall GHG emissions from fossil fuel combustion during construction phase.
- Potential for cost-effective, energy-efficient alternatives that can reduce construction costs.

DOCUMENTATION

- A verifiable GHG Impact Evaluation, following International Organization for Standardization (ISO)14064 Part 1 Methodologies. Inventory should be verifiable per ISO 14064 Part 3, by a second party verifier following ISO 14065 Methodologies and Standards. (See most recent Addendum).
- Calculations showing a reduction in GHG emissions compared to the construction GHG inventory.

CN9-EI-3 Emission Impact Evaluation & Mitigation: Criteria & Air Toxics – Construction

INTENT

Identify criteria and air toxics emissions during construction to ensure consistency with regulatory requirements and develop mitigation measures to reduce potential new or cumulative impacts while also improving overall efficiency and sustainability.

POINT ALLOCATION

1 Potential Construction Point

ACTIONS & TARGETS

To meet requirements, comply with the following:

- Conduct an air emissions Impact Evaluation of construction activities for criteria emissions using the most recent available version of the Urbemis Model. (See most recent Addendum); AND
- If noticeable air toxic emissions are anticipated, a Rule 1401, Air Toxics Analysis will be required, specifically if there is the potential for required permits through the South Coast Air Quality Management District (SCAQMD). (See most recent Addendum); OR
- If California Environmental Quality Act (CEQA) documentation is necessary, conduct an air toxics inventory in accordance with the procedures detailed in SCAQMD Rule 1401; AND
- Assess feasibility of including dust mitigation control measures above the minimum requirements as set by SCAQMD Rule 403. (See most recent Addendum); AND
- Assess feasibility of including air emissions reduction measures as part of construction operations including, but not limited to, additional soil stabilizing measures, alternative fuels, use of diesel particulate filters, use of diesel oxidation catalyst and use of low Volatile Organic Compound (VOC) products; AND
- Maximize reduction of criteria and air toxics emissions.

TECHNICAL APPROACHES

- Conduct an emissions Impact Evaluation for each phase of construction.
- Identify construction operational changes to mitigate air emissions such as alternative-fueled equipment, efficient construction scheduling and operations and reducing traffic congestion from additional construction traffic or traffic diversions due to construction.
- Obtain and implement a VALE grant.

BENEFITS

- Reduction of overall criteria and air toxic emissions from construction equipment and activities during construction phase.
- Streamline compliance with current air quality regulations and requirements.

DOCUMENTATION

- Estimations of construction activities and equipment usage during construction along with approximate criteria and air toxics emissions.
- Documentation of mitigation measures implemented, including alternative fuels used for construction equipment.
- Documentation of compliance with SCAQMD Rule 403 (fugitive dust rule and guidelines).
- Calculations showing a reduction in criteria and air toxics emissions compared to the construction GHG Impact Evaluation.

CN10-MC-1 Construction Materials Conveying: Construction Materials Conveying Plan

INTENT

Reduce emissions from construction vehicles transporting materials around the site.

POINT ALLOCATION

1 Potential Construction Point

ACTIONS & TARGETS

To achieve points, comply with the following:

- Prepare and implement a Construction Materials Conveyance Management Plan
  - List activities that will require repetitive shuttling from the same points; AND
  - When vehicles are being used for repetitive transportation, a conveyor should be used to transport equipment.

TECHNICAL APPROACHES

- Install freight elevators as soon as possible to decrease reliance on construction vehicles such as cranes.
- Evaluate the use of conveyor systems to transport materials from stockpile areas.
- Set one supply delivery point so materials originate from the same area, thus maximizing use of a conveyor.

BENEFITS

- Reduces emissions.
- Reduces natural resources consumption.
- Reduces environmental impacts from oil extraction and refinement.
- Reduces air and water pollution from combustion process.
- Reduces health impacts associated with diesel emissions, including asthma and acute bronchitis.
- Minimizes site vehicle congestion.

DOCUMENTATION

- Construction Materials Conveyance Management Plan and narrative describing how the goals of the plan were achieved during construction

CN11-NC-1 Construction Noise Control: Construction Noise & Acoustical Control Plan

INTENT

Develop acoustical control measures to reduce noise levels from construction activities adjacent to non-aviation related commercial and residential communities.

ACTIONS & TARGETS

To meet requirements, comply with the following:

- Use stationary, mobile and power-actuated construction equipment to achieve the target noise levels established in CN11-NC-2. If local or county noise standards are more stringent than those presented in CN11-NC-2, then they will take precedence; AND
- Construction Contractor to use construction noise control measures recommended in the Construction Noise and Acoustical Quality Control Plan; AND
- Coordinate with a designated LAWA compliance representative for inspections of internal combustion, portable, stationary and power-actuated construction equipment.
- Prepare a Construction Noise and Acoustical Quality Control Plan by a Certified Acoustical Engineer within 30 days after award of contract. Update the plan at six (6) month intervals and submit to LAWA within two weeks of the start of each six-month period. In addition, update and resubmit the plan upon major changes in schedule, construction method or equipment operations. Include computations, drawings and specifications for required noise control measures in the plan.

TECHNICAL APPROACHES

- Require contractors to submit sound reduction construction plans to mitigate unwanted construction noise and vibration.
- Program locations of mechanical equipment and other sources of noise away from exterior spaces designed for use.
- Require mufflers on construction equipment.
- Establish construction vehicle speed limits.
- Use noise control measures, which include, but are not limited to, portable and permanent barriers, earthen berms, replacing noisier equipment with quieter units and using rubber-tired equipment in lieu of track equipment.

POINT ALLOCATION

2 Potential Construction Points

- Points will be awarded according to the following schedule:
  - Perform first three actions and targets = 1 pt
  - Perform four actions and targets = 2 pts

BENEFITS

- Reduces overall construction noise levels from stationary, portable and power-actuated construction equipment.
- Avoids unnecessary redesign and construction delays that may otherwise occur due to abutter complaints.

DOCUMENTATION

- Construction Noise and Acoustical Quality Control Plan to be updated at six (6) month intervals and to be resubmitted within two weeks of the start of each six-month period or upon major changes in construction activities or schedule.
- Document location of project in relation to commercial and residential communities.

ACKNOWLEDGMENTS

or as updated in the Addendum

- ASTM, 2000. E1014-84. Standard Guide for Measurement of Outdoor A-Weighted Sound Levels.
- USDOT, 2006. FHWA, Roadway Construction Noise Model (RCN), January.
- USDOT. FHWA, Bulletin – Highway Construction Noise: Measurement, Prediction and Mitigation.

CN11-NC-2 Construction Noise Control: Construction Noise Levels

INTENT

Establish acceptable noise levels for stationary, portable and power-actuated construction equipment for each construction phase prior to the commencement of construction.

ACTIONS & TARGETS

To meet requirements, comply with the following:

- Conduct a baseline noise monitoring program prior to the commencement of construction activities; AND
- An independent Certified Acoustical Engineer will conduct regular weekly measurements of noise levels at noise monitoring locations identified in the Construction Noise and Acoustical Quality Control Plan to ensure compliance with construction noise levels and local noise ordinances.
- A Certified Acoustical Engineer will prepare and implement a Construction Noise and Acoustical Quality Control Plan. The plan will include a baseline noise measurement study, noise modeling analysis and recommended noise mitigation measures (see CN11-NC-1) to establish construction equipment and land use specific noise limits for both daytime and nighttime activities.

TECHNICAL APPROACHES

- Base construction noise levels on construction equipment and noise control measures established as part of the Construction Noise and Acoustical Quality Control Plan.

POINT ALLOCATION

2 Potential Construction Points

- Points will be awarded according to the following schedule:
  - Perform first two actions and targets = 1 pt
  - Perform three actions and targets = 2 pts

BENEFITS

- Reduces overall exterior noise levels during construction activities.
- Supports development of noise control measures in the Construction Noise and Acoustical Quality Control Plan.
- Increases the ambient noise quality for nearby affected land uses during construction activities.

DOCUMENTATION

- Monthly construction-noise survey reports prepared by a Certified Acoustical Engineer summarizing weekly noise level measurements and documenting changes in construction activities or additional mitigation measures to remedy exceedences of construction noise levels and local noise ordinances.

ACKNOWLEDGMENTS

or as updated in the Addendum

- ASTM, 2000. E1014-84. Standard Guide for Measurement of Outdoor A-Weighted Sound Levels.
- USDOT, 2006. FHWA, Roadway Construction Noise Model (RCN), January.
- USDOT. FHWA, Bulletin – Highway Construction Noise: Measurement, Prediction and Mitigation.

CN12-CL-1 Construction Lighting: Construction Light Pollution Reduction

INTENT

Minimize light trespass from construction activities, reduce development impact on nocturnal environments and improve nighttime visibility through glare reduction and distinction of signage and runway/taxiway lighting.

POINT ALLOCATION

1 Potential Construction Point

ACTIONS & TARGETS

To achieve points, comply with the following:

- Have construction lighting plans reviewed by LAWA to ensure that the lighting type and placement will not interfere with aeronautical lights or otherwise impair airport traffic; AND
- Ensure that lighting is shielded and focused to avoid glare or unnecessary light spillover.

TECHNICAL APPROACHES

- Model the site lighting during construction using a computer model to achieve optimized construction lighting strategies.
- Consider full cutoff luminaries, low-reflectance, non-specular surfaces and low angle spotlights for roadway and building lighting.
- Adopt site lighting criteria to maintain safe light levels while avoiding off-site lighting and night sky pollution. Focus light toward the earth to minimize night-sky pollution.
- Establish a schedule for when lighting is required and develop a policy to reduce lighting when not needed.
- Limit lighting in protected ecological areas to mitigate lighting impacts on wildlife.
- Minimize site lighting where safety and security allows.
- Limit the maximum candela value of interior lighting to fall within the building (not out through windows) and the maximum candela value of exterior lighting to fall within the property.
- Use High Pressure Sodium (HPS) lamps instead of Metal Halide (MH) lamps where acceptable. HPS lamps produce more lumens per watt, have less mercury content per lamp and have a greater average life expectancy than MH lamps which could potentially decrease maintenance and replacement costs..
- Limit lighting in protected ecological areas to mitigate lighting impacts on wildlife.
- Design for monitoring of maximum candela value of exterior lighting.

BENEFITS

- Decreases glare impacts at night.
- Reduces environmental impacts on nocturnal species.
- Increases quality of life in communities surrounding construction sites.
- Reduces energy consumption.

DOCUMENTATION

- Provide construction lighting plans with lighting type and placement.

ACKNOWLEDGMENTS

or as updated in the Addendum

- City of Chicago, O'Hare Modernization Program, 2003. Sustainable Design Manual, December.
- Susan Harder, 2007. Data retrieved from http://www.darkskysociety.org/handouts/white_paper-mh_vs_hps.pdf
- USGBC, 2005. LEED® for New Construction and Major Renovations Version 2.2, October.

CN12-CL-2 Construction Lighting: Energy Efficient Temporary Lighting During Construction

INTENT

Reduce lighting energy consumption during construction.

POINT ALLOCATION

1 Potential Construction Point

ACTIONS & TARGETS

To achieve points, comply with the following:

- Estimate the kWh requirements for construction lighting that would be used as part of a traditional construction project and reduce anticipated energy consumption by 15%.

TECHNICAL APPROACHES

- Reduce construction at nighttime.
- Use fluorescent or LED lighting when low light levels are needed.
- Use High Pressure Sodium (HPS) lamps instead of Metal Halide (MH) lamps where acceptable. HPS lamps produce more lumens per watt, have less mercury content per lamp and have a greater average rated life expectancy than MH lamps which could potentially decrease maintenance and replacement costs.

BENEFITS

- Reduces pollution and environmental impacts due to production of energy.
- Reduces costs associated with energy use.
- Reduces dependence on coal, oil and natural gas for energy production.
- Conserves natural limited resources by reducing global greenhouse gasses produced from fossil fuel-based power plants.

DOCUMENTATION

- Documentation shall include calculations of projected kWh usage based on the American Society of Heating, Refrigeration and Air-Conditioning Engineers/ Illuminating Engineering Society of North America (ASHRAE/IESNA) Standard 90.1 User's Manual. (See most recent Addendum). In addition, provide a work plan that outlines steps that will be taken to reduce lighting needs, daily logs that document the number of hours that lighting was used and final kWh usage for the project based on the daily logs. Complete the applicable Lighting Compliance Documentation provided in the ASHRAE/IESNA Standard 90.1 User's Manual. Provide a separate calculation that shows the percentage reduction in lighting power.

ACKNOWLEDGMENTS

or as updated in the Addendum

- Susan Harder, 2007. Data retrieved from http://www.darkskysociety.org/handouts/white_paper-mh_vs_hps.pdf

CN13-LM-1 Landscape Maintenance: Non-Toxic Landscape Maintenance Chemicals

INTENT

Eliminate the use of synthetic chemical fertilizers and herbicides during construction and prevent adverse environmental impacts to natural habitats and resources.

POINT ALLOCATION

1 Potential Construction Point

ACTIONS & TARGETS

To achieve points, comply with the following:

- Create a Landscape Maintenance Plan including:
  - Specifying exclusive use of organic and non-toxic chemicals; AND
  - Use mulch, shading, point-specific irrigation, fertilizer reduction and other natural measures to inhibit weed growth and improve soil; AND
- Implement a maintenance-staff training program to ensure compliance with the Landscape Maintenance Plan.

TECHNICAL APPROACHES

- Decrease use of fertilizers and chemicals.
- Use organic and/or non-toxic products.
- Perform manual weeding.
- Coordinate with PD16-PC-1, Operations & Maintenance Program.

BENEFITS

- Reduces environmental pollution caused by the application of non-organic fertilizers and herbicides.
- Reduces health risk to employees and customers.
- Improves soil and groundwater quality.

DOCUMENTATION

- Landscape Maintenance Plan.
- Staff training materials relating to chemical use and training logs.

ACKNOWLEDGMENTS

or as updated in the Addendum

- USEPA GreenScapes Program. Data retrieved from www.epa.gov/greenscapes
- The Pennsylvania Green Building Operations and Maintenance Manual. Data retrieved from http://www.dgs.state.pa.us/dgs/lib/dgs/green_bldg/greenbuildingbook.pdf

CN13-LM-2 Landscape Maintenance: Composting & Vermiculture During Construction

INTENT

Recycle on-site waste during construction into beneficial compost for landscaping use during construction activities.

POINT ALLOCATION

1 Potential Construction Point

ACTIONS & TARGETS

To achieve points, comply with the following:

- Develop a Composting/Vermiculture Implementation Plan for on-site composting/vermiculture during construction. Include appropriate materials including cleared vegetation and approved organic food; AND
- Designate an area on the construction site for composting/vermiculture that is approved by the LAWA Project Manager; AND
- Address potential odor issues related to composting/vermiculture.

TECHNICAL APPROACHES

- Locate copost/vermiculture area used by LAWA.
- Evaluate composting methods appropriate for anticipated waste.
- Utilize compost for erosion control.
- Coordinate with other airport projects or operations when designating an area for composting/vermiculture.

BENEFITS

- Reduces disposal fees.
- Diverts waste from landfills.
- Improves soil quality.
- Reduces runoff.
- Conserves water.
- Minimizes need for landscaping chemicals.

DOCUMENTATION

- Composting/Vermiculture Implementation Plan.
- Drawing showing area designated for composting/vermiculture.
- Narrative describing actions taken to prevent and respond to potential odor issues.

ACKNOWLEDGMENTS

or as updated in the Addendum

- USEPA GreenScapes Program. Data retrieved from www.epa.gov/greenscapes
- The Branchville Correctional Facility Vermiculture Program. Data retrieved from http://www.in.gov/recycle/topics/composting/docs/branchvillevermiculture.pdf
- University of Georgia. Food Waste Composting: Institutional and Industrial Applications, College of Agriculture and Environmental Sciences. Data retrieved from http://pubs.caes.uga.edu/caespubs/pubcd/B1189.htm
- Colorado Institutional Food Waste Composting Guide. Data retrieved from http://recycling.colorado.edu/state_and_national/composting.pdf

CN13-LM-3 Landscape Maintenance: Integrated Pest Management

INTENT

Minimize the environmental impact of pest control measures during construction.

POINT ALLOCATION

1 Potential Construction Point

ACTIONS & TARGETS

To achieve points, comply with the following:

- Develop an Integrated Pest Management (IPM) Plan; AND
- Target pests with specific best practices, preferring natural measures over synthetic pesticide applications; AND
- Focus on preventative pest management; AND
- Provide training on pest identification, life cycles and best control measures to landscape maintenance staff.

TECHNICAL APPROACHES

- Consider environmentally benign pest management procedures.
- Establish a non-toxic pest control program.
- Include the IPM Plan into the Operation & Maintenance Program (PD16-PC-1).
- Identify and conform to the latest LEED® standards. (See most recent Addendum).

BENEFITS

- Minimizes negative effects of chemicals.
- Reduces liability for worker or customer exposure.
- Decreases maintenance costs with a lower volume of chemicals.

DOCUMENTATION

- IPM Plan.
- Training materials.

ACKNOWLEDGMENTS

or as updated in the Addendum

- University of Minnesota. Radcliff's IPM World Textbook. Data retrieved from http://ipmworld.umn.edu/ipmchap.htm
- USEPA. Integrated Pest Management (IPM) Principles. Data retrieved from http://www.epa.gov/pesticides/factsheets/ipm.htm

CN14-HS-1 Construction Health & Safety: Construction Health & Safety Plan

INTENT

Provide the construction team with project-specific health and safety management, hazard awareness, hazard prevention techniques and a healthy and safe atmosphere.

POINT ALLOCATION

1 Potential Construction Point

ACTIONS & TARGETS

To meet requirements, comply with the following:

- This performance standard is achieved by developing a project-specific Health and Safety Plan (HASP), including the following sections:
  - Project Information, including Task Descriptions
  - Hazards of Concern
  - Preventative Actions
  - Contingency Plans for response to unsafe conditions
  - Personnel and responsibilities
  - Provide emergency contacts and directions to emergency facility
  - Report health and safety incidences
  - Complete weekly safety inspections and reports
- Record and submit weekly reports summarizing accidents as well as incidences that may have resulted in an accident and evaluating what steps can be taken to prevent those incidences in the future.

TECHNICAL APPROACHES

- Appoint a site Health and Safety Manager.
- Establish an Emergency Notification Program.
- Address health and safety in design and planning stages.
- Conduct safety observations to ensure workers are abiding by the Health and Safety Plan.
- Conduct a Health and Safety Meeting at the start of the day as well as after lunch breaks.

BENEFITS

- Increases awareness of hazards.
- Increases use of personal protective equipment.
- Secures hazardous areas of site from public access.
- Provides emergency contacts and directions to emergency facility.
- Compiles health and safety incidences to prevent similar occurrences in the future.

DOCUMENTATION

- Project-specific HASP for review by the LAWA Project Manager.
- Upon completion of construction activities, weekly safety reports documenting accidents and identifying hazards encountered during construction work. Include a final tally of accidents for the entire project.
- Narrative describing processes, successes and lessons learned.

CN14-HS-1 continued on next page.

CN14-HS-1 (CONT.) Construction Health & Safety: Construction Health & Safety Plan

TECHNICAL APPROACHES (CONT.)

- Require that workers have proper safety certifications.
- Develop job-specific hazard analyses that outline potential hazards within a certain job and ways to mitigate accidents.
- Have one member of the construction field team by shift be required to have CPR/First Aid Certification
- Minimize night work.
- Participate in the Occupational Safety & Health Administration's (OSHA) Voluntary Protection Programs (VPP). (See most recent Addendum).

ACKNOWLEDGMENTS

or as updated in the Addendum

- USGBC, 2005. LEED® for New Construction and Major Renovations version 2.2, October.
- City of Chicago, O'Hare Modernization Program, 2003. Sustainable Design Manual, December.
- Pentagon Renovation and Construction Office and Pennsylvania State University, 2004. Field Guide for Sustainable Construction, June.

CN 14-HS-2 Construction Health & Safety: Dust Hazard

INTENT

Protect health of workers from dust emissions and/or fumes during construction using respirators rated for particulate and/or fume filtration as required by the Occupational Safety and Health Administration (OSHA).

POINT ALLOCATION

1 Potential Construction Point

ACTIONS & TARGETS

To meet requirements, comply with the following:

- Provide respirators and masks to on-site workers with a N-95 rating for construction projects where there is no historic data to indicate dust would carry toxic materials or site would release or contain hazardous fumes or gasses; OR
- Provide respirators and masks to on-site workers with a P-100 rating for construction projects where historic data indicates that toxic materials were used on the site, used in previous construction or is associated with the construction site; AND
  - This requirement can be waived if testing is performed to show the site does not contain toxic materials or fumes due to construction activities; AND
  - N-95 rated respirators still need to be available and assigned to each worker; AND
- Provide training for workers on the negative health effects of long-term particulate exposure and when new respirators and masks are needed; AND
- Provide replacement respirators and masks as needed; AND
- Develop a written policy indicating when the respirators and masks are required to be used and enforce this policy; AND
- Provide a place to store respirators safely.

TECHNICAL APPROACHES

- Determine conclusively if toxic dusts or fumes exist or will enter breathing space during construction, especially during renovation of buildings.
- Provide reusable or ventilated respirators and masks for worker comfort.
- Provide signs reminding workers of long-term health risks due to exposure to particulates and the unknown toxics attached to particulates.
- Monitor dust emissions and employee respirator and mask usage.
- Require employees to wear respirators and masks when dust emissions are visible for more than one hour each day.

BENEFITS

- Reduces health risks due to dust and PM-10 emissions, especially when dust can contain unknown toxic materials.
- Reduces unnecessary and expensive medical expenses to correct respiratory ailments due to exposure to particulates.
- Improves air quality for workers

DOCUMENTATION

- Invoices that include quantity of respirators and masks to match expected number of on-site workers.
- Training information given to workers.
- Written policy on the schedule of respirator and mask usage.

CN15-CR-1 Construction Roadways: Construction Traffic Control

INTENT

Prevent or reduce major traffic congestion in the surrounding streets during construction.

POINT ALLOCATION

1 Potential Construction Point

ACTIONS & TARGETS

To achieve points, comply with the following:

- For projects executed at LAX, the Contractor shall develop a Construction Traffic Management Plan (CTMP) as stipulated in the Standard Operating Procedure ST-18 of the LAX Master Plan's Mitigation, Monitoring and Reporting Program (MMRP) dated September 2004. (See most recent Addendum); OR
- For projects executed at other LAWA facilities, develop a CTMP for approval by the LAWA Project Manager; AND
- Included in the CTMP shall be measures to ensure that local roadways are inspected before construction starts and periodically throughout the construction process; AND
- Establish appropriate mechanics to involve and coordinate with other major airport-area development projects to the extent feasible to ensure that the cumulative impacts of construction in the airport area are coordinated and minimized; AND
- Obtain Construction Delivery Permits at least 30 days in advance from the local agencies of proposed street or lane closures and the Construction Coordination Office. Construction Notification of deliveries shall be made in writing and with sufficient time (a minimum of 72 hours) to allow for modifications to approved traffic detour plans; AND
- Schedule truck deliveries of bulk materials such as aggregate, bulk cement, dirt, etc. to the maximum extent possible, during night hours and avoid peak local traffic periods on designated haul routes as specified in the Standrad Operating Procedures ST-12 and ST-16 of the LAX Master Plan's MMRP. (See most recent Addendum); AND
- Restric the closure of existing roadways as specified in the Standard Operating Procedure ST-19 of the LAX Master Plan MMRP. (See most recent Addendum); AND
- Plan deliveries and hauling of material from the project site to comply with Standard Operating Procedures ST-12 and ST-16 of the LAX Master Plan's MMRP. (See most recent Addendum). No staging of construction traffic in residential or other noise-sensitive areas near the airport will be allowed. Should traffic staging areas be required, the Contractor shall locate these areas away from residential development and shall comply with local regulations; AND

BENEFITS

- Minimizes adverse impacts to the local community from construction-related traffic by managing the flow of traffic, roads, haul-ways and traffic hours.

DOCUMENTATION

- Proper documentation of permits, notifications and communication is necessary for contractual and legal purposes.
- CTMP, including updates as necessary.

CN15-CR-1 continued on next page.

CN15-CR-1 (CONT.) Construction Roadways: Construction Traffic Control

ACTIONS & TARGETS (CONT.)

- Ensure that construction traffic, deliveries and employees use the designated haul routes as stipulated in the Standard Operating Procedures ST-16 and ST-22 in the LAX Master Plan's MMRP. (See most recent Addendum). Except as otherwise expressly permitted in writing by the Engineer, for dirt, aggregate and other materials and equipment, truck deliveries shall only be on designated routes, as shown on construction contract plans (freeways and non-residential streets). Residential frontage roads shall be avoided; AND
- Maintain haul routes on off-airport roadways as stipulated in the Standard Operating Procedure ST-17 in the LAX Master Plan's MMRP. (See most recent Addendum); AND
- Parking for contractor employees and subcontractor personnel shall be in designated parking areas on airport property and not on streets and alleys in the area as stipulated in the Standard Operating Procedure ST-21 in the LAX Master Plan's MMRP. (See most recent Addendum); AND
- Use approved traffic control contractors with signage that is appropriate for traffic control at the appropriate locations; AND
- Provide sufficient advance notification to the local community about upcoming lane closures.

TECHNICAL APPROACHES

- Plan a problem-free traffic control system for the area through timely and frequent communication between the Contractors and the Construction Coordination Office.
- Emphasize the importance of managing the traffic. This should be considered as early in the project planning process as is feasible.
- Communication and the flow of information for traffic control should be unrestricted between the Contractor(s), the Construction Coordination Office and the public.

CN15-CR-2 Construction Roadways: Prevent & Repair Roadway Damage During Construction

INTENT

Prevent disadvantages to the surrounding communities due to local road damage during the project construction process.

POINT ALLOCATION

1 Potential Construction Point

ACTIONS & TARGETS

To achieve points, comply with the following:

- Construction-related vehicles operated on public roadways must not exceed the local maximum road weight limits; AND
- Equipment with tractor treads must not be driven on public roadways; AND
- Accidents must be reported and any repairs dealt with quickly by the responsible party; AND
- Report immediately any roadway damage caused by construction vehicles, which shall be repaired immediately by the responsible party.

TECHNICAL APPROACHES

- Coordinate with CalTrans to evaluate potentially vulnerable areas and avoid damage.
- Immediately repair construction-related damage.
- Coordinate with CN15-CR-1, Construction Traffic Control.

BENEFITS

- Minimizes Stop Work incidences that could potentially increase project costs.
- Increases community support for the project.
- Minimizes liability for accidents caused by roadway damage.
- Reduces necessity of larger repairs due to delayed maintenance.

DOCUMENTATION

- List of construction vehicles operated on public roadways and the load they will transport.
- Written policy stipulating that equipment with tractor tread shall not be driven on roadways.
- Incident reports (if applicable).

CN16-SR-1 Social Responsibility: Environmental Accountability

INTENT

Ensure that contractors have an overall sustainable and/or green policy statement that supports LAWA's Sustainable Vision and Principles.

POINT ALLOCATION

1 Construction Point

ACTIONS & TARGETS

To achieve points, comply with the following:

- Contractors and major subcontractors involved in the project must have a sustainability and/or green policy statement that has been approved by senior management.

TECHNICAL APPROACHES

Make statement available to public via company website or other media.

BENEFIT

- Communicates company-wide commitment to sustainability which is in line with LAWA's sustainability commitments.

DOCUMENTATION

- List of contractors and major subcontractors on the team at the start of the project
- Policy Statement with senior management endorsement from each entity

CN16-SR-2 Social Responsibility: Codes of Conduct

INTENT

Ensure that contractors have a Code of Conduct or an ethics policy statement.

POINT ALLOCATION

1 Construction Point

ACTIONS & TARGETS

To achieve points, comply with the following:

- Contractors and major subcontractors involved in the project must have a Code of Conduct or an ethics policy statement.

BENEFIT

- Communicates company-wide commitment to sustainability which is in line with LAWA's sustainability commitments.

TECHNICAL APPROACHES

Make statement available to public via company website or other media.

DOCUMENTATION

- List of contractors and major subcontractors on the team
- Code of Conduct or an ethics policy statement with senior management endorsement from each entity

CN16-SR-3 Social Responsibility: Sustainable Employee Development

INTENT

Develop and invest in human capital by creating and implementing sustainable work practices.

POINT ALLOCATION

- 2 Construction Points for meeting 50% of the Actions & Targets
- 3 Construction Points for meeting ≥ 90% of the Actions & Targets

ACTIONS & TARGETS

To achieve points, comply with the following:

- Develop policy statements for sustainable employee development for the following:
  - LSAG training
  - Flex-time
  - Modified workweek
  - LEED awareness training
  - Tuition reimbursement
  - Credential reimbursement and renewals
  - Non- mandatory training program
  - Volunteer time reimbursement

TECHNICAL APPROACHES

- Consider on-line training
- Conduct regular reviews to ensure alignment with company sustainability policies (refer to CN16-SR-1).

BENEFITS

- Provides a sustainable source of human resources willing and able to work on current and future projects.
- Increases retention of talented and skilled workforce to provide a competitive edge to the enterprise.
- Enables completion of projects in a timely manner with the highest quality and level of workmanship.
- Minimizes turnover, which in turn minimizes training expenses of new employees.

DOCUMENTATION

- Policy statements
- Documentation of training records, logs, certifications and developmental plans of employees
- Budgets and prior year expenditures for employee reimbursement

CN16-SR-4 Social Responsibility: Sustainable Workplace

INTENT

Provide a sustainable workplace for human capital.

POINT ALLOCATION

- 2 Construction Points for meeting 50% of the Actions & Targets
- 3 Construction Points for meeting ≥ 90% of the Actions & Targets

ACTIONS & TARGETS

To achieve points, comply with the following:

- Develop policy statements for a sustainable workplace for the following:
  - Car-pooling incentives
  - Public transportation incentives
  - Ergonomic assessments
  - Recycling program
- Provide documentation of achievement of the following:
  - LEED® certified workspace or building
  - Energy Star® equipment
  - Energy Star®-rated workspace or building
  - Daylighting for a minimum of 80% of the workplace

TECHNICAL APPROACHES

- Conduct regular reviews to ensure alignment with company sustainability policies (refer to CN16-SR-1).
- Develop and implement programs to ensure long-term satisfaction and retention of employees

BENEFITS

- Provides a sustainable source of human resources willing and able to work on current and future projects.
- Increases retention of talented and skilled workforce to provide a competitive edge to the enterprise.
- Enables completion of projects in a timely manner with the highest quality and level of workmanship.
- Minimizes turnover, which in turn minimizes training expenses of new employees.

DOCUMENTATION

- Policy statements
- Documentation of certifications
- Budgets and prior year expenditures for employee reimbursement

CN16-SR-5 Social Responsibility: Company Philanthropy & Social Investments

INTENT

Develop and implement philanthropic activities that benefit outside communities.

POINT ALLOCATION

2 Construction Points

ACTIONS & TARGETS

To achieve points, comply with the following:

- Contractors and major subcontractors involved in the project must develop a company-wide philanthropy and social investment policy
- Contractors and major subcontractors involved in the project must develop a philanthropic goal.

TECHNICAL APPROACHES

- Social and philanthropic activities may be of financial (monetary) nature or material (donation) such as giving of books, equipment or time.
- Establish a program where employees may set goals for volunteering hours, charities or donation amounts.

BENEFITS

- Provides social organizations with funds for implementing programs doing social good.
- Enhances the reputation and public profile of the organization overall.
- Provides an opportunity to counter negative publicity.
- Maintains and establishes the brand image/identity of an organization such as LAWA.

DOCUMENTATION

- Documentation of time, materials or dollars donated and to the names of each charity

CN16-SR-6 Social Responsibility: Promote the Use of Local Contractors & Suppliers

INTENT

Utilize the services of local contractors and suppliers

POINT ALLOCATION

1 Construction Point

ACTIONS & TARGETS

To achieve points, comply with the following:

- Establish a policy to use local suppliers a nd contractors and include a recommended percentage (e.g., 25% local input); AND
- Give extra weight (typically 5%) to sub-contractors who use local suppliers during contracting and bidding process; AND
- Make available design drawings and bid documents at low or no cost to local contractors and suppliers as appropriate.

TECHNICAL APPROACHES

- Seek strategic local suppliers and contractors, which can lead to a better competitive positioning and better public relations.
- Introduce process efficiencies and reduce energy use and costs due to reduced shipping distances with a longer-term collaborative relationship with local suppliers, which will lead to an overall positive impact to the sustainable goals.
- Seek assistance from LAWA's Business and Job Opportunities Division which provides employment and educational outreach services to local community-based organizations and community residents.

BENEFITS

- Sustains local businesses so that the community benefits with jobs and revenue for businesses.
- Potentially reduces costs for the project and provides cost savings.
- Serves as a trigger to spur new development and economic activity in areas historically neglected for development.
- Reduces use of fossil fuels and associated costs in the transport of materials and components.

DOCUMENTATION

- Documentation of local supplier and contractor selection that ensures that the prime contractors utilize local firms
- List of local suppliers/contractors

CN17-AE-1 Additional Construction Elements: LEED® Accredited Professional - Construction

INTENT

Support and encourage the integration of sustainable concepts and practices into the construction processes as required by these Guidelines.

POINT ALLOCATION

1 Potential Construction Point

ACTIONS & TARGETS

To achieve points, comply with the following:

- Follow the requirements outlined in the latest LEED® standards. (See most recent Addendum): At least three principal participants of the construction team shall be LEED® Accredited Professionals (AP).

TECHNICAL APPROACHES

- Assign Construction Team Members to take the LEED® Professional Accreditation Exam, if not certified already.
- Assign the LEED® APs to review with the Construction Team Members the information regarding sustainable concepts and practices including green building design and construction and the application of the LAWA-Sustainable Rating System early in the project life cycle.
- Include at least three LEED® APs on the Construction Team.

BENEFITS

- Provides in-house expertise and experiences in coordinating the documentation process similar to that required for LAWA-Sustainable Certification.
- Monitors progress through construction phase and identifies conflicts early to reconcile overall project and sustainability objectives.
- Reduces Stop Work incidences and Change Orders that could potentially increase project costs.

DOCUMENTATION

- Follow the requirements outlined in the latest LEED® standards. (See most recent Addendum):
  - Provide the names of the LEED® AP.
  - Provide the name(s) of the LEED® AP's company.
  - Provide a brief description of the LEED® AP's project role(s).
  - Provide a copy of the LEED® AP certificate.

ACKNOWLEDGMENTS

or as updated in the Addendum

- LEED® for New Construction and Major Renovations v2.2, United States Green Building Council, 2nd Edition, September 2006.

CN17-AE-2 Additional Construction Elements: Innovation in Construction

INTENT

Provide projects with the opportunity to be awarded additional CPs for exceptional performance in a particular LAWA-Sustainable Performance Standard. Alternatively, additional CPs may be awarded for use of innovative materials, technologies or practices not specifically addressed by this rating system.

ACTIONS & TARGETS

To achieve points, comply with the following:

- Follow the requirements outlined in the latest LEED® standards. (See most recent Addendum): In writing, identify the intent of the proposed innovation credit, the proposed requirement for compliance, the proposed submittals to demonstrate compliance and the design approach (strategies) that might be used to meet the requirements.

TECHNICAL APPROACHES

- Substantially exceed a LAWA-Sustainable Performance Standard.

POINT ALLOCATION

Variable Points

- See Appendix for explanation of point allocation.

BENEFITS

- Encourages the use of evolving sustainable initiatives and technologies that may provide unanticipated environmental, social and economic benefits to achieve the sustainable goals of the project.
- Elevates a benchmark for sustainable construction practices by surpassing prescribed LAWA-Sustainable Performance Standards.
- Increases the likelihood of achieving and upgrading the targeted LAWA-Sustainable Level.

DOCUMENTATION

- Follow the requirements outlined in the latest LEED® standards. (See most recent Addendum):
  - Specific title for the credit being pursued.
  - Narrative statement of the Credit Intent.
  - Narrative statement describing the Credit Requirements.
  - Detailed narrative describing the project's approach to achievement of the credit. This narrative should include a description of the quantifiable environmental benefits of the credit proposal.
  - Copies of specific construction drawings or exhibits as applicable, that will serve to illustrate the project's approach to the credit. Separate set of submittals is required for each point pursued.

ACKNOWLEDGMENTS

or as updated in the Addendum

- USGBC, 2005. LEED® for New Construction and Major Renovations Version 2.2, October.

ACRONYMS

AASHTO American Association of State Highway and Transportation Officials

ADA Americans with Disabilities Act

ASHRAE American Society of Heating, Refrigerating, and Air-Conditioning Engineers

ACI Airports Council International

ACQ Ammoniacal Copper Quaternary

APS Auxiliary Power System

ASTM American Society of Testing and Materials

BOAC Board of Airport Commissioners

BMP Best Management Practices

CARB California Air Resources Board

CCA Copper Chromate Arsenate

CDA Continuous Descent Arrival

CDE Carbon Dioxide Equivalent (also abbreviated as CO_2e)

CEQA California Environmental Quality Act of 1970

CI Commercial Interiors (LEED®)

CIP LAWA's Capital Improvement Program

CFC Chlorofluorocarbon

CN Construction

CO_2 Carbon Dioxide

CO_2e Carbon Dioxide Equivalent (also abbreviated as CDE)

CP Construction Point that can be earned by ach eving a performance standard of the Sustainable Construction Guidelines

CRRC Cool Roof Rating Council

CRT Cathode Ray Tube

CS Core and Shell (LEED®)

CTMP Construction Traffic Management Plan

DNL Day-Night Average Sound Level

DP Design Point that can be earned by achieving a performance standard of the Sustainable Planning and Design Guidelines

EB Existing Building (LEED®)

EIR Environmental Impact Report

EIS Environmental Impact Statement

EM Electromagnetic

EO Executive Order

ETS Environmental Tobacco Smoke

FAA Federal Aviation Administration

FEMA Federal Emergency Management Agency

FEMP Federal Energy Management Plan

FHWA Federal Highway Administration

FIDIC International Federation of Consulting Engineers

FSC Forest Stewardship Council

FTP File Transfer Protocol

GHG Greenhouse Gas

GPU Ground Power Unit

GRI Global Reporting Institute

HAP Hazardous Air Pollutants

HASP Health and Safety Plan

HCFC Hydrochlorofluorocarbon

HFC Hydrofluorocarbon

HPS High Pressure Sodium

HPV Human Powered Vehicle

HVAC&R Heating, Ventilation, Air Conditioning, and Refrigeration

IAQ Indoor Air Quality

ICF Insulated Concrete Forms

IESNA Illuminating Engineering Society of North America

IPM Integrated Pest Management

IPMVP International Performance Measurement & Verification Protocol

ISO International Organization for Standardization

LAWA Los Angeles World Airports

LAX Los Angeles International Airport

LCA Life Cycle Analysis

LED Light Emitting Diode

LEED® Leadership in Energy and Environmental Design

LEED® AP LEED® Accredited Professional

LEED®-CI LEED® for Commercial Interiors

LEED®-CS LEED® for Core and Shell

LEED®-EB LEED® for Existing Buildings

LEED®-NC LEED® for New Construction and Major Renovations

LID Low Impact Development

ACRONYMS (CONTINUED)

MERV Minimum Efficiency Reporting Value

MH Metal Halide

MMRP Mitigation, Monitoring, and Reporting Program

MRF Materials Recycling Facility

MSDS Material Safety Data Sheet

NA Number of Events Above

NADP Noise Abatement Departure Procedure

NC Noise Criterion or New Construction and Renovation (LEED®)

NEPA National Environmental Policy Act

NFPA National Fire Protection Association

O&M Operation & Maintenance

ONT LA/Ontario International Airport

ORD Chicago O'Hare International Airport

OSHA Occupational Safety and Health Association

PANYNJ Port Authority of New York and New Jersey

PD Planning and Design

PECI Portland Energy Conservation, Inc.

PFC Perfluorocarbon

PMD LA/Palmdale Regional Airport

Q&A Question and Answer

RC Room Criterion

RCM Runway Construction Model

RFP Request for Proposal

RFQ Request for Qualifications

RNP Required Navigation Procedure

ROI Return on Investment

RRM Rapidly Renewable Materials

SCAQMD South Coast Air Quality Management District

SMACNA Sheet Metal and Air Conditioning National Contractors' Association

SOX Sarbanes-Oxley

SPCC Spill Prevention Countermeasure and Control

SWPPP Stormwater Pollution Prevention Plan

TA Time Above

TBL Triple Bottom Line

TSA Transportation Security Administration

TSS Total Suspended Solids

UC University of California

ULSD Ultra-low Sulfur Diesel

USACE United States Army Corps of Engineers

USDOA Unites States Department of Agriculture

USDOE United States Department of Energy

USDOT United States Department of Transportation

USEPA United States Environmental Protection Agency

USGBC United States Green Building Council

UV Ultraviolet

UW University of Washington

VALE Voluntary Airport Low-Emission Program

VNY Van Nuys Airport

VOC Volatile Organic Compound

WCI Western Climate Initiative

WRI World Resources Institute

ZEV Zero Emissions Vehicle

GLOSSARY

Albedo The fraction of light or solar radiation that is reflected by a surface.

Air Emissions Reduction Reduction of emissions that would normally occur with a combustion process typically from using an advanced combustion process or devices to remediate air emissions.

Air Toxics Emissions Emissions to the atmosphere that are toxic including but not limited to lead, mercury, sulfur, carbon monoxide, nitrogen oxides, ozone, particulate matter, etc.

Alternative Fuels Fuels that consists of non-conventional materials and substances that are largely renewable compared to fossil fuels (i.e. biodiesel, hydrogen).

Best Management Practice Standard and/or widely accepted industry policies, practices, procedures, and/or structures that are implemented on a project site to mitigate the adverse environmental impacts resulting from construction and operations phases of the development.

Building Envelope Exterior elements of a building (e.g. windows, walls, roof) that enclose the interior spaces.

Carbon Footprint Measurement of the impact from human activities in terms of the amount of greenhouse gases produced in units of carbon dioxide equivalents (CDE or CO2e).

Carbon Neutral Zero net release of carbon to the environmental; zero net emissions of greenhouse gasses.

Certified Design Design project where a licensed professional is required to approve, stamp and/or sign the final design.

Change Orders Addendums made during construction that stray from contract specifications and drawings.

Construction Drawings, contracts, RFIs, specifications, change orders or Documentation other documents associated with a construction project.

Construction Site Plan Plan developed to coordinate contractors for construction purposes.

Construction Waste Management Plan Plan that outlines the goals and methods to divert construction and demolition waste from landfills and to return appropriate materials into the manufacturing life cycle.

Core and Shell Base building elements, such as the structure, envelope and building-level systems (e.g. HVAC, lighting, security).

Diesel Particulate Filter A particulate filter used to remove particulate matter created during the combustion of diesel fuels that reduce air quality.

Diesel Oxidation Catalyst Catalyst to control carbon monoxide, hydrocarbons, odor causing compounds, and the soluble organic fraction of particulate matter.

Deliverables Products that are submitted for review at major planning, design and construction project milestones.

Downgradient Direction of groundwater flow.

Eco-efficient Consideration of environmental stewardship & economic growth (not the Triple Bottom Line); maximizing economic returns while minimizing environmental impact.

Ecological footprint Impact that a population group, organization or individual imposes on the earth based on natural resources consumed & waste generated.

Embedded Energy Energy associated with the creation, manufacture or supply of a material or product. Also know as “Embodied Energy”.

Erosion & Sedimentation Controls Practices and applications that are employed on the project site to stabilize earthworks and protect conservation areas, buffers, waterways, and forests during construction.

Fossil Fuels Carbon or hydrocarbon fuels that form from the deposition of organisms over millions of years underground or beneath the sea floor (i.e. coal, oil, natural gas).

Geotextiles Permeable fabric or synthetic material that, when used in association with soil in different geotechnical engineering applications, enhance the ability of the soil to filter, reinforce, protect, or drain.

Graywater Stormwater or wastewater produced from baths and sinks (not toilets) that may be reused according to local regulations for purposes such as irrigation.

"Green" Consideration of environmental stewardship (not the Triple Bottom Line); planning, design, construction, and operation that minimizes the negative impacts on the environment.

Greenfields Land that has not previously been developed.

Greenhouse Gas Atmospheric gas that traps infrared radiation and contributes to rising temperatures of the planet (global warming). Common examples include carbon dioxide and methane.

Green Roof Building roof that is partially or completely covered with vegetation and soil planted over a waterproofing membrane.

Heat Island Effect Artificial thermal gradient between developed and undeveloped land as a result of solar heat retention in urban (developed) areas.

Hythane® A fuel blend of 20% hydrogen and 80% natural gas.

Infill Development New development within existing urban areas on a site that is either vacant or has been previously developed.

Light Pollution Illumination of the nocturnal sky by artificial or man-made sources that interfere and alter natural light levels.

Life Cycle Analysis The assessment and valuation of the potential environmental, economic and social impacts of a given product, process or service over the course of its lifetime. Also referred to as "Life Cycle Assessment".

Local Companies based in the Southern California area. For individuals, the First Source Hiring Program must be used.

Major Renovation Less than 50% of building occupants remain in the building during construction (encompasses the entire building).

Microclimate The climate within a microhabitat or a local, defined area.

Nitrogen Fixing The conversion by certain soil microorganisms (i.e. diazotrophs) of atmospheric nitrogen into useful compounds for other plants and organisms.

Non-Renewable Energy Energy sources that exist naturally in limited or finite amounts, such as fossil fuels.

Particulate Matter Microscopic solid and liquid particles that are easily suspended in the atmosphere.

Potable Water Water that is safe for human consumption.

Project Life Cycle In relation to the Guidelines and the LAWA-Sustainable Rating System, a project's life cycle includes all phases of planning, design, and construction for a project.

Project Milestones Examples include 30%, 60% & 90% design reviews, submissions to City Council or BOAC, RFP Development, Pre-Bid meetings, Bid Selection, and Construction Kick-off and Progress Meetings.

Rain-harvesting System Practices and structures by which to capture rainfall for reuse activities such as landscape irrigation.

Recycle and Reuse The act of using a discarded item for another use. The item must change shape or properties. (e.g. capturing concrete and grinding into material for reuse.)

Recycled Water Wastewater that is captured and treated to regulated levels for various reuse activities, such as landscape irrigation. Also known as "Reclaimed water"

Renewable Energy Energy derived and replenished from sources that are naturally inexhaustible (e.g. tidal, solar, wind).

Salvage The act of saving an item from destruction. The item must keep its original shape and use. (e.g. reusing bricks from buildings from a demolished property.)

Siltation The deposition of fine soil or mineral particles at the bottom of waterways and water bodies.

Specifications Documented standards that include details on the general description, quality, manufacturing requirements, and installation procedures necessary for project components and correspond to the construction drawings.

Stakeholders Individuals or entities internal or external to LAWA that may affect or be affected by the project. Stakeholders may include the Project Delivery Team, the construction, maintenance and operation teams, users of the final project, members of other LAWA projects that may be impacted or interested in collaboration on construction aspects, City officials, tenants, community participants, and members of the FAA, TSA and the USEPA.

Stormwater Discharges Runoff generated by rainfall events that does not infiltrate into the ground.

Sustainable Consideration of the Triple Bottom Line; environmental stewardship, economic growth & social responsibility.

Sustainability Performance A measure of how well an organization incorporates sustainability concepts and/or practices into its processes and/or operations based on established benchmarks and indicators.

Tailpipe Emissions Air pollutants and combustion by-products emitted from automobile exhaust systems.

Task Lighting Lighting installed in a local space or area to provide direct illumination for specific visual tasks.

Upgrade Greater than or equal to 50% of building occupants remain in the building during construction (encompasses the entire building).

Vegetated Surfaces Surfaces or areas that are covered with vegetation (e.g. meadows, forests, grass fields).

Virgin Materials Resources that are extracted from the environment in their raw form, such as timber, metal ore and minerals.

Waste Stream Waste generated that can be characterized from a single source, common source, or common material.

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ADDENDUM

Performance Standard	Referenced Material*
PD1-PI-1 - PD2-GP-1	
PD2-GP-2	■ United States Department of Agriculture in the United States Code of Federal Regulations, Title 7, Volume 6, Parts 400 to 699, Section 657.5, citation 657.5
PD2-GP-3	■ ASTM E1903-07 Phase II Environmental Site Assessment
PD2-GP-4 - PD2-GP-6	
PD3-AP-1	■ Federal Aviation Regulation, Part 150, Appendix A ■ FAA Order 1050.1E, Environmental Impacts: Policies and Procedures
PD3-AP-2 - PD3-AP-5	
PD4-LP-1	■ ASTM E1014-84, Standard Guide for Measurement of Outdoor A-Weighted Sound Levels ■ Measurement of Highway-Related Noise, FHWA-PD-96-046 DOT-VNtSC-FHWA-96-5
PD4-LP-2	■ ACI case study for Heathrow Airport: http://www.aci.aero/cda/aci_common/display/main/aci_content07_c.jsp?zn=aci&cp=1-4612-4615_666_2__%0D
PD4-LP-3	■ LEED®-NC v3 SSc4.1 ■ LEED®-CS v3 SSc4.1 ■ LEED®-CI v3 SSc3.1 ■ LEED®-EB v3 SSc4.1
PD4-LP-4	■ LEED®-NC v3 SSc4.2
PD4-LP-5	■ CARB LEV definition ■ LEED®-NC v3 SSc4.4 ■ LEED®-CS v3 SSc4.4 ■ LEED®-CI v3 SSc3.3 ■ LEED®-EB v3 SSc4.4
PD4-LP-6	■ LEED®-NC v3 SSc4.3
PD4-LP-7 - PD6-SM-1	
PD6-SM-2	■ Best Management Practices in Chapter 4, part 2 of the USEPA's Guidance Specifying Management Measures for Sources of Nonpoint Pollution in Coastal Waters, January 1993
PD7-LD-1	■ LEED®-NC v3 WEc1
PD7-LD-2 - PD7-LD-3	
PD8-WE-1	■ Executive Order 13423—*Strengthening Federal Environmental, Energy and Transportation Management* (January 2007) ■ State of California. Title 22 Division 4 Chapter 3, Water Recycling Criteria
PD8-WE-2	■ Energy Policy Act of 1992 Plumbing Fixture Requirements ■ LEED®-NC v3 WEc3
PD8-WE-3	■ State of California. Title 22 Division 4 Chapter 3, Water Recycling Criteria ■ LEED®-NC v3 WEc3
PD9-HI-1	■ 2005 California Title 24 Section 3.4

***Note:** *If the performance standard is blank, no references were made. If there is a bullet point, then it is a place holder for a reference.*

ADDENDUM (CONTINUED)

Performance Standard	Referenced Material*
PD9-HI-2	■ LEED®-NC v3 SSc7.1
PD10-LQ-1	■ LEED®-NC v3 SSc8
PD10-LQ-2	
PD11-NP-1	■ ASTM E336-05, Standard Test Method for Measurement of Airborne Sound Insulation in Buildings ■ ASTM 1332-90, Standard Classification for Determination of Outdoor-Indoor Transmission Class ■ ASTM C423-07a, Standard Test Method for Sound Absorption and Sound Absorption Coefficients by the Reverberation Room Method
PD12-EC-1	■ California Energy Commission, 2005. California Title 24 Energy Efficiency Standards
PD12-EC-2	
PD12-EC-3	■ California Energy Commission, 2005. California Title 24 Energy Efficiency Standards ■ www.energystar.gov
PD12-EC-4 - PD12-EC-5	
PD13-EI-1	■ SCAQMD Rule 219 ■ Section 608 of the Clean Air Act, National Recycling and Emission Reduction Program ■ SCAQMD Rule 1415, Reduction of Refrigerant Emissions from Stationary Refrigeration and Air Condition System
PD13-EI-2	■ California Assembly Bill 32 (AB32) requirements ■ ISO 14064 Part 1 methodologies ■ World Resources Institute (WRI) GHG protocol ■ ISO 14064 Part 3 ■ ISO 14065 methodologies and standards
PD13-EI-3	■ Urbemis Model (Urbemis 2007 Version 9.2.2) ■ SCAQMD Rule 1401, Air Toxics Analysis
PD14-MR-1	■ ASTM E2129-05 ■ EPA's Green Purchasing Guidelines ■ LEED®-NC v3 MRp1 ■ California Integrated Waste Management Board www.ciwmb.ca.gov/WasteChar/
PD14-MR-2	
PD14-MR-3	■ LEED®-NC v3 MRc1.1
PD14-MR-4	■ LEED®-NC v3 MRc3 ■ California Materials Exchange from California's Integrated Waste Management Board www.ciwmb.ca.gov/CalMAX ■ Salvaged Building Materials Exchange www.greenguide.com/exchange
PD14-MR-5	■ LEED®-NC v3 MRc4 ■ Guide to Resource-Efficient Building Elements from the Center for Resourceful Building Technology www.crbt.org/index.html ■ Recycled Content Product Directory from the California Integrated Waste Management Board www.ciwmb.ca.gov/rcp ■ Oikos www.oikos.com

***Note:** *If the performance standard is blank, no references were made. If there is a bullet point, then it is a place holder for a reference.*

Performance Standard	Referenced Material*
PD14-MR-6	■ University of Washington (UW) Greenroads v0.95 credit PT-1, Long Life Pavement Design: http://www.greenroads.us/ ■ University of Washington (UW) Greenroads v0.95 credit PR-8, Pavement Life Cycle Assessment: http://www.greenroads.us/ ■ University of Washington (UW) Greenroads v0.95 credit PR-6, Construction Quality Control: http://www.greenroads.us/ ■ University of Washington (UW) Greenroads v0.95 credit CA-1, Quality Management System: http://www.greenroads.us/
PD14-MR-7	■ LEED®-NC v3 MRc5
PD14-MR-8	■ LEED®-NC v3 MRc6 ■ GreenSpec, from BuildingGreen, Inc. www.buildinggreen.com/menus/index.cfm ■ Oikos www.oikos.com
PD14-MR-9	■ LEED®-NC v3 MRc7 ■ Forest Stewardship Council (FSC), United States www.fscus.org/green_building
PD14-MR-10	
PD14-MR-11	■ SCAQMD, Rule 1168, Adhesives and Sealants ■ SCAQMD, Rule 1113, Paints and Coatings ■ Carpet and Rug Institute “Green Label” standard
PD14-MR-12	■ Greenguard www.greenguard.org ■ LEED® v3
PD14-MR-13	■ King County Guide to Design for Disassembly http://your.king.county.gov/solidwaste/greenbuilding/toolkit/commercial/deconstruction-guide.pdf
PD14-MR-14	
PD15-IQ-1	■ ASHRAE 62.1-2004, Ventilation for Acceptable Indoor Air Quality
PD15-IQ-2	
PD15-IQ-3	■ ASHRAE 62.1 standards ■ Carbon Trust Good Practice Guide 237 ■ ASHRAE 2001 Fundamentals, Chapter 32, Space Air Diffusion
PD15-IQ-4 - PD15-IQ-5	
PD15-IQ-6	■ ASHRAE Standard 55-2004, Thermal Comfort Conditions
PD15-IQ-7 - PD16-PC-2	
PD16-PC-3	■ Option B, C or D of the 2001 International Performance Measures & Verification Protocol (IPMVP) Volume III, Part 1: Concepts and Practices for Determining Energy Savings in New Construction ■ Option B, C or D of the 2001 International Performance Measures & Verification Protocol (IPMVP) Volume I: Concepts and Options for Determining Energy and Water Savings
PD16-PC-4	■ A Retrocommissioning Guide for Building Owners, Portland Energy Conservation, Inc. (PECI), 2007
PD16-PC-5 - PD17-SR-7	
PD18-AE-1	■ LEED®-NC v3 IDc2 ■ California Title 24 Energy Efficiency Standards

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ADDENDUM (CONTINUED)

Performance Standard	Referenced Material*
PD18-AE-2	■ LEED®-NC v3 IDc1
CN1-PL-1 - CN2-CS-4	
CN3-SM-1	■ NPDES General Permit
CN3-SM-2	
CN3-SM-3	■ California's MSGP SWPPP requirements
CN3-SM-4	
CN4-WC-1	■ California Title 22 Division 3 Chapter 3, Water Recycling Criteria
CN5-IA-1	■ LEED®-NC v3 I EQc3.1 ■ Design Approaches of the SMACNA IAQ, Chapter 3 ■ ASHRAE 52.2-1999
CN5-IA-2	■ LEED®-NC v3 I EQc3.2 OPTION 1 and OPTION 2
CN6-WM-1	■ LEED®-NC v3 MRc2 ■ "Construction Waste Management Database" provided by the Whole Building Design Guide at http://www.wbdg.org/tools/cwm.php
CN6-WM-2	■ "Construction Waste Management Database" provided by the Whole Building Design Guide at http://www.wbdg.org/tools/cwm.php
CN7-CV-1	■ CARB Section 2485, Airborne Toxic Control Measure to Limit Diesel-Fueled Commercial Motor Vehicle Idling.
CN7-CV-2	■ SCAQMD Rule 1191 ■ SCAQMD Rule 1196 ■ California Low-Emission Vehicle Standards
CN7-CV-3	■ California Low-Emission Vehicle Standards
CN7-CV-4 - CN8-CE-1	
CN8-CE-2	■ CARB Section 93116, Airborne Toxic Control Measures for Diesel Particulate Matter from Portable Engines Rated at 50 Horsepower or Greater
CN9-EI-1	■ Section 608 of the Clean Air Act, National Recyling and Emission Reduction Program ■ SCAQMD Rule 1415, Reduction of Refrigerant Emissions from Stationary Refrigeration and Air Condition Systems
CN9-EI-2	■ California Assembly Bill 32 (AB32) ■ ISO 14064 Part 1 Methodologies ■ World Resources Institute (WRI) GHG Protocol Requirements ■ ISO 14064 Part 3 ■ ISO 14065 Methodologies and Standards
CN9-EI-3	■ Urbemis Model (Urbemis 2007 Version 9.2.2) ■ SCAQMD Rule 1401, Air Toxics Analysis ■ SCAQMD Rule 403
CN10-MC-1 - CN11-NC-2	
CN12-CL-1	■ LEED®-NC v3 SSc8

***Note:** *If the performance standard is blank, no references were made. If there is a bullet point, then it is a place holder for a reference.*

ADDENDUM (CONTINUED))

Performance Standard	Referenced Material*
CN12-CL-2	■ ASHRAE/IESNA Standard 90.1 User's Manual
CN13-LM-1 - CN13-LM-2	
CN13-LM-3	■ LEED®-EB v3 SSc3
CN14-HS-1	■ OSHA VPP http://www.osha.gov/dcsp/vpp/index.html
CN14-HS-2	
CN15-CR-1	■ Standard Operating Procedure ST-18 ■ Section 21-2.5 of the LAX Master Plan's MMRP
CN15-CR-2 - CN16-SR-2	
CN17-AE-1	■ LEED®-NC v3 IDc2
CN17-AE-2	■ LEED®-NC v3 IDc1

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APPENDIX - LAWA Sustainable Rating Point Structure

Intent

The intent of the point structure is to systematically assess the level of complexity in achieving the planning and design and construction performance standards. The point structure was derived from the University of Washington's Green Roads rating system. Performance standards are assigned points depending on the difficulty in achieving the standard, whether impacts of the performance standard are short- or long-term or whether regulations, laws and industry standards require a certain level of achievement of the performance standard. By creating a systematic point structure, each standard is judged based on similar criterion.

Additional points may be achieved if the activity and/or the results of that activity go above and beyond the original intent of the performance standard or whether follow-up is required after construction is completed. Therefore, some performance standards may receive up to 10 points. The table below illustrates the point distribution.

Description of Point Allocations

Points	Description
1	Short-term results that tend to affect the specific project. The actions and targets are easily attainable and meet existing regulatory requirements or industry standards. Generally, most construction standards have short-term impacts which are met during construction with limited long-term impact once construction is completed.
2	Long-term results that meet the sustainability goals and initiatives of LAWA. The actions and targets are easily attainable and meet existing regulatory requirements or industry standards.
3	Long-term results that meet the sustainability goals and initiatives of LAWA. Actions and targets are complex and/or innovative. Actions and targets are above and beyond existing regulation or industry standard.
+1	Follow-up is required once construction is completed. In some instances, the performance standard requires that the contractor report back on results a year after construction is completed.
+1	Measures taken or results of those measures go above and beyond the intent and goal of the performance standard. For example, a performance standard may require a 50% reduction. If the project achieves 90%, then an additional point may be given.

Innovation in Planning, Design & Construction

Additional points available for going above and beyond the standard do not replace the Innovation in Planning & Design (PD18-AE-1) and Innovation in Construction (CN17-AE-2) performance standards. Those Performance Standards are intended to promote innovative design or goals that are not captured in the existing performance standards. If a project is proposing to submit an innovative performance standard the same point analysis will be conducted for that innovation to determine the number of points that new standard may achieve, thus allowing for up to 4 points per innovative performance standard (3 points for higher difficulty with long-term impacts plus 1 point for follow-up). Up to 3 innovation standards are allowed for a maximum of 12 additional points.

LAWA would like to thank the following people who worked to develop and implement LSAG:

Intissar Durham
Michael Feldman
Robert Freeman
Roger Johnson
Steve Bradford
Michael Chang
Teren Correnti
Jim Crane
Eric Davis
Vivien Fairlamb
Ed Gallindo
Herb Glasgow
Fred Glick
Arthur Goh
Hari Gupta
Debbie Halpin
Vivian Howell
Tim Ihle
Robin Ijams
Virginia Jackson
Dave Jensen
Robin Johnson
Jennifer Jones
Kristin LeMaster
Helen McCreery
Tom McHugh
Crislyn McKerron
Jackie Nseir
Magda Pavlak-Chiaradia
John Pearson
Anthony Primo
Heather Puckett
Tree Raine
Bob Randazzo
Christine Salvaggio
Eileen Schoetzow
Jeff Smith
Teresa Sabol Spezio
Jolene Tam
Joseph Ulatowski
Dave Waldner
Marc Wallace
Tom Warriner
Ellen Wright