# 4.7 Construction Surface Transportation

## 4.7.1 Introduction

The traffic analysis presented in this section addresses the construction traffic impacts specific to the proposed Project. The construction traffic impacts were analyzed for both the peak construction period for the proposed Project (August 2014) and the peak cumulative condition (March 2018). The peak construction month for the proposed Project does not correspond to the peak cumulative condition, which includes traffic from the construction of other known projects anticipated to be under construction during the overall 60 month development timeframe.

This proposed Project construction traffic analysis incorporates relevant analysis and assumptions from the Los Angeles International Airport (LAX or the Airport) Master Plan Environmental Impact Report (EIR),[1] the South Airfield Improvement Project (SAIP) EIR,[2] the Crossfield Taxiway Project (CFTP) EIR,[3] Bradley West Project EIR,[4] and the Central Utility Plant Replacement Project (CUP-RP) EIR.[5] The traffic conditions resulting from the construction of the CFTP, Bradley West Project, CUP-RP and the proposed Project are similar in terms of regional approach/departure patterns and construction peaking characteristics. Therefore, the analysis procedures and data already known from these other projects were applied and updated as appropriate for the proposed Project.

Construction employee parking and material staging for deliveries associated with the construction of the proposed Project would be located on the west side of the Airport, bounded by World Way West on the north, undeveloped airport land on the south, Taxiway AA on the east, and South Pershing Drive on the west. This analysis assesses anticipated construction-related traffic impacts at off-airport intersections associated with the construction of the proposed Project, including the traffic impacts of construction employee vehicles, construction equipment, material delivery trucks, and truck trips associated with removal of soil stockpiles currently located on the site.

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

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

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

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

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

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

Prior to the preparation of this EIR, an Initial Study (IS – in Appendix A of this EIR) was prepared using the California Environmental Quality Act (CEQA) Environmental Checklist Form to assess potential environmental impacts associated with transportation/circulation. For several issues related to transportation/circulation the IS found that the proposed Project would result in "no impact" and thus, no further analysis of these topics in an EIR was required. Refinements have been made to the proposed Project to reflect additional information and coordination with the public and the FAA. The refinements do not represent a material change to the proposed Project that was described in the IS/NOP and do not change any of the conclusions in the IS. The thresholds not addressed further include:

- Potential impacts from a change in air traffic patterns, including either an increase in traffic levels or a change in location, that would result in substantial safety risks were evaluated and determined to have "No Impact" in the IS as the proposed Project would provide an area for maintenance and parking of aircraft, but would not change air traffic patterns or increase air traffic levels.
- Potential impacts related to substantially increased hazards due to a design feature (e.g., sharp curves) or incompatible uses (e.g., farm equipment); potential impacts that would result in inadequate emergency access; or potential impacts that would result in a conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities, were evaluated and determined to have "No Impact" in the IS. As the proposed Project would not change existing road alignments or geometrics, would not include new public streets, and would not remove existing public streets further analysis of these topics in an EIR was not required. Furthermore, the proposed Project would not change existing bicycle or pedestrian facilities, and would not create new demand for bicycle, pedestrian, or transit facilities and services (given the lack of a net increase in airport employees under the proposed Project).
- Potential operational impacts related to conflicts with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system and potential conflicts with an applicable Congestion Management Project (CMP), including, but not limited to level of service (LOS) standards and travel demand measures were determined to be less than significant. As the future operation of the proposed Project would not result in long-term operational changes to traffic activity and traffic flows within the Airport study area as, in the long-term, the proposed Project would not increase the number of employees or airline passengers traveling to/through LAX. Therefore, an operational analysis of future traffic activity associated with proposed Project operations is not necessary.

## 4.7.2 Methodology

### 4.7.2.1 Overview

As noted above, this analysis focuses on construction impacts of the proposed Project. The analysis methodology for this EIR is based largely on the approach and data used for the Bradley West Project EIR and CUP-RP EIR. The analyses procedures and data from these previous projects are applicable to the proposed Project because the construction of the

projects overlap and share many of the same characteristics related to vehicle peaking patterns and travel paths.

The traffic study area includes intersections and roadways anticipated to be directly or indirectly affected by the construction of the proposed Project. Construction employee parking and material staging for the Project are proposed to be located at the surface lot near the work area, as further described below. The traffic study area for this analysis includes those roads and intersections that would most likely be used by employee and truck traffic associated with construction of the proposed Project. The procedures are also consistent with the information and requirements defined in City of Los Angeles Department of Transportation (LADOT) *Traffic Study Policies and Procedures*, revised by the LADOT in December 2010, notwithstanding that a construction traffic analysis is not typically required by LADOT.

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

- The traffic study area was defined according to the travel paths that would be used by construction traffic to access the Project site, equipment, materials staging, and parking areas. Construction delivery vehicle travel paths would be regulated according to the construction traffic management plan required through the LAX Master Plan Mitigation Monitoring and Reporting Program (MMRP).[6] The construction of the proposed Project would occur at the location immediately west of Taxiway AA and south of World Way West. The proposed Project involves the development of airline aircraft maintenance facilities in the southwest portion of LAX, with construction employee parking and material staging for deliveries occurring at or near the site, with primary access provided via World Way West.
- Intersection turning movement traffic volume data were collected at the key traffic study area intersections on Tuesday, April 30, 2013, and on Wednesday, May 15, 2013, from 6:00 a.m. to 10:00 a.m. and from 3:00 p.m. to 6:00 p.m. These extended traffic count periods were established to obtain current traffic count data during the (a) AM peak inbound hour for construction employees and deliveries and (b) the PM peak outbound hour for construction employees and deliveries. Pursuant to the mitigation requirements set forth in the LAX Master Plan EIR, construction truck delivery and construction employee traffic activity would not be scheduled during the morning or afternoon commute peak periods which were also counted during the data collection survey. The estimated peak hours for construction-related traffic were determined by reviewing the estimated hourly construction-related trip activity for the proposed Project developed for this study.[7] The AM peak construction hour was determined to be 6:00 a.m. to 7:00 a.m. and the PM peak construction hour was determined to be 3:30 p.m. to 4:30 p.m., both of which occur outside of the normal peak commuter periods.
- Key off-airport intersections, including intersections with freeway ramps in the proposed traffic study area, were analyzed. Impacts to roadway segments and freeway links were not analyzed because construction-related traffic activity is anticipated to occur outside of peak commute periods.

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6 LAX Master Plan commitments that are applicable to construction traffic are applied to this project to mitigate potential construction-related impacts.

7 CDM Smith, WAMA_Crew Estimates_v02_13 March 2013_8 hr days.xls, March 2013 (employee trip volumes, truck trips); LAWA Airport Development Group (ADG), 6.22.2012 EIR Truck Assumptions.pdf, November 2012 (vehicle schedule times).

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

### 4.7.2.2 Determination of Baseline Traffic Conditions

Baseline conditions used in the analysis of Project-related construction traffic impacts are defined as the existing conditions within the traffic study area at the time the Notice of Preparation (NOP) was published (September 2012). Intersection turning movement volumes were collected in April and May 2013, providing current comprehensive traffic counts completed by LAWA. These volumes were considered to reasonably representative of baseline conditions used as a basis for preparing the traffic analysis and assessing potential Project-related traffic impacts. The following steps were taken to develop baseline traffic conditions information.

**Prepare Model of Study Area Roadways and Intersections--**A model of traffic study area roadways and intersections was developed to assist with intersection capacity analysis (i.e., geometric configuration, quantitative delineation of capacity, and operational characteristics of intersections likely to be affected by the proposed Project's traffic). The model was developed using TRAFFIX,[8] a commercially available traffic analysis software program designed for developing traffic forecasts and analyzing intersection and roadway capacities. The model uses widely accepted traffic engineering methodologies and procedures, including the Transportation Research Board Critical Movement Analysis (CMA) Circular 212 Planning Method,[9] which is the required intersection analysis methodology for traffic impact studies conducted within the City of Los Angeles.

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

### 4.7.2.3 Determination of Baseline Plus Peak Proposed Project Traffic Conditions

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

**Analyze Peak Proposed Project Construction Activity--**Vehicle trips associated with construction of the proposed Project during the peak month of construction activity were estimated and distributed throughout the traffic study area network. The trips were estimated based on a review of the proposed Project construction schedules and associated workforce

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8 Dowling Associates, TRAFFIX Version 7.7.

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

levels and equipment, including trucks and other construction vehicles. Project-related construction trips were summarized to delineate peak month inbound and outbound construction employee trips and truck trips by hour of the day. The estimate of proposed Project construction trips was based on construction employee workload schedules prepared for this proposed Project.[10] The construction employee trip distribution patterns were based on regional patterns developed for the proposed Project and previous LAWA construction traffic studies using the modeling results prepared for the LAX Master Plan EIR, specific haul route information, airline passenger survey information, and regional population distributions.

**Estimate Baseline Plus Peak Proposed Project Traffic Volumes--**The estimated Baseline Plus Peak proposed Project (referred to hereinafter as Baseline Plus Project) traffic volumes were estimated by adding the Project volumes during the peak proposed Project activity period anticipated to occur in August 2014 to the baseline volumes.

### 4.7.2.4 Delineation of Future Cumulative Traffic Conditions

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

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

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

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

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

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

[10] CDM Smith, WAMA_Crew Estimates_v02_13 March 2013_8 hr days.xls, March 2013.

### 4.7.2.4.1 Cumulative Traffic (March 2018) Without Project

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

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

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

- Baseline 2013 traffic volumes were multiplied by a growth factor of two percent per year to account for local background traffic growth through 2018. This annual growth rate assumption is consistent with previous direction first provided by LADOT for use in the SAIP[11] and subsequently used for construction traffic studies prepare for the CFTP EIR, Bradley West Project EIR, and the CUP-RP EIR.
- Construction trips for committed development projects on airport property that are expected to commence during the period of proposed Project construction were directly estimated and included in the analysis. Construction trips associated with the peak period of cumulative construction (March 2018) were estimated based on the estimated labor component of total construction cost and the timeline for each concurrent project. The projects that were considered as part of this analysis and the estimated trips associated with these projects are described in more detail below.

### 4.7.2.4.2 Cumulative Traffic (March 2018) With Project

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

## 4.7.2.5 Delineation of Impacts and Mitigation Measures

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

**Analyze Intersection and Roadway Levels of Service--**The levels of service on the traffic study area intersections and roadways were analyzed using TRAFFIX. Intersection LOS was estimated using the CMA planning level methodology, as defined in Transportation Research Board Circular 212,[12] in accordance with LADOT *Traffic Studies Policies and Procedures*

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

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

guidelines,[13] and the *L.A. CEQA Thresholds Guide*.[14] Intersection LOS was analyzed for the following conditions:

- Baseline;
- Baseline Plus Project Traffic;
- Future Cumulative Traffic (March 2018) Without Project;
- Future Cumulative Traffic (March 2018) With Project.

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

- **Baseline Plus Project Compared with Baseline:** This comparison is utilized to isolate the potential impacts of the proposed Project.
- **Cumulative Impacts:** Cumulative impacts were determined using a two-step process. Initially, the "Cumulative Traffic (March 2018) With Project" condition was compared to the baseline condition to determine if a cumulative impact would occur relative to baseline. An impact was deemed significant if it would exceed the allowable threshold of significance defined in the LADOT *Traffic Studies Policies and Procedures* guidelines. If a cumulative impact were determined, then a second comparison of the "With Project" vs. the "Without Project" LOS conditions was made to determine if the project's contribution of the cumulative impact is determined to be "cumulatively considerable" in accordance with the impact thresholds defined in Section 4.7.6 below.

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

## 4.7.3 Existing Conditions

### 4.7.3.1 Regulatory Context

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

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

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

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

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

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

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

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

Because the proposed Project is not anticipated to generate traffic during the AM or PM peak commute periods, it is not expected that the Project would meet or exceed the criteria set forth by Caltrans or LADOT. Therefore, a Traffic Impact Study is not required for the proposed Project. Additionally, because the proposed Project would not alter roadway circulation patterns or increase traffic volumes subsequent to construction, a CMP analysis is not required for post-construction traffic operations. Furthermore, during the scoping of the SAIP traffic study, LADOT indicated that no Traffic Study was required because there was "no requirement to assess the temporary impacts of a project resulting from construction activities. Thus, the proposal to prepare a Traffic Study is voluntary."[15] However, LAWA determined at that time and continues to believe that the preparation of a Traffic Study is useful in order to provide a full assessment and documentation of the potential impacts that may be generated by the construction of the proposed Project.

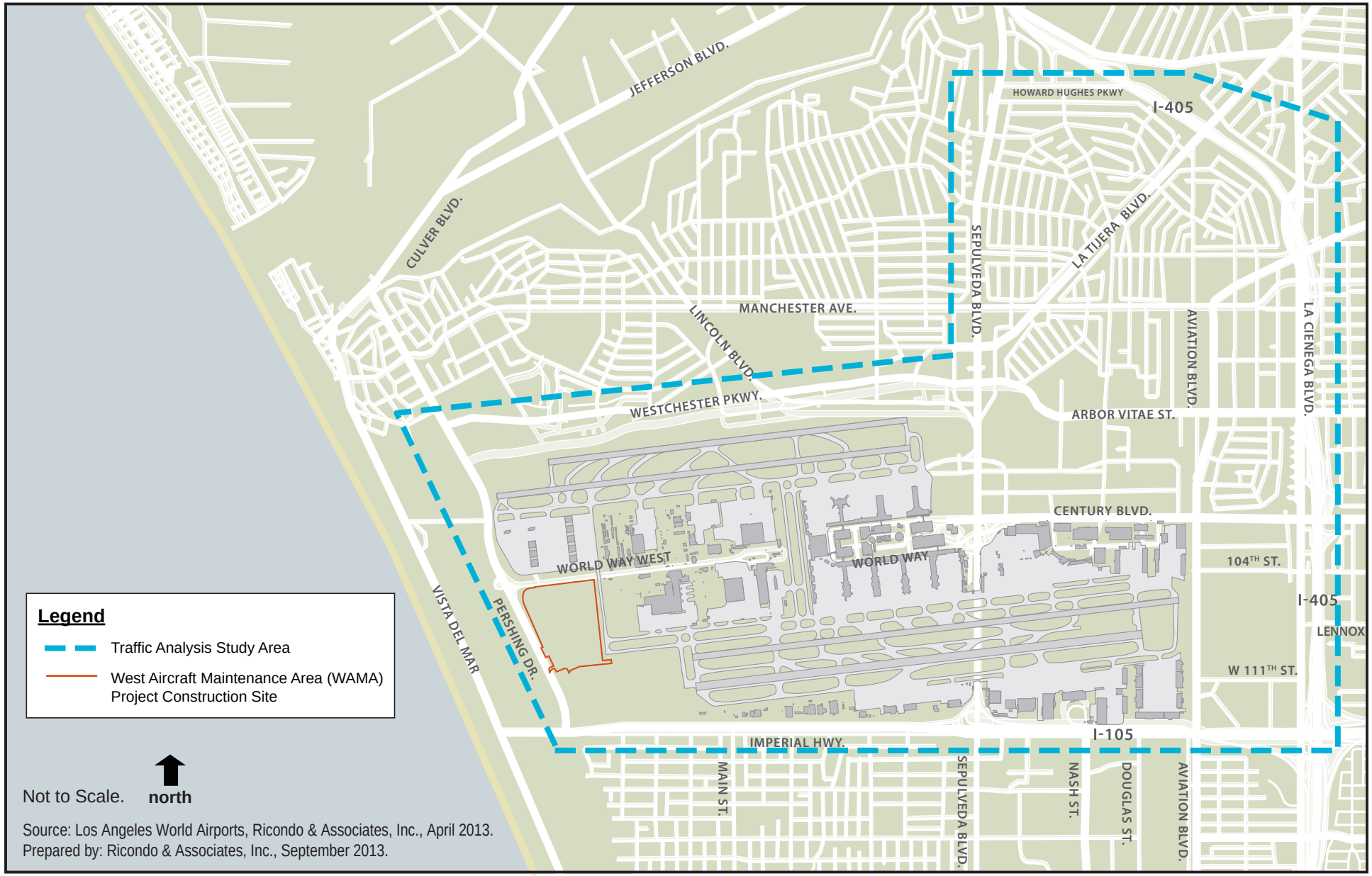
### 4.7.3.2 Baseline Conditions

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

### 4.7.3.3 Traffic Study Area

The construction traffic study area is depicted in **Figure 4.7-1**. The scope of the traffic study area was determined by identifying the intersections most likely to be used by construction-related vehicles accessing (1) the proposed Project construction site, construction employees parking area, and delivery staging areas and (2) the construction employee parking and staging areas for other concurrent construction projects in the vicinity of LAX. The traffic study area is generally bounded by Interstate 405 (I-405) to the east, Interstate 105 (I-105) and Imperial Highway to the south, Pershing Drive to the west, and Westchester Parkway, Sepulveda Boulevard, and Howard Hughes Parkway to the north. Figure 4.7-1 depicts the proposed Project construction site, which is located immediately west of Taxiway AA and south of World

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




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

| | | |
|---|---|---|
| **West Aircraft Maintenance Area Project Draft EIR** | **Construction Traffic Analysis Study Area** | Figure **4.7-1** |

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Way West. The construction employee parking and materials staging area is accessed via a driveway off of World Way West.

### 4.7.3.4 Traffic Study Area Roadways

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

- **I-405 (San Diego Freeway)** - This north-south freeway generally forms the eastern boundary of the construction traffic analysis traffic study area and provides regional access to the Airport and the surrounding area. Access to the traffic study area is provided via ramps at Howard Hughes Parkway, Century Boulevard, I-105, Imperial Highway, and three locations along La Cienega Boulevard.
- **I-105 (Glenn M. Anderson or Century Freeway)** - Along with Imperial Highway (described below), this east-west freeway forms the southern boundary of the construction traffic study area, and extends from the San Gabriel Freeway (Interstate 605 or I-605) on the east to Sepulveda Boulevard on the west. Access to the traffic study area is provided via ramps at Sepulveda Boulevard and along Imperial Highway. The westbound off-ramp from the I-105 Freeway to northbound Sepulveda Boulevard was widened to three lanes in March 2010.
- **Aviation Boulevard** - This north-south four-lane roadway bisects the traffic study area.
- **Century Boulevard** - This eight-lane divided roadway serves as the primary entry to the LAX Central Terminal Area (CTA). This roadway also provides access to off-airport businesses and hotels and on-airport aviation-related facilities (e.g., air cargo facilities) located between the CTA and I-405.
- **Imperial Highway** - This east-west roadway is located at-grade and beneath much of the elevated I-105 freeway. The number of lanes on this roadway varies from six-lanes east of the merge with I-105 to four-lanes west of the merge with I-105.
- **La Cienega Boulevard** - This north-south roadway parallels I-405 at the east boundary of the traffic study area. The roadway varies from four to six lanes.
- **Pershing Drive** - This north-south four-lane divided roadway forms the western boundary of the construction traffic study area.
- **Westchester Parkway** - This east-west four-lane divided arterial roadway forms a portion of the northern boundary of the traffic study area.
- **Sepulveda Boulevard (State Route 1 south of Lincoln Boulevard)** - This major north-south six-lane arterial roadway provides direct access to the Airport via I-405 and Westchester Parkway on the north and via I-105 on the south. A portion of Sepulveda Boulevard between I-105 and Century Boulevard is located in a tunnel section beneath the south airfield runways.
- **111th Street -** This east-west roadway has one lane in each direction separated by a continuous two-way left turn lane.

### 4.7.3.5 Existing Traffic Conditions

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

## 4.7.3.5.1 Traffic Study Area Intersections

Intersection locations and intersection control and geometry are discussed below.

## 4.7.3.5.2 Intersection Locations

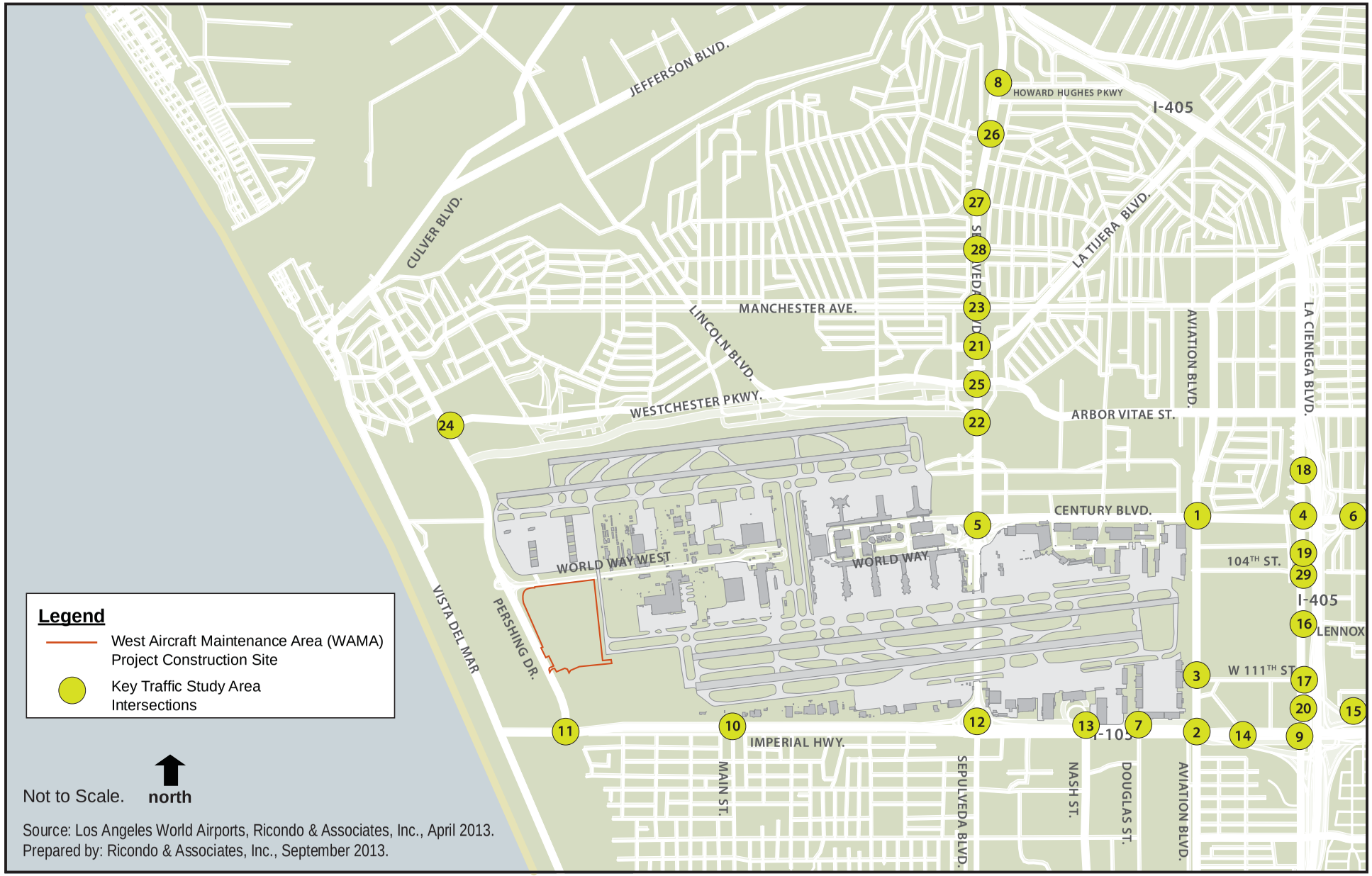
The anticipated routes utilized by construction-related vehicles were reviewed to identify the intersections likely to be used by vehicles accessing the construction employee parking/staging site associated with the proposed Project or the other concurrent construction project sites in the vicinity of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

**Table 4.7-1**

**Study Area Intersections**

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

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




| | | |
|---|---|---|
| **West Aircraft Maintenance Area Project Draft EIR** | **Construction Traffic Study Area Intersections** | Figure **4.7-2** |

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### 4.7.3.5.3 Intersection Control and Geometry

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

### 4.7.3.5.4 Project-Related Peak Hours

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

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

- **Project Construction AM Peak Hour (6:00 a.m. to 7:00 a.m.)** - The proposed Project construction AM peak hour represents the peak period for construction employees arriving at the construction employee parking lot during the morning. Based on a review of the draft construction resource schedule of hourly construction trips, and in order to avoid the peak hours identified in the LAX Master Plan commitments regulating truck delivery and employee shift hours, employees are anticipated to arrive between 6:00 a.m. and 7:00 a.m.[16]
- **Project Construction PM Peak Hour (3:30 p.m. to 4:30 p.m.)** - The proposed Project construction PM peak hour represents the peak period for construction employees leaving the construction employee parking lot during the evening. Based on a review of the draft construction resource schedule of hourly construction trips, and in order to avoid the peak hours identified in the LAX Master Plan commitments regulating truck delivery and employee shift hours, employees are anticipated to depart between 3:00 p.m. and 4:00 p.m.[17] Although this construction-related traffic activity is estimated to end 30 minutes before the start of the PM peak commute period (4:30 p.m. to 6:30 p.m.), it was determined that combining these exiting construction volumes with the background traffic volume

[16] LAWA Airport Development Group, 6.22.2012 EIR Truck Assumptions.pdf, November 2012 (vehicle schedule times).

[17] LAWA Airport Development Group, 6.22.2012 EIR Truck Assumptions.pdf, November 2012 (vehicle schedule times).

anticipated to occur between 3:30 p.m. and 4:30 p.m., the period directly adjacent to the PM commuter peak hour, would produce a more conservative estimate of activity.

### 4.7.3.6 Baseline Intersection Volumes

Baseline traffic volumes consist of the traffic volumes that represent traffic activity at the time the NOP for the proposed Project EIR was published (September 2012). Baseline volumes were estimated based on actual 2013 data collected during the AM and PM construction-related peak hours. Baseline intersection traffic volumes are provided in Appendix D (Attachment 2) of this EIR.

### 4.7.3.7 Baseline Intersection Analyses

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

**Table 4.7-2**

**Level of Service Thresholds and Definitions for Signalized Intersections**

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

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

In accordance with LADOT analysis procedures, the volume/capacity (V/C) ratio calculated using the CMA methodology is further reduced by 0.07 for those intersections included within the ATSAC system to account for the improved operation and increased efficiency from the

ATSAC system that is not captured as part of the CMA methodology. Application of the ATSAC reduction is described in Attachment D of the LADOT *Traffic Study Policies and Procedures*.[18]

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

**Table 4.7-3**

**Baseline Intersection Analysis Results**

| Intersection | Peak Hour[a] | V/C[b] | LOS[c] |
|---|---|---|---|
| 1. Aviation Blvd. & Century Blvd. | Construction AM | 0.467 | A |
| | Construction PM | 0.594 | A |
| 2. Imperial Hwy. & Aviation Blvd. | Construction AM | 0.500 | A |
| | Construction PM | 0.512 | A |
| 3. Aviation Blvd. & 111th St. | Construction AM | 0.295 | A |
| | Construction PM | 0.404 | A |
| 4. La Cienega Blvd. & Century Blvd. | Construction AM | 0.626 | B |
| | Construction PM | 0.762 | C |
| 5. Sepulveda Blvd. and Century Blvd. | Construction AM | 0.424 | A |
| | Construction PM | 0.590 | A |
| 6. Century Blvd. & I-405 N/B Ramp | Construction AM | 0.634 | B |
| | Construction PM | 0.459 | A |
| 7. Imperial Hwy. & Douglas St. | Construction AM | 0.199 | A |
| | Construction PM | 0.375 | A |
| 8. Sepulveda Blvd. & H. Hughes Pkwy. | Construction AM | 0.219 | A |
| | Construction PM | 0.419 | A |
| 9. Imperial Hwy. & La Cienega Blvd. | Construction AM | 0.191 | A |
| | Construction PM | 0.453 | A |
| 10. Imperial Hwy. & Main St. | Construction AM | 0.499 | A |
| | Construction PM | 0.439 | A |
| 11. Imperial Hwy. & Pershing Dr. | Construction AM | 0.184 | A |
| | Construction PM | 0.316 | A |
| 12. Imperial Hwy. & Sepulveda Blvd. | Construction AM | 0.496 | A |
| | Construction PM | 1.004 | F |
| 13. Imperial Hwy. & Nash St. | Construction AM | 0.362 | A |
| | Construction PM | 0.239 | A |
| 14. Imperial Hwy. & I-105 Ramp | Construction AM | 0.513 | A |
| | Construction PM | 0.471 | A |
| 15. Imperial Hwy. & I-405 NB Ramp | Construction AM | 0.211 | A |
| | Construction PM | 0.480 | A |
| 16. La Cienega Blvd. & Lennox Blvd. | Construction AM | 0.164 | A |
| | Construction PM | 0.306 | A |

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

**Table 4.7-3**

**Baseline Intersection Analysis Results**

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

[a] The hours of analysis include the construction AM peak (6:00 a.m. - 7:00 a.m.) and the construction PM peak (3:30 p.m. - 4:30 p.m.).
[b] Volume to capacity ratio.
[c] LOS range: A (excellent) to F (failure).

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

The LOS results from the TRAFFIX program, including the volume, geometry and other inputs used to produce these results are provided in Appendix D (Attachment 3) of this EIR.

## 4.7.3.8 LAWA's Coordination and Logistic Management Team

Subsequent to the approval of the LAX Master Plan, LAWA established the Coordination and Logistic Management (CALM) team. Working in cooperation with LAWA staff including Terminal Operations, Airport Police, Capital Programming & Planning Group, and Commercial Development Group, the CALM team monitors construction traffic, coordinates lane and roadway closures and analyzes traffic conditions to determine the need for additional traffic controls, lane restriping, and traffic signal modifications. An approval process for proposed construction work has been established in which contractors submit request forms describing

the work, when the work is proposed to take place, duration, coordination efforts with other projects, etc. If pedestrian or vehicular traffic will be impacted, the submittal form will include proposed traffic control plans. These requests are reviewed by staff from the CALM team and various LAWA divisions, and any concerns are addressed prior to approval. The CALM team also develops an informational campaign for construction activities, including wayfinding signage for pedestrians to locate ground transportation facilities and parking during construction, information for commercial shuttle drivers regarding lane closures and detours, and traffic alerts on LAWA's website for the public and airport employees. A real-time traffic conditions map for the LAX CTA was recently added to the LAWA website. Regular meetings occur to discuss minimizing the construction impacts of current and future projects. Coordination with outside agencies is conducted as the individual projects necessitate and would be utilized for the management of construction traffic associated with the proposed Project.

## 4.7.4 Project-Generated Traffic

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

### 4.7.4.1. Project Construction Traffic During Project Peak (August 2014)

The peak construction period for the proposed Project is anticipated to occur around August 2014. Construction employee and truck trips were estimated on an hourly basis over the typical busy day (with the exception of the peak AM and PM commute periods) during the peak construction period. Based on the resource loaded schedule developed for the proposed Project, it is estimated that 185 construction employees would access the construction site on a daily basis during the peak period of construction.[19] The construction schedule is based on a single-shift work schedule with construction employees entering the site between 6:00 a.m. to 7:00 a.m. and exiting the site between 3:00 p.m. to 4:00 p.m. Vehicle occupancy was assumed to be 1.15 employees per vehicle. According to a study published by the Southern California Association of Governments (SCAG), the average vehicle occupancy on several regional roadways in the Los Angeles region ranged from approximately 1.15 to 1.30.[20] Provided the temporary nature of construction employment and the lower likelihood of rideshare opportunities, a conservative estimate of vehicle occupancy of 1.15 employees per vehicle was assumed. By applying the assumed vehicle occupancy factor, it was projected that 161 construction employee vehicles per day during the proposed Project construction peak period would access and egress the traffic study area in support of proposed Project construction.

For purposes of the intersection analyses, all vehicle trips were converted to "passenger car equivalents" (PCEs) to account for the additional impact that large vehicles, such as trucks, would have on roadway traffic operations. As such, the number of construction-related vehicle trips was multiplied by the following PCE factors, consistent with the assumptions in the LAX Master Plan EIR:

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19 CDM Smith, WAMA_Crew_Estimates_v02_13 March 2013_8 hr.days.xls, March 2013.

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

| Vehicle Type | PCE Factor |
|---|---|
| Construction employees[21] | 1.0 |
| Construction delivery trucks | 2.5 |

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

Delivery trucks carrying construction equipment and material would enter and exit the materials staging area. Based on information provided in Chapter 2, *Project Description*, in this EIR, it is anticipated that the removal of 295,000 cubic yards of soil will be required during the peak construction period occurring over an 81-day period. Assuming trucks with a carrying capacity of 16 cubic yards are used for the proposed Project, then it is estimated that approximately 228 trucks would enter and exit the site on a daily basis during the peak month of construction. Assuming truck trips are evenly distributed over an eight hour shift (excluding the hours that coincide with the peak commuter periods), approximately 29 construction-related truck delivery round trips would enter and exit the site during the peak construction hour for the proposed Project. Using an assumed PCE factor of 2.5 per vehicle, delivery trucks would comprise a total of approximately 73 PCE's entering and exiting the site during the peak construction hour.

The estimated Project-related construction trips (in PCEs) during the proposed Project construction peak in August 2014 are summarized by hour in **Table 4.7-4**. The table includes construction employee vehicle trips and construction delivery truck trips used to haul soil from the site and to transfer goods to the construction staging area(s). As shown, during the morning, construction employees were assumed to enter the site between 6:00 a.m. and 7:00 a.m. During the afternoon, the employees were assumed to exit between 3:00 p.m. and 4:00 p.m. Using a similar conservative approach, it was assumed these trips would occur during the PM period 3:30 p.m. to 4:30 p.m. directly adjacent to the start of the PM peak commuter period. The proposed Project construction volumes used for the AM and PM construction peak hour analysis are summarized at the bottom of Table 4.7-4.

### 4.7.4.2 Proposed Project Construction Trip Distribution

The locations of the proposed Project construction site(s), construction employee parking areas, delivery staging areas, and other relevant features are depicted in **Figure 4.7-3**. As shown in Figure 4.7-3, trucks are anticipated to use the regional freeway system (I-405 and I-105), Imperial Highway, and Pershing Drive to access the materials and equipment staging area. The regional and local traffic flow distributions are also provided in Figure 4.7-3.

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

**Table 4.7-4**

**Project Peak (August 2014) – Proposed Project-Related Construction Traffic PCEs**

| Hour | | Employee [a] | | Truck [b] | | Total Construction PCEs |
|---|---|---|---|---|---|---|
| | | Trips In | Trips Out | Trips In | Trips Out | |
| 0:00 | 1:00 | | | | | |
| 1:00 | 2:00 | | | | | |
| 2:00 | 3:00 | | | | | |
| 3:00 | 4:00 | | | | | |
| 4:00 | 5:00 | | | | | |
| 5:00 | 6:00 | | | | | |
| **6:00** | **7:00** | **161** | | **73** | **73** | **307** |
| 7:00 | 8:00 | | | | | |
| 8:00 | 9:00 | | | | | |
| 9:00 | 10:00 | | | 73 | 73 | 146 |
| 10:00 | 11:00 | | | 73 | 73 | 146 |
| 11:00 | 12:00 | | | 73 | 73 | 146 |
| 12:00 | 13:00 | | | 73 | 73 | 146 |
| 13:00 | 14:00 | | | 73 | 73 | 146 |
| 14:00 | 15:00 | | | 73 | 73 | 146 |
| **15:00** | **16:00** | | **161** | **73** | **73** | **307** |
| 16:00 | 17:00 | | | | | |
| 17:00 | 18:00 | | | | | |
| 18:00 | 19:00 | | | | | |
| 19:00 | 20:00 | | | | | |
| 20:00 | 21:00 | | | | | |
| 21:00 | 22:00 | | | | | |
| 22:00 | 23:00 | | | | | |
| 23:00 | 0:00 | | | | | |
| **Total** | | **161** | **161** | **584** | **584** | **1,490** |
| **Summary of Modeled Traffic PCEs** | | | | | | |
| **Construction AM (6:00 a.m.– 7:00 a.m.)** | | **161** | | **73** | **73** | **307** |
| **Construction PM (3:30 p.m. – 4:30 p.m.)** | | | **161** | **73** | **73** | **307** |

[a] Estimate is based on 185 peak day construction employees. An occupancy factor of 1.15 employees per vehicle is included in the employee trip calculations.

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

Source: CDM Smith, WAMA_Crew_Estimates_v02_13 March 2013_8 hr. days.xls, (employee trip volumes, truck trips) March 2013; CDM Smith email, (truck trips) March 2013); LAWA Airport Development Group (ADG), 6.22.2012 EIR Truck Assumptions.pdf, (vehicle schedule times) November 2012.

For purposes of distributing traffic on the traffic study area roadway network, it was assumed that construction employee and delivery vehicle trips would originate from geographic locations in proportion to the distribution of regional population and specific street routing assumptions obtained from the LAX Master Plan EIR and the LAX 2011 Air Passenger Survey. As shown in **Table 4.7-5** and in Figure 4.7-3, it was estimated that approximately 21 percent of the construction-related traffic would access the Airport from I-405 north, 23 percent from I-405 south, 32 percent from the east (I-105), and 24 percent from local roadways. These route

characteristics represent the roadways that a construction-related vehicle would use to access the traffic study area.

**Table 4.7-5**

**Regional Population Distribution**

| Area | Population (2002) | Percent of Population | Route Percentage to Airport | | | | |
|---|---|---|---|---|---|---|---|
| | | | I-405 North | I-405 South | I-105 | Local Roads | Total [1] |
| **Traffic Study Area** | 423,185 | 3 | 0 | 0 | 0 | 3 | 3 |
| **South LA County** | 9,052,477 | 54 | 15 | 5 | 18 | 16 | 54 |
| **North LA County** | 706,077 | 4 | 2 | 0 | 2 | 0 | 4 |
| **Orange County** | 2,772,302 | 17 | 0 | 14 | 0 | 2 | 17 |
| **Riverside/San Bernardino County** | 2,961,693 | 18 | 0 | 4 | 12 | 2 | 18 |
| **Ventura County** | 771,734 | 5 | 4 | 0 | 0 | 0 | 5 |
| Total [a] | **16,687,468** | **100** | **21** | **23** | **32** | **24** | **100** |

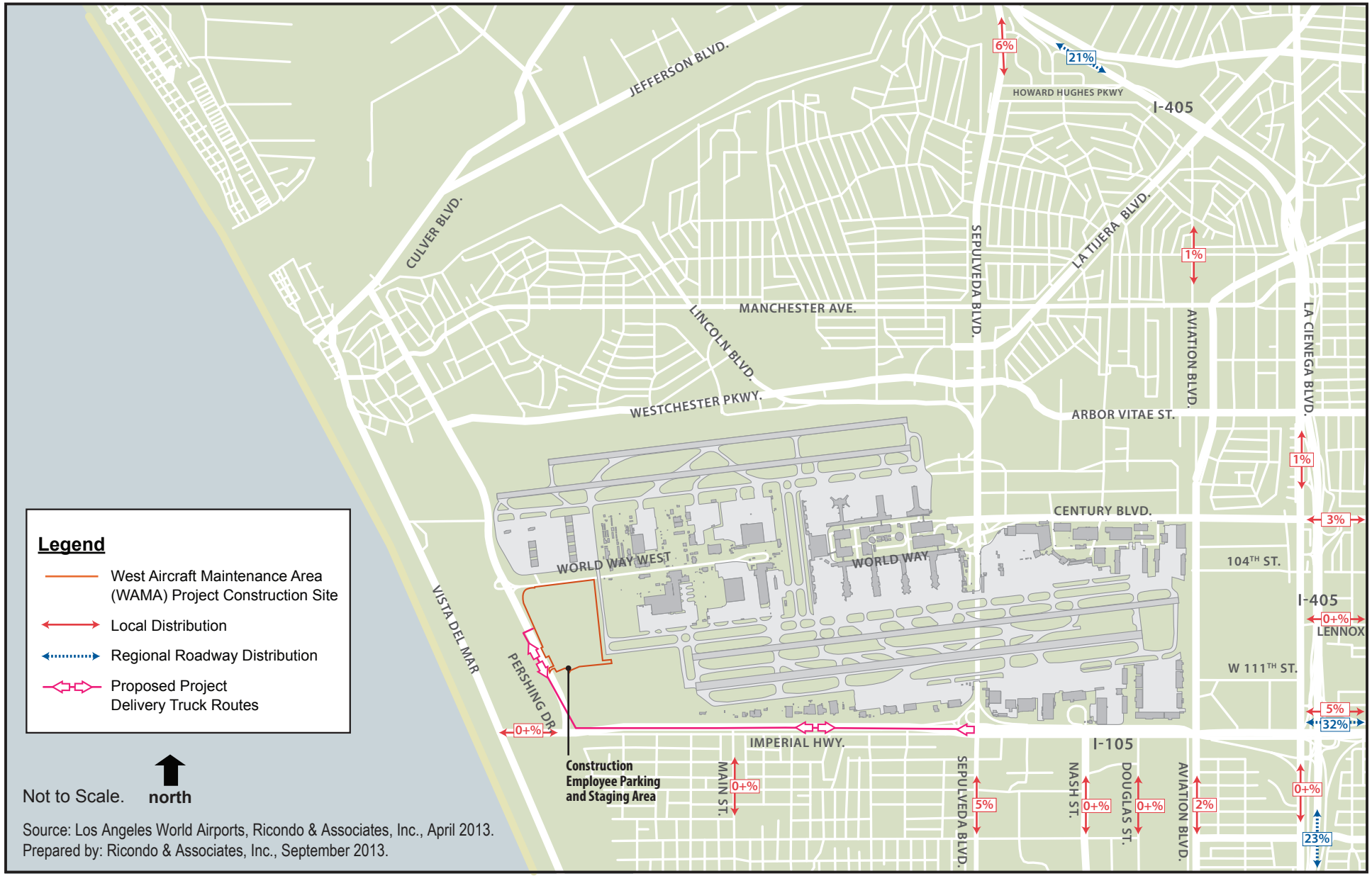
[a] Totals may not add due to rounding.

Sources: LAX Master Plan Supplement to the Draft EIR, Figure 4.3.2-3 (Existing 1996 Airport Traffic versus Non-Airport Traffic Comparison); *2001 LAX Passenger Survey Report* (Table 39), Los Angeles International Airport, April 2004, Applied Management & Planning Group; *Los Angeles International Airport 2011 Passenger Survey* (Table III-13), Los Angeles International Airport, April 2011, Unison Consulting, Inc.

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

## 4.7.5 Future Cumulative Traffic

The components of traffic for the future cumulative traffic condition are described in this section. The future cumulative traffic condition takes into consideration past, present, and reasonably foreseeable projects and includes growth in ambient background traffic and both airport and non-airport developments in the vicinity of the Airport. Known development projects in the Airport vicinity that may contribute traffic to the proposed Project traffic study area roadway system during the peak construction period for the proposed Project were also considered. These trips would result from either the construction or the operation of those development projects. The list of related projects is constantly changing as projects rotate off the list and new projects are approved and added to the list. Given that approval, construction, and operation of




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

**West Aircraft Maintenance Area Project Draft EIR**

**Proposed Project Construction Vehicle Routes and Trip Distribution**

Figure **4.7-3**

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local area development projects is a continuous process, the traffic associated with the construction and operation of many past and current local area developments are represented in the traffic volume data used as a basis for the traffic study. The development schedule and traffic characteristics of larger projects in close proximity to the traffic study area were reviewed and their effects were incorporated into the cumulative analysis.

### 4.7.5.1 Cumulative Projects

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

**Table 4.7-6** summarizes the estimated construction costs, and the assumed start and end dates of construction for the proposed Project and each of the cumulative projects that are anticipated to be under construction concurrent with the proposed Project. The estimated labor component of the total construction cost is a key element associated with estimating construction employee hours and resulting employee vehicle trips.

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

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

**Figure 4.7-4** provides estimated employee hours by month for the proposed Project and the cumulative construction projects that are anticipated to be under construction concurrent with the proposed Project construction period. The figure includes all anticipated construction projects that are expected to occur over the course of the construction period for the proposed

**Table 4.7-6**

**Construction Projects Concurrent with the Proposed Project Construction Period**

| Project No. | Concurrent Construction Project | Estimated Total Construction Cost (millions) | Start Date | End Date | Estimated Employee Hours During Projects (Total) |
|---|---|---|---|---|---|
| N/A[a] | West Aircraft Maintenance Area Project | $175 | Jan-14 | Dec-18 | 425,000 |
| 1 | RSA Improvements – South Airfield[b, f] | $106.3 | Nov-13 | May-15 | 253,000 |
| 2 | RSA Improvements – North Airfield[f] | $139.1 | Jun-14 | Jun-19 | 312,000 |
| 3 | Bradley West Project | $603.7 | Nov-13 | Dec-17 | 1,353,000 |
| 4 | North Terminals Improvements | $380 | Aug-13 | Aug-17 | 852,000 |
| 5 | South Terminals Improvements | $665 | Nov-11 | Feb-18 | 1,491,000 |
| 6 | Midfield Satellite Concourse: Phase 1[b] | $666.5 | Oct-16 | Jul-20 | 1,494,000 |
| 7 | Central Utility Plant Replacement Project (CUP – RP) – Remaining Work | $120.6 | Sep-13 | Dec-14 | 216,000 |
| 8 | Miscellaneous Projects/Improvements | $945.5 | Jan-14 | Jul-20 | 605,000 |
| 9 | LAX Northside Development [c, f] | N/A[1] | N/A[1] | N/A[1] | N/A[1] |
| 10 | LAX SPAS Development[d, f] | $16,391 | Jun-15 | Jun-25 | 15,907,000 |
| 11 | Metro Crenshaw / LAX Transit Corridor and Station[b,e, f] | $404 | Dec-15 | Dec-17 | 453,000 |

[a] N/A = Not Applicable

[b] Subsequent to the completion of this traffic study, construction periods were adjusted for the following projects: RSA Improvements – South Airfield (start date February 2014, end date February 2015); Midfield Satellite Concourse: Phase 1 (start date July 2014, end date July 2019); Metro Crenshaw/LAX Transit Corridor and Station (end date April 2019). Based on these revised project characteristics, it is estimated that the total number of construction vehicles generated by the concurrent construction projects in the peak cumulative month will be lower than what has been analyzed for this traffic analysis; therefore, the traffic analysis documented in this report is considered to be conservative.

[c] Construction traffic estimates provided by Gibson Transportation Consulting, Inc., who has prepared detailed traffic analysis for the proposed LAX Northside Plan Update.

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

[e] Estimated budget and schedule based on information obtained from Crenshaw/LAX Transit Corridor Project EIR and project website.

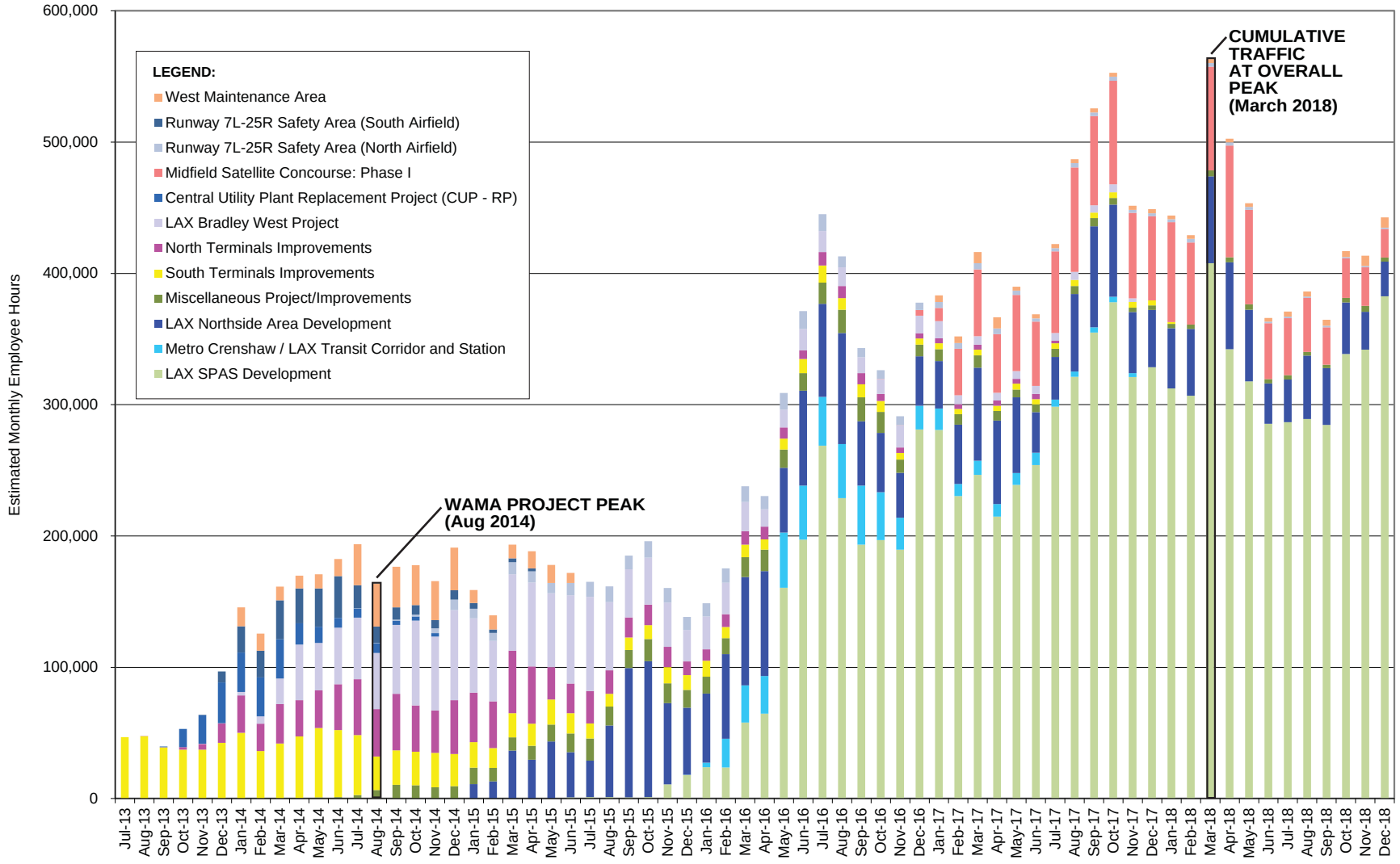
[f] This project is subject to additional environmental review pursuant to the National Environmental Policy Act.

Sources: CDM Smith (list and characteristics of proposed Project and concurrent projects); Email from CDM Smith (Anthony Skidmore) on August 19, 2013 (project schedules and cost for projects 1 - 8, & 10); Crenshaw/LAX Transit Corridor Project FEIR (Metro Crenshaw/LAX Transit Corridor cost), August 2011; www.metro.net/projects/crenshaw_corridor.com (Metro Crenshaw/LAX Transit Corridor schedule), accessed November 12, 2012; Ricondo & Associates, Inc. (estimated employee hours for all other projects), August 2013.

Project. As shown in the figure, the peak period for proposed Project construction is estimated to occur in August 2014, while the overall cumulative peak during construction of the proposed Project is estimated to occur in March 2018.

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

Estimated AM and PM construction peak hour vehicle trips associated with the proposed Project and the five concurrent construction projects during March 2018 (cumulative peak period) are




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

| | | |
|---|---|---|
| **West Aircraft Maintenance Area Project Draft EIR** | **Estimated Employee Hours for Proposed Project and Other Concurrent Construction Projects** | Figure **4.7-4** |

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provided in **Table 4.7-7**. Traffic volumes associated with the proposed Project during the peak period for cumulative traffic were calculated to be proportional to the change in monthly employee hours as compared with the overall proposed Project peak month from August 2014

**Table 4.7-7**

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

| | Construction Trips in Passenger Car Equivalents (PCEs) | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | Construction AM Peak Hour (6:00 a.m. - 7:00 a.m.) | | | | Construction PM Peak Hour (3:00 p.m. - 4:00 p.m.) | | | |
| | Employees[a] | | Trucks | | Employees[a] | | Trucks | |
| Project | In | Out | In | Out | In | Out | In | Out |
| Proposed Project (March 2018)[a] | 15 | 0 | 7 | 7 | 0 | 15 | 7 | 7 |
| Other Concurrent Projects in March 2018 [b] | | | | | | | | |
| 2. RSA Improvements – North Airfield | 15 | 0 | 3 | 3 | 0 | 15 | 3 | 3 |
| 6. Midfield Satellite Concourse: Phase 1 | 392 | 0 | 66 | 66 | 0 | 392 | 66 | 66 |
| 8. Miscellaneous Project/Improvements | 22 | 0 | 4 | 4 | 0 | 22 | 4 | 4 |
| 9. LAX Northside Area Development[c] | 320 | 0 | 0 | 0 | 0 | 320 | 0 | 0 |
| 10. LAX SPAS Development | 2,018 | 0 | 337 | 337 | 0 | 2,018 | 337 | 337 |
| Total for Other Concurrent Projects in March 2018 | 2,767 | 0 | 410 | 410 | 0 | 2,767 | 410 | 410 |

[a] The proposed Project trips shown here are based on 17 peak day construction employees generating 15 daily employee vehicles.
[b] The ratio of peak hour trips over total monthly employee construction hours for other concurrent projects was assumed to be equal to that calculated for the proposed Project, unless other project-specific data were available.
[c] Peak hour trips provided by Gibson Transportation Consulting

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

as depicted on the chart. As shown on the table, it is anticipated that a total of 15 employee vehicles would access the construction employee parking lot during the peak period for cumulative traffic.[22] Traffic volumes associated with each concurrent construction project were estimated by calculating the ratio of vehicle trips to employee hours for the Bradley West Project and multiplying this ratio by the estimated total number of employee hours for each project during the cumulative peak month in March 2018, except for those projects where vehicle trip data and/or trip ratios were available specifically from traffic studies prepared for those projects. The percentage of vehicle trips arriving at and departing the traffic study area by hour of the day, for each of the cumulative projects, were assumed to coincide with the peak construction periods for the proposed Project. Furthermore, as a conservative assumption, it is assumed that all construction projects would use a single work shift such that all construction employees arrive at the site in the morning and depart the site in the afternoon.

[22] The 15 vehicles is determined by multiplying the peak period traffic (161 vehicles) by the ratio of proposed Project employee hours at the overall cumulative peak month in March 2018 (2,856 employee hours) to proposed Project employee hours at the proposed Project peak month (32,544 employee hours in August 2014). [i.e., 2,856/32,544 x 161 = ~15 vehicles]

For purposes of distributing traffic within the traffic study area, it was necessary to identify the employee parking and staging locations for the concurrent projects. The location of the construction employee parking and material staging area as well as general access and circulation patterns of construction-related vehicle activity for the proposed Project are depicted in **Figure 4.7-5**. The anticipated contractor employee parking and staging areas for the five concurrent construction projects are also depicted in Figure 4.7-5, as well as other available staging location in the area. The exhibit depicts parking and staging areas associated with the projects that were anticipated to be under construction concurrent with the peak cumulative period analyzed for this study. Construction staging areas are located within the LAX Northside planning area, which is planned for future development independent from SPAS. Depending on the nature and timing of such future development, use of the construction staging areas for SPAS-related construction, staging may be limited. The regional and local area distribution patterns are anticipated to be generally the same as for the proposed Project, with adjustments as necessary for access to the individual sites.

### 4.7.5.2 Planned Transportation Network Improvements

The Bradley West Project EIR identifies several intersection improvements throughout the study area to mitigate potential future impacts[23]. The following study area intersections that were anticipated to be significantly impacted by the Bradley West Project would be improved when traffic activity levels reach certain activity thresholds at which an impact would be triggered.

- Imperial Highway and Sepulveda Boulevard
- La Cienega Boulevard and I-405 Ramps N/O Century Boulevard
- La Tijera Boulevard and Sepulveda Boulevard
- Sepulveda Boulevard and 76th/77th Street

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

## 4.7.6 Thresholds of Significance

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

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

| Activity Name[1] | Construction Employee Parking[2] | Delivery Staging[2] |
|---|---|---|
| RSA Improvements – North Airfield | A, F, L | A, F, L |
| Midfield Satellite Concourse: Phase 1 | N | A, N |
| Miscellaneous Projects/Improvements | A | C |
| LAX Northside Area Development | A, C, M | A, C, M |
| LAX SPAS Development | A, C, G, J, K, L, M | A, C, G, J, K, L, M |

1/ Represents all construction projects anticipated to be underway concurrent with the cumulative peak month of construction during the West Aircraft Maintenance Area Project construction period as depicted in Figure 4.7-5.
2/ Locations provided by CDM Smith.


**Legend**

- Proposed Project Site
- Local Distribution
- Regional Roadway Distribution
- WAMA Construction Parking and Staging Area
- Available Construction Parking and/or Staging Area

Not to Scale. north

Source: Los Angeles World Airports, CDM Smith, Ricondo & Associates, Inc., August 2013.
Prepared by: Ricondo & Associates, Inc., September 2013.

**West Aircraft Maintenance Area Project Draft EIR**

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

Figure **4.7-5**

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### 4.7.6.1 City of El Segundo Impact Criteria

In the City of El Segundo, an impact is considered significant if one of the following thresholds is exceeded:[24]

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

### 4.7.6.2 City of Inglewood Impact Criteria

In the City of Inglewood, an impact is considered significant if one of the following thresholds is exceeded:[25]

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

### 4.7.6.3 City of Los Angeles Impact Criteria

In accordance with LADOT criteria defined in its *Traffic Study Policy and Procedures*,[26] an impact is considered to be significant if one of the following thresholds is exceeded:

- The LOS is C, its final V/C ratio is 0.701 to 0.80, and the project-related increase in V/C is 0.040 or greater, or
- The LOS is D, its final V/C ratio is 0.801 to 0.90, and the project-related increase in V/C is 0.020 or greater, or
- The LOS is E or F, its final V/C ratio is 0.901 or greater, and the project-related increase in V/C is 0.010 or greater.

The "final V/C ratio" as defined by LADOT consists of the future V/C ratio at an intersection that includes volume from the project, baseline, ambient background growth,[27] and other related projects, but without proposed intersection traffic mitigation as potentially required by the project.

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

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

- **Project Impacts--**The direct impacts of the proposed Project are determined by calculating the difference in LOS for the Baseline Plus Project LOS and the Baseline LOS. This comparison is required to isolate the direct impacts of the proposed Project. The difference

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[24] Samaras, Paul, Principal Planner, City of El Segundo, Personal Communication, April 21, 2009.

[25] Mai, Alan, Associate Traffic Engineer, City of Inglewood, Personal Communication, January 6, 2009.

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

[27] This definition applies to the cumulative analysis and not the project-specific analysis where ambient background growth and trips from other concurrent construction projects are not included in the calculation of the "final v/c ratio." The "final v/c ratio" for the project-specific analysis is calculated using future project volumes associated with construction of the project added directly to the Baseline volumes.

in LOS is compared to the thresholds identified earlier in this section to determine if the proposed Project would result in a significant impact.

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

## 4.7.7 Applicable LAX Master Plan Commitments and Mitigation Measures

The following transportation-related commitments identified in the LAX Master Plan MMRP would be applied to the proposed Project and thus are included as part of the proposed Project for purposes of environmental review:

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

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

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

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

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

***C-2. Construction Personnel Airport Orientation.***

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

***ST-9. Construction Deliveries.***

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

***ST-12. Designated Truck Delivery Hours.***

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

  [*Note: This measure provides guidelines for controlling the arrival and departure times of construction-related truck traffic during peak commute periods, and served as input for developing an estimated schedule of the proposed Project construction delivery activity*.]

***ST-14. Construction Employee Shift Hours.***

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

  ***[Note: This measure provides guidelines for controlling the arrival and departure times of construction employees, and served as direct input for determining the employee traffic activity associated with the proposed Project. Traffic analysis was limited to weekday traffic conditions to provide a conservative estimate of potential impacts given that weekday traffic activity is typically significantly higher than during the weekend traffic.]***

***ST-16. Designated Haul Routes.***

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

***ST-17. Maintenance of Haul Routes.***

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

***ST-18. Construction Traffic Management Plan.***

- A complete construction traffic plan will be developed to designate detour and/or haul routes, variable message and other sign locations, communication methods with airport

passengers, construction deliveries, construction employee shift hours, construction employee parking locations and other relevant factors.

***ST-22. Designated Truck Routes.***

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

## 4.7.8 Impact Analysis

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

This comparison provides the basis for determining Project-related impacts. The comparison is based on Project-specific traffic generation during the peak construction period (August 2014) added to baseline traffic volumes. The resulting levels of service were compared to the levels of service associated with the baseline condition. A significant impact would be realized if/when the thresholds of significance are met or exceeded. Impact comparisons between the proposed Project's peak traffic added to the baseline compared to the baseline alone is depicted in **Table 4.7-8**. As shown in Table 4.7-8, it is anticipated that no significant impacts would occur during August 2014 under the proposed Project.

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

This comparison was conducted in two steps, which is consistent with *CEQA Guidelines* Section 15130. An initial comparison was conducted by comparing the LOS associated with peak future cumulative traffic volumes (including the proposed Project, other cumulative projects and ambient growth in background traffic), to the baseline levels of service from 2013. This initial comparison of future cumulative conditions to baseline 2013 conditions was conducted to determine if there would be a significant cumulative impact. If a significant cumulative impact was determined, then an additional comparison was conducted to determine if the proposed Project's share of the significant impact would be considered a cumulatively considerable contribution to the significant cumulative impact. This second comparison was conducted by comparing future cumulative conditions both with and without the proposed Project. Cumulatively considerable contributions are realized when the thresholds of significance defined above are met or exceeded. The impact comparison for this condition is depicted in **Table 4.7-9**.

**Table 4.7-8**

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

| | Intersection | Peak Hour[a] | Baseline | | Baseline Plus Project | | Change in V/C | Significant Impact |
|---|---|---|---|---|---|---|---|---|
| | | | V/C[b] | LOS[c] | V/C[b] | LOS[c] | | |
| 1. | Aviation Boulevard and Century Boulevard | Construction AM | 0.467 | A | 0.469 | A | 0.002 | -- |
| | | Construction PM | 0.594 | A | 0.595 | A | 0.001 | -- |
| 2. | Imperial Highway and Aviation Boulevard | Construction AM | 0.500 | A | 0.500 | A | 0.000 | -- |
| | | Construction PM | 0.512 | A | 0.515 | A | 0.003 | -- |
| 3. | Aviation Boulevard and 111th Street | Construction AM | 0.295 | A | 0.295 | A | 0.000 | -- |
| | | Construction PM | 0.404 | A | 0.404 | A | 0.000 | -- |
| 4. | La Cienega Boulevard and Century Boulevard | Construction AM | 0.626 | B | 0.627 | B | 0.001 | -- |
| | | Construction PM | 0.762 | C | 0.762 | C | 0.000 | -- |
| 5. | Sepulveda Blvd. and Century Blvd. | Construction AM | 0.424 | A | 0.426 | A | 0.002 | -- |
| | | Construction PM | 0.590 | A | 0.590 | A | 0.000 | -- |
| 6. | Century Boulevard and I-405 Northbound Ramp | Construction AM | 0.634 | B | 0.635 | B | 0.001 | -- |
| | | Construction PM | 0.459 | A | 0.460 | A | 0.001 | -- |
| 7. | Imperial Highway and Douglas Street | Construction AM | 0.199 | A | 0.199 | A | 0.000 | -- |
| | | Construction PM | 0.375 | A | 0.378 | A | 0.003 | -- |
| 8. | Sepulveda Boulevard and Howard Hughes Pkwy. | Construction AM | 0.219 | A | 0.227 | A | 0.008 | -- |
| | | Construction PM | 0.419 | A | 0.421 | A | 0.002 | -- |
| 9. | Imperial Highway and La Cienega Boulevard | Construction AM | 0.191 | A | 0.192 | A | 0.001 | -- |
| | | Construction PM | 0.453 | A | 0.455 | A | 0.002 | -- |
| 10. | Imperial Highway and Main Street | Construction AM | 0.499 | A | 0.590 | A | 0.091 | -- |
| | | Construction PM | 0.439 | A | 0.502 | A | 0.063 | -- |
| 11. | Imperial Highway and Pershing Drive | Construction AM | 0.184 | A | 0.336 | A | 0.152 | -- |
| | | Construction PM | 0.316 | A | 0.385 | A | 0.069 | -- |
| 12. | Imperial Highway and Sepulveda Boulevard | Construction AM | 0.496 | A | 0.496 | A | 0.000 | -- |
| | | Construction PM | 1.004 | F | 1.006 | F | 0.002 | -- |
| 13. | Imperial Highway and Nash Street | Construction AM | 0.362 | A | 0.362 | A | 0.000 | -- |
| | | Construction PM | 0.239 | A | 0.242 | A | 0.003 | -- |
| 14. | Imperial Highway and I-105 Ramp | Construction AM | 0.513 | A | 0.516 | A | 0.003 | -- |
| | | Construction PM | 0.471 | A | 0.472 | A | 0.001 | -- |
| 15. | Imperial Highway and I-405 Northbound Ramp | Construction AM | 0.211 | A | 0.213 | A | 0.002 | -- |
| | | Construction PM | 0.480 | A | 0.482 | A | 0.002 | -- |
| 16. | La Cienega Boulevard and Lennox Boulevard | Construction AM | 0.164 | A | 0.164 | A | 0.000 | -- |
| | | Construction PM | 0.306 | A | 0.306 | A | 0.000 | -- |
| 17. | La Cienega Boulevard and 111th Street | Construction AM | 0.128 | A | 0.128 | A | 0.000 | -- |
| | | Construction PM | 0.311 | A | 0.311 | A | 0.000 | -- |

**Table 4.7-8**

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

| | Intersection | Peak Hour[a] | Baseline V/C[b] | Baseline LOS[c] | Baseline Plus Project V/C[b] | Baseline Plus Project LOS[c] | Change in V/C | Significant Impact |
|---|---|---|---|---|---|---|---|---|
| 18. | La Cienega Blvd. & I-405 Southbound Ramps North of Century | Construction AM | 0.387 | A | 0.387 | A | 0.000 | -- |
| | | Construction PM | 0.410 | A | 0.410 | A | 0.000 | -- |
| 19. | La Cienega Blvd. & I-405 Southbound Ramps South of Century | Construction AM | 0.135 | A | 0.135 | A | 0.000 | -- |
| | | Construction PM | 0.284 | A | 0.284 | A | 0.000 | -- |
| 20. | La Cienega Blvd. & I-405 Southbound Ramps North of Imperial | Construction AM | 0.136 | A | 0.136 | A | 0.000 | -- |
| | | Construction PM | 0.218 | A | 0.218 | A | 0.000 | -- |
| 21. | Sepulveda Boulevard and La Tijera Boulevard | Construction AM | 0.337 | A | 0.337 | A | 0.000 | -- |
| | | Construction PM | 0.613 | B | 0.614 | B | 0.001 | -- |
| 22. | Sepulveda Boulevard and Lincoln Boulevard | Construction AM | 0.457 | A | 0.457 | A | 0.000 | -- |
| | | Construction PM | 0.750 | C | 0.752 | C | 0.002 | -- |
| 23. | Sepulveda Boulevard and Manchester Avenue | Construction AM | 0.395 | A | 0.395 | A | 0.000 | -- |
| | | Construction PM | 0.711 | C | 0.721 | C | 0.010 | -- |
| 24. | Westchester Parkway and Pershing Drive | Construction AM | 0.151 | A | 0.167 | A | 0.016 | -- |
| | | Construction PM | 0.213 | A | 0.250 | A | 0.037 | -- |
| 25. | Sepulveda Boulevard and Westchester Parkway | Construction AM | 0.309 | A | 0.309 | A | 0.000 | -- |
| | | Construction PM | 0.649 | B | 0.649 | B | 0.000 | -- |
| 26. | Sepulveda Boulevard and 76th/77th Street | Construction AM | 0.337 | A | 0.337 | A | 0.000 | -- |
| | | Construction PM | 0.440 | A | 0.440 | A | 0.000 | -- |
| 27. | Sepulveda Boulevard and 79th/80th Street | Construction AM | 0.253 | A | 0.253 | A | 0.000 | -- |
| | | Construction PM | 0.513 | A | 0.513 | A | 0.000 | -- |
| 28. | Sepulveda Boulevard and 83rd Street | Construction AM | 0.211 | A | 0.211 | A | 0.000 | -- |
| | | Construction PM | 0.458 | A | 0.458 | A | 0.000 | -- |
| 29. | La Cienega Boulevard and 104th Street | Construction AM | 0.111 | A | 0.112 | A | 0.001 | -- |
| | | Construction PM | 0.276 | A | 0.276 | A | 0.000 | -- |

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

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

**Table 4.7-9**

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

| | | | Baseline [A] | | Cumulative Peak (March 2018) Without Project [B] | | With Project[a] [C] | | Cumulative Impact Determination [C]-[A] | | Cumulative Considerable Determination/Significant Project Impact [C]-[B] | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Intersection | Peak Hour[a] | V/C[b] | LOS[c] | V/C[b] | LOS[c] | V/C[b] | LOS[c] | Change in V/C | Cumulative Impact? | Change in V/C | Cumulatively Considerable Contribution? |
| 1. | Aviation Boulevard and Century Boulevard | Construction AM | 0.467 | A | 0.633 | B | 0.633 | B | 0.166 | -- | 0.000 | -- |
| | | Construction PM | 0.594 | A | 0.817 | D | 0.817 | D | 0.223 | Yes | 0.000 | -- |
| 2. | Imperial Highway and Aviation Boulevard | Construction AM | 0.500 | A | 0.672 | B | 0.672 | B | 0.172 | -- | 0.000 | -- |
| | | Construction PM | 0.512 | A | 0.701 | C | 0.701 | C | 0.189 | Yes | 0.000 | -- |
| 3. | Aviation Boulevard and 111th Street | Construction AM | 0.295 | A | 0.396 | A | 0.396 | A | 0.101 | -- | 0.000 | -- |
| | | Construction PM | 0.404 | A | 0.511 | A | 0.511 | A | 0.107 | -- | 0.000 | -- |
| 4. | La Cienega Boulevard and Century Boulevard | Construction AM | 0.626 | B | 0.794 | C | 0.794 | C | 0.168 | Yes | 0.000 | -- |
| | | Construction PM | 0.762 | C | 1.193 | F | 1.193 | F | 0.431 | Yes | 0.000 | -- |
| 5. | Sepulveda Blvd. and Century Blvd. | Construction AM | 0.424 | A | 0.677 | B | 0.677 | B | 0.253 | -- | 0.000 | -- |
| | | Construction PM | 0.590 | A | 0.785 | C | 0.785 | C | 0.195 | Yes | 0.000 | -- |
| 6. | Century Boulevard and I-405 Northbound Ramp | Construction AM | 0.634 | B | 0.792 | C | 0.792 | C | 0.158 | Yes | 0.000 | -- |
| | | Construction PM | 0.459 | A | 0.563 | A | 0.563 | A | 0.104 | -- | 0.000 | -- |
| 7. | Imperial Highway and Douglas Street | Construction AM | 0.199 | A | 0.234 | A | 0.234 | A | 0.035 | -- | 0.000 | -- |
| | | Construction PM | 0.375 | A | 0.500 | A | 0.500 | A | 0.125 | -- | 0.000 | -- |
| 8. | Sepulveda Boulevard and Howard Hughes Parkway | Construction AM | 0.219 | A | 0.371 | A | 0.372 | A | 0.153 | -- | 0.001 | -- |
| | | Construction PM | 0.419 | A | 0.498 | A | 0.498 | A | 0.079 | -- | 0.000 | -- |
| 9. | Imperial Highway and La Cienega Boulevard | Construction AM | 0.191 | A | 0.239 | A | 0.239 | A | 0.048 | -- | 0.000 | -- |
| | | Construction PM | 0.453 | A | 0.542 | A | 0.542 | A | 0.089 | -- | 0.000 | -- |
| 10. | Imperial Highway and Main Street | Construction AM | 0.499 | A | 0.887 | D | 0.896 | D | 0.397 | Yes | 0.009 | -- |
| | | Construction PM | 0.439 | A | 0.764 | C | 0.770 | C | 0.331 | Yes | 0.006 | -- |
| 11. | Imperial Highway and Pershing Drive | Construction AM | 0.184 | A | 0.607 | B | 0.614 | B | 0.430 | -- | 0.007 | -- |
| | | Construction PM | 0.316 | A | 0.657 | B | 0.663 | B | 0.347 | -- | 0.006 | -- |
| 12. | Imperial Highway and Sepulveda Boulevard | Construction AM | 0.496 | A | 0.693 | B | 0.693 | B | 0.197 | -- | 0.000 | -- |
| | | Construction PM | 1.004 | F | 1.215 | F | 1.215 | F | 0.211 | Yes | 0.000 | -- |
| 13. | Imperial Highway and Nash Street | Construction AM | 0.362 | A | 0.547 | A | 0.548 | A | 0.186 | -- | 0.001 | -- |
| | | Construction PM | 0.239 | A | 0.348 | A | 0.348 | A | 0.109 | -- | 0.000 | -- |
| 14. | Imperial Highway and I-105 Ramp | Construction AM | 0.513 | A | 0.708 | C | 0.708 | C | 0.195 | Yes | 0.000 | -- |
| | | Construction PM | 0.471 | A | 0.600 | A | 0.600 | A | 0.129 | -- | 0.000 | -- |

**Table 4.7-9**

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

| | | | | | Cumulative Peak (March 2018) | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Baseline [A] | | Without Project [B] | | With Project[a] [C] | | Cumulative Impact Determination [C]-[A] | | Cumulative Considerable Determination/Significant Project Impact [C]-[B] | |
| | Intersection | Peak Hour[a] | V/C[b] | LOS[c] | V/C[b] | LOS[c] | V/C[b] | LOS[c] | Change in V/C | Cumulative Impact? | Change in V/C | Cumulatively Considerable Contribution? |
| 15. | Imperial Highway and I-405 Northbound Ramp | Construction AM | 0.211 | A | 0.265 | A | 0.266 | A | 0.055 | -- | 0.001 | -- |
| | | Construction PM | 0.480 | A | 0.562 | A | 0.562 | A | 0.082 | -- | 0.000 | -- |
| 16. | La Cienega Boulevard and Lennox Boulevard | Construction AM | 0.164 | A | 0.207 | A | 0.207 | A | 0.043 | -- | 0.000 | -- |
| | | Construction PM | 0.306 | A | 0.347 | A | 0.347 | A | 0.041 | -- | 0.000 | -- |
| 17. | La Cienega Boulevard and 111th Street | Construction AM | 0.128 | A | 0.148 | A | 0.148 | A | 0.020 | -- | 0.000 | -- |
| | | Construction PM | 0.311 | A | 0.375 | A | 0.375 | A | 0.064 | -- | 0.000 | -- |
| 18. | La Cienega Blvd. & I-405 Southbound Ramps North of Century | Construction AM | 0.387 | A | 0.441 | A | 0.441 | A | 0.054 | -- | 0.000 | -- |
| | | Construction PM | 0.410 | A | 0.467 | A | 0.467 | A | 0.057 | -- | 0.000 | -- |
| 19. | La Cienega Blvd. & I-405 Southbound Ramps South of Century | Construction AM | 0.135 | A | 0.195 | A | 0.195 | A | 0.060 | -- | 0.000 | -- |
| | | Construction PM | 0.284 | A | 0.467 | A | 0.467 | A | 0.183 | -- | 0.000 | -- |
| 20. | La Cienega Blvd. & I-405 Southbound Ramps North of Imperial | Construction AM | 0.136 | A | 0.175 | A | 0.175 | A | 0.039 | -- | 0.000 | -- |
| | | Construction PM | 0.218 | A | 0.313 | A | 0.313 | A | 0.095 | -- | 0.000 | -- |
| 21. | Sepulveda Boulevard and La Tijera Boulevard | Construction AM | 0.337 | A | 0.551 | A | 0.552 | A | 0.215 | -- | 0.001 | -- |
| | | Construction PM | 0.613 | B | 1.271 | F | 1.272 | F | 0.659 | Yes | 0.001 | -- |
| 22. | Sepulveda Boulevard and Lincoln Boulevard | Construction AM | 0.457 | A | 0.668 | B | 0.668 | B | 0.211 | -- | 0.000 | -- |
| | | Construction PM | 0.750 | C | 1.054 | F | 1.055 | F | 0.305 | Yes | 0.001 | -- |
| 23. | Sepulveda Boulevard and Manchester Avenue | Construction AM | 0.395 | A | 0.556 | A | 0.557 | A | 0.162 | -- | 0.001 | -- |
| | | Construction PM | 0.711 | C | 0.983 | E | 0.984 | E | 0.273 | Yes | 0.001 | -- |
| 24. | Westchester Parkway and Pershing Drive | Construction AM | 0.151 | A | 0.593 | A | 0.595 | A | 0.444 | -- | 0.002 | -- |
| | | Construction PM | 0.213 | A | 0.592 | A | 0.596 | A | 0.383 | -- | 0.004 | -- |
| 25. | Sepulveda Boulevard and Westchester Parkway | Construction AM | 0.309 | A | 1.446 | F | 1.449 | F | 1.140 | Yes | 0.003 | -- |
| | | Construction PM | 0.649 | B | 1.264 | F | 1.267 | F | 0.618 | Yes | 0.003 | -- |
| 26. | Sepulveda Boulevard and 76th/77th Street | Construction AM | 0.337 | A | 0.423 | A | 0.423 | A | 0.086 | -- | 0.000 | -- |
| | | Construction PM | 0.440 | A | 0.649 | B | 0.650 | B | 0.210 | -- | 0.001 | -- |
| 27. | Sepulveda Boulevard and 79th/80th Street | Construction AM | 0.253 | A | 0.362 | A | 0.362 | A | 0.109 | -- | 0.000 | -- |
| | | Construction PM | 0.513 | A | 0.590 | A | 0.591 | A | 0.078 | -- | 0.001 | -- |

**Table 4.7-9**

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

| | | | Cumulative Peak (March 2018) | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Baseline [A] | | Without Project [B] | | With Project[a] [C] | | Cumulative Impact Determination [C]-[A] | | Cumulative Considerable Determination/Significant Project Impact [C]-[B] | |
| | Intersection | Peak Hour[a] | V/C[b] | LOS[c] | V/C[b] | LOS[c] | V/C[b] | LOS[c] | Change in V/C | Cumulative Impact? | Change in V/C | Cumulatively Considerable Contribution? |
| 28. | Sepulveda Boulevard and 83rd Street | Construction AM | 0.211 | A | 0.322 | A | 0.323 | A | 0.112 | -- | 0.001 | -- |
| | | Construction PM | 0.458 | A | 0.567 | A | 0.568 | A | 0.110 | -- | 0.001 | -- |
| 29. | La Cienega Boulevard and 104th Street | Construction AM | 0.111 | A | 0.131 | A | 0.131 | A | 0.020 | -- | 0.000 | -- |
| | | Construction PM | 0.276 | A | 0.337 | A | 0.337 | A | 0.061 | -- | 0.000 | -- |

[a] The hours of analysis include the construction AM peak (6:00 AM - 7:00 AM) and the construction PM peak (3:30 PM - 4:30 PM).
[b] Volume to capacity ratio. Includes an LADOT ATSAC benefit applied at each intersection with the exception of intersections #39 and #75, which are not a part of the LADOT system
[c] Level of Service range: A (excellent) to F (failure).
[d] -- Indicates "No Impact"

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

As shown in the table, there would be several cumulative impacts when comparing the peak cumulative traffic volumes with the proposed Project to the baseline; however, the proposed Project would not result in a cumulatively considerable contribution to the significant cumulative impact.

## 4.7.9 Mitigation Measures

Section 4.7.7 above, includes LAX Master Plan commitments as a project design feature under the proposed Project. As described above in the impact discussions in Section 4.7.8, no significant construction-related traffic impacts would occur under the Baseline Plus Project condition, or Cumulative Plus Project condition for the proposed Project. Therefore, no Project-specific mitigation measures are required.

## 4.7.10 Level of Significance After Mitigation

Not applicable. Impacts are less than significant, as indicated above; therefore, no additional mitigation measures are required.