
5. ALTERNATIVES

5.1 Introduction

Section 15126.6 of the State CEQA Guidelines requires that an EIR include a discussion of a reasonable range of project alternatives that would “feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project, and evaluate the comparative merits of the alternatives.” Within that context, this chapter discusses alternatives to the proposed project.

The following sections discuss the significant impacts of the proposed project as identified in Chapter 4, *Environmental Impact Analysis*, the objectives of the proposed project, alternatives considered but rejected, and alternatives carried forward for further consideration in this EIR, and environmental impacts of such alternatives, including discussion as to whether such alternatives would avoid or substantially lessen any of the significant environmental impacts associated with the proposed project. Also included in this chapter is identification of the environmentally superior alternative.

5.2 Significant Impacts of the Project

The alternatives in this chapter have been selected to evaluate means for avoiding or substantially lessening the significant impacts of the proposed project identified in Chapter 4, *Environmental Impact Analysis*, with a focus on impacts that would be significant and unavoidable. As summarized in Chapter 1, impacts related to air quality and cultural (historic) resources would be significant and unavoidable. As described in Section 4.1, *Air Quality and Human Health Risk*, construction of the proposed project would result in a significant temporary impact to air quality. Specifically, construction of the proposed project would result in a net increase in temporary regional emissions of nitrogen oxides (NO_x), as well as temporary localized construction impacts for NO_x, particulate matter with an aerodynamic diameter less than or equal to 10 micrometers (PM₁₀), and fine particulate matter, or particulate matter with an aerodynamic diameter less than or equal to 2.5 micrometers (PM_{2.5}). With the exception of temporary localized construction impacts for NO_x, which would be less than significant after mitigation, these temporary emissions would result in significant and unavoidable air quality impacts after implementation of mitigation measures (identified in Section 4.1.1.7), as well as cumulatively considerable impacts; no other feasible mitigation measures were identified. As described in Section 4.2, *Cultural Resources*, the proposed project would result in the demolition of two intact, surviving Intermediate Terminal Facility buildings at 6000–6016 and 6020–6024 Avion Drive (on the project site), which together represent a single historical resource. This historical resource is individually eligible for listing in the California Register of Historical Resources and for designation as a Los Angeles Historic-Cultural Monument (LAHCM). The demolition of the two intact, surviving Intermediate Terminal Facility buildings would be a significant and unavoidable impact after implementation of mitigation measures (identified in Section 4.2.7) and no other feasible mitigation measures were identified.

5.3 Project Objectives

As identified in the State CEQA Guidelines, the achievement of project objectives was considered in determining potentially feasible alternatives that would avoid or substantially lessen any significant effects of the proposed project.

The objectives of the proposed project are to:

- Consolidate/relocate United Airlines' (UAL's) existing aircraft and ground support equipment (GSE) maintenance facilities at Los Angeles International Airport (LAX) in a single location to provide for more efficient and effective maintenance of UAL aircraft and equipment at the airport that eliminates duplicate facilities;
- Locate UAL's aircraft and GSE maintenance facilities closer to UAL's gates to increase efficiency by reducing the distance between the gates and maintenance area, consistent with the mission of LAX Airfield Operations of providing a safe and efficient airport operating environment;
- Modernize UAL's maintenance facilities, which were constructed between the mid-1940s and early 1970s when aircraft and GSE equipment were much smaller than they are today, in a manner that is consistent with LAWA's Sustainable Design and Construction Policy and that fulfills LAWA's strategic goal of innovating to enhance efficiency and effectiveness;
- Provide sufficient enclosed aircraft maintenance space and remain over night/remain all day (RON/RAD) aircraft parking spaces on UAL's leasehold to support routine servicing and maintenance of aircraft and meet overnight parking requirements;
- Provide facilities to support the maintenance requirements of UAL's operations at LAX; and
- Fulfill LAWA's strategic goal of sustaining a strong business that recognizes the fiscal impact the airport makes on the regional economy.

5.4 Alternatives Considered and Rejected

5.4.1 New West Maintenance Facility

One alternative considered was the consolidation of the East Maintenance Facility and West Maintenance Facility into a new facility to be constructed on the west side of the airport on a site that would include the West Maintenance Facility as well as the area between the existing northerly UAL lease boundary and World Way West, and between Maintenance Road on the west and the easterly edge of the former Continental Airlines (CAL) Training Center Building on the east. This would require modifications to UAL's leasehold. **Figure 5-1** illustrates the conceptual boundaries considered for this alternative. The existing facilities within this alternative site boundary would be demolished, including the UAL West Maintenance Facility and the former CAL Training Center Building. A new aircraft and GSE maintenance facility would be constructed, including hangars, stores, GSE bays, a GSE yard, aircraft parking spaces, and vehicle parking. The project site would be large enough to add additional RON/RAD spaces, but the total number of spaces would be lower than the 22 spaces associated with the proposed project.

As noted above, development of this new facility would require demolition of the CAL Training Center Building, which is eligible for listing in the National Register and the California Register, and for designation as an LAHCM. This would constitute a significant impact to historical resources that would be greater than the impact of the proposed project from the demolition of the two hangars associated with the Intermediate Terminal Facility, which are not National Register-eligible structures.

The scale of demolition and construction activities under this alternative would be similar to the proposed project, although construction workers and haul trucks would travel farther to reach the alternative project site. As a result, it is expected that this alternative would result in a significant unavoidable impact to air quality associated with temporary regional emissions of NO_x that would be similar to, but likely greater than, the impact associated with the proposed project. This alternative would also result in significant unavoidable localized air quality impacts for PM₁₀ and PM_{2.5} during construction that would be similar to the proposed project.



LAX UAL East Aircraft Maintenance and GSE Project

New West Maintenance Facility Conceptual Site

Figure
5-1

5. Alternatives

The proposed project would result in a cumulatively considerable contribution to significant impacts to three intersections from haul truck traffic during peak hours on a temporary basis during project construction: Aviation Boulevard and Century Boulevard, Imperial Highway and Aviation Boulevard, and Imperial Highway and I-105 Ramp. The proposed project's contribution to these cumulatively significant impacts would be less than significant with implementation of the proposed mitigation measure. Construction of the New West Maintenance Facility Alternative would avoid the proposed project's cumulatively considerable, but mitigable, contribution to significant cumulative traffic impacts to these intersections. It is possible that construction of this alternative would have impacts to intersections not studied for the proposed project (including Imperial Highway and Sepulveda Boulevard, Imperial Highway and Main Street, or Imperial Highway and Pershing Drive). Such impacts can only be determined by performing a detailed traffic study, which was not done for this alternative.

In summary, as compared to the proposed project, this alternative would increase the severity of the significant unavoidable impacts to historical resources and to air quality emissions during construction, and would have the same significant unavoidable localized air quality impacts during construction. This alternative would avoid the proposed project's cumulatively considerable contribution to significant traffic impacts to three intersections during construction that would be fully mitigated under the proposed project.

According to the State CEQA Guidelines Section 15126.6(b), "the discussion of alternatives shall focus on alternatives to the project or its location which are capable of avoiding or substantially lessening any significant effects of the project." This alternative would not reduce or avoid the significant unavoidable effects of the proposed project and, in fact, would increase the severity of these significant unavoidable effects.

Moreover, this alternative would not meet many of the project objectives. Although this alternative would result in the consolidation of UAL's existing aircraft and GSE maintenance facilities in a single location, this would not meet the first project objective of providing a facility that would be more efficient and effective or the second project objective of reducing the distance between the maintenance facilities and UAL's passenger gates (which are located in Terminals 7 and 8). On the contrary, aircraft and GSE that currently undergo maintenance at the East Maintenance Facility would now be maintained at a New West Maintenance Facility. This would increase the distance that aircraft and GSE would have to travel to reach the maintenance facility, which would increase fuel consumption and related emissions of criteria pollutants, toxic air contaminants, and greenhouse gases (GHG). The increased distance would also increase the time required to transport aircraft and GSE to the maintenance facility, which would not be efficient from an operations perspective. It would also increase the number of aircraft on already-congested taxiways at LAX, which would not be consistent with the mission of LAX Airfield Operations of providing an efficient airport operating environment. The New West Maintenance Facility alternative site is smaller than the proposed project site and would hinder the project objective of providing sufficient RON/RAD aircraft parking spaces to support routine servicing and maintenance of aircraft and to provide overnight parking.

Because this alternative would not meet many of the key project objectives and would not fulfill the requirement of CEQA to focus on alternatives that would avoid or substantially lessen the project's significant and unavoidable impacts, the New West Maintenance Facility Alternative was not carried forward for further analysis.

5.4.2 West Remote Pads/Gates Site

One alternative considered focused on development of the proposed project on the site of the current West Remote Pads/Gates. This site is located in the western portion of the airport and is bounded to the south by World Way West, to the north by Taxiway D, to the west by Pershing Drive, and to the east by

Taxiway AA. The approximately 71-acre West Remote Pads/Gates site is currently utilized as an apron/gate area for on-loading and off-loading of international and domestic flights that cannot be handled in the Central Terminal Area (CTA). Passengers are ferried to and from the site by buses. The apron area is also utilized for RON and RAD parking of aircraft when the gates are not in use.

The West Remote Pads/Gates site has 9 apron gates with jet loading bridges and another 17 hardstand (pads) without loading bridges, for a total of 26 aircraft positions. Due to the high demand for these gates and parking positions, aircraft are double- and sometimes triple-parked at some of these positions during overnight and early morning hours. A large maneuvering area is located in the southwest quadrant of this alternative site. This maneuvering area is large enough to serve as an operational readiness area for “super-jumbo” aircraft (i.e., Aircraft Design Group VI), such as the Airbus A380, Boeing 747-8, Antonov AN-124, and Lockheed C-5 with limited capabilities. Additionally, this space is utilized for RON/RAD for highly secure visits by public and government officials that at times require staging of military cargo and other large aircraft.

Although the West Remote Pads/Gates site was investigated as an alternative location for the proposed project, it was not carried forward for further analysis because, as demonstrated above, the site is highly utilized and would not be available for use during the time-frame required for development of the proposed project.

5.4.3 Other Alternative Locations

In addition to the sites identified above, other alternative locations at LAX were considered for the new UAL aircraft and GSE maintenance facilities. However, due to space constraints at the airport, no suitable locations are available, other than the former CAL complex and its environs, which is discussed in Section 5.4.1 above and a portion of which is carried forward as an alternative, as described in Section 5.5 below. All of the areas that have access to the airfield are currently occupied by existing uses that require airfield access, many of which are themselves space-constrained. Location of the proposed project at an alternative location would displace an existing use for which no relocation sites are available at the airport. Reasons why alternative locations within specific areas of LAX were rejected as infeasible are addressed below.

- **Area South of Century Boulevard:** The area situated north of the south airfield, east of Sepulveda Boulevard, and south of Century Boulevard is occupied primarily by cargo facilities and aircraft and GSE maintenance facilities. This area includes UAL’s East Maintenance Facility (i.e., the proposed project site), which would be redeveloped under the proposed project. In addition to the UAL East Maintenance Facility, primary land uses in this portion of the airport include the American Eagle Commuter Facility, Delta Air Lines aircraft maintenance facility (which will be removed with implementation of the LAX Landside Access Modernization Program), Delta Air Lines GSE maintenance facility, Mercury Air Group cargo facility, U.S. Postal Service Regional Post Office, American Airlines GSE and Cargo, and the Century Cargo Complex. Other than the proposed project site, there are no undeveloped parcels or underutilized facilities in this portion of the airport of a sufficient size to accommodate the proposed maintenance facility.
- **Area North of Imperial Boulevard:** The area situated south of the south airfield and north of Imperial Boulevard includes cargo and ancillary uses. Primary land uses in this portion of the airport include the Imperial Cargo Complex, South Cargo Area – East, and South Cargo Area – West; fixed-base operators (Signature Flight Support and Atlantic Aviation); and ancillary facilities including the Flight Path Museum and Learning Center, flight kitchens, and miscellaneous LAWA uses, such as the LAWA Inspector’s Office, and similar LAWA administrative functions. There are no undeveloped parcels or underutilized facilities in this portion of the airport of a sufficient size to accommodate the proposed maintenance facility.

- **Area North and South of World Way West:** The area situated between the north and south airfields on either side of World Way West is occupied by a variety of airport uses, including maintenance facilities, LAWA administration functions, and ancillary facilities. The former CAL complex of hangars, shops, and storage facilities, which currently houses the UAL West Maintenance Facility, Compass Airlines maintenance operation, American Airlines Operations Support Facility, and other tenants, is proposed as a project alternative (see Section 5.5.2 below). Other key land uses in the area south of World Way West include the West Aircraft Maintenance Area, portions of which are currently under construction, following which it will be completely built out; employee parking; and American Airlines aircraft maintenance facility (Super Bay Hangar). Primary land uses north of World Way West include the West Remote Pads/Gates (discussed in Section 5.4.2 above), LAWA Maintenance Facility and administrative buildings, FedEx aircraft maintenance facility, LAX Fuel Farm, and the future Midfield Satellite Concourse (MSC), currently under construction. Other facilities to be constructed in this part of the airport include aprons, taxiways, taxilanes, and other components associated with the MSC, as well as a new Secured Area Access Post located south of World Way West and west of Coast Guard Road. Other than the former CAL complex, there are no underutilized facilities, or parcels that are undeveloped or not already planned for future development, in this portion of the airport of a sufficient size to accommodate the proposed maintenance facility.

For the reasons identified above, with the exceptions noted above, these alternative locations at LAX were determined to be infeasible and were not carried forward for further analysis.

5.4.4 Construction Phasing Alternative

In order to reduce construction-related air pollutant emissions to a level that is less than significant (i.e., reduce the proposed project's 260.4 pounds per day of peak daily construction-related regional NO_x emissions, shown in Table 4.1.1-6, to less than the significance threshold of 100 pounds per day), the phasing of the proposed project would be extended from the currently-proposed 22 months to 57 months by reducing the daily construction activity levels by a factor of 2.6 (i.e., reduce the typical 8-hour daily construction work shifts to approximately 3-hour daily work shifts) (calculations provided in Appendix B.5). The extended schedule would also reduce construction-related localized air quality impacts for NO_x, PM₁₀, and PM_{2.5} to levels that would be less than their respective significance thresholds. Although this alternative would reduce daily emissions, it would increase the overall duration of air pollutant emissions as well as the costs associated with construction. Additionally, this alternative would delay achievement of the project objectives, most notably the objective of consolidating UAL's maintenance activities. Therefore, this alternative was determined to be infeasible and was not carried forward for further analysis.

5.5 Alternatives Carried Forward for Further Consideration

The alternatives to the proposed project were formulated in an attempt to avoid or substantially lessen the site-specific significant impacts of the project, primarily significant unavoidable impacts to historical resources from the demolition of the hangar buildings and significant unavoidable impacts to air quality during construction. The potentially feasible alternatives carried forward for evaluation include consolidating UAL's maintenance activities on the west side of the airport at UAL's West Maintenance Facility (Alternative 2: West Maintenance Facility Consolidation) and a Reduced Development Alternative (Alternative 3). In addition, as required by CEQA, a "no project" alternative is also addressed in this section (Alternative 1).

The alternatives carried forward are described below. The environmental impacts of the alternatives are evaluated in Section 5.6, *Evaluation of Project Alternatives*.

5.5.1 Alternative 1 - No Project

Under the No Project Alternative, development of a consolidated aircraft and GSE maintenance facility for UAL would not occur. In accordance with Section 15126.6(e)(3)(B) of the State CEQA Guidelines, both the West Maintenance Facility and the East Maintenance Facility would remain in their existing state; that is, both facilities would continue to be used for aircraft and GSE maintenance and the physical conditions associated with the two sites and their activities would remain essentially the same as under baseline conditions. This would require modification and extension of UAL's current lease on the West Maintenance Facility. Without the proposed project, current inefficiencies associated with operation of two separate maintenance facilities would continue, and UAL aircraft would continue to travel long distances to reach the West Maintenance Facility from the gates at Terminals 7 and 8. Moreover, the existing maintenance facilities, which were constructed between the mid-1940s and the 1970s, would not be modernized. Existing deficiencies in the buildings, such as aging infrastructure and inaptly sized and located facilities, would be unimproved. All UAL aircraft at the East Maintenance Facility would continue to be serviced out-of-doors (i.e., at RON spaces on the apron) due to the lack of a hangar of sufficient size to accommodate the aircraft.

5.5.2 Alternative 2 - West Maintenance Facility Consolidation

Under Alternative 2, UAL would consolidate all aircraft and GSE maintenance activities at the current West Maintenance Facility. This would require modification and extension of UAL's current lease on the West Maintenance Facility. The leasehold would be extended north and east to encompass a portion of the current surface parking lots located south of the former CAL Training Center Building. **Figure 5-2** illustrates the conceptual boundaries considered for this alternative. In order to accommodate the consolidated activities, the existing buildings would be substantially refurbished or altered to provide additional GSE bays, paint booths, and office space, to the extent possible. The narrow-body aircraft hangars would be modified to include doors to accommodate maintenance functions that are required to be conducted in an enclosed space. Under this alternative, the number of RON/RAD spaces available to UAL would decrease from the 34 total spaces under baseline conditions (including the west and east facilities) to 15 or fewer positions. This site does not have any space to accommodate any additional RON/RAD spaces. It is possible that UAL could use RON/RAD spaces at LAWA's West Aircraft Maintenance Area or at the West Remote Pads/Gates; however, as noted in Section 5.4.2, there are already substantial demands on existing RON/RAD areas at LAX and these spaces may not be available for use by UAL aircraft. Moreover, even if spaces at the West Remote Pads/Gates were available for aircraft parking, aircraft maintenance is not permitted at these pads (with the exception of interior cabin maintenance). If no additional RON/RAD spaces were available, some aircraft undergoing servicing and light maintenance, or waiting to take off, would need to remain at UAL's gates in Terminals 7 and 8. Additionally, double-parking of aircraft at the maintenance facility RON/RAD areas may be required, space permitting, which would hinder the efficient management and movement of aircraft. As with the No Project Alternative, this alternative would not replace UAL's outdated maintenance facilities with a modern facility.



LAX UAL East Aircraft Maintenance and GSE Project

Alternative 2: West Maintenance Facility
Consolidation Conceptual Site

Figure
5-2

5.5.3 Alternative 3 - Reduced Development

Under Alternative 3, UAL would consolidate all aircraft and GSE maintenance activities at the East Maintenance Facility. However, instead of demolishing both hangars, only Hangar 2 (the easternmost hangar) would be demolished. A new GSE facility and yard would be constructed north of the existing hangars and a new, single-bay aircraft maintenance hangar would be constructed to replace Hangar 2. Hangar 1 (the westernmost hangar) would be used for aircraft maintenance-related support uses, such as stores. In order to provide for aircraft movement, the six proposed RON/RAD spaces on the southern portion of the leasehold would not be able to be accommodated. Under this alternative, the total number of RON/RAD spaces would be 13, including 10 on the western portion of the leasehold and 3 in the new hangar. A conceptual site plan for this alternative is provided in **Figure 5-3**. This alternative would not provide sufficient space for aircraft maintenance activities. The single bay would provide room for three narrow-body aircraft or one large-body aircraft. This is less hangar space than under existing conditions and would be less aircraft space than provided by the proposed project or by Alternative 2. In addition, the project site would accommodate 10 outdoor parking positions. As with Alternative 2, it is possible that UAL could use RON/RAD spaces at LAWA's West Aircraft Maintenance Area or at the West Remote Pads/Gates; however, as noted in Section 5.4.2, there are already substantial demands on existing RON/RAD areas at LAX and these spaces may not be available for use by UAL aircraft. Moreover, even if spaces at the West Remote Pads/Gates were available for aircraft parking, aircraft maintenance is not permitted at these pads (with the exception of interior cabin maintenance). If no additional RON/RAD spaces were available, with the limited number of aircraft maintenance bays and parking positions, some aircraft undergoing servicing and light maintenance, or waiting to take off, would need to remain at UAL's gates in Terminals 7 and 8. Additionally, double-parking of aircraft at the maintenance facility RON/RAD areas may be required, space permitting. As with the No Project Alternative, this alternative would not replace the outdated Hangar 1 with a modern facility.

5.6 Evaluation of Project Alternatives

5.6.1 Alternative 1 - No Project

5.6.1.1 Air Quality

As discussed in Section 4.1.1, *Air Quality*, the proposed project would have significant, unavoidable, temporary construction-related impacts to air quality consisting of regional emissions of NO_x and localized construction impacts for PM₁₀ and PM_{2.5}. Alternative 1 would not involve any construction and, therefore, would not result in any construction-related impacts to air quality. Alternative 1 would avoid the significant unavoidable construction-related air quality impacts associated with the proposed project.

As discussed in Section 4.1.1, *Air Quality*, during operations of the proposed project, regional emissions would be lower than baseline conditions (i.e., a beneficial impact) and localized impacts would be less than significant. Under Alternative 1, no physical changes would occur at the project site and the current operation of UAL's east and west maintenance facilities would continue. With respect to operational air quality, under this alternative, UAL's maintenance facilities would not be consolidated in a single location, and activities that currently occur at the West Maintenance Facility would not be relocated closer to UAL's passenger gates at Terminals 7 and 8. As a result, UAL aircraft and GSE that would continue to undergo maintenance at the West Maintenance Facility would travel longer distances to be serviced than they would under the proposed project.



LAX UAL East Aircraft Maintenance and GSE Project

Alternative 3: Reduced Development Alternative

Figure
5-3

The operational emissions associated with aircraft taxiing/towing between the hangars and terminals for Alternative 1, compared to the proposed project, are shown in **Table 5-1**. As shown in the table, the operational emissions for Alternative 1 would be greater than the proposed project for all criteria air pollutants analyzed. Note that these operational emissions are also assumed to be the same as the baseline emissions shown in Section 4.1.1, Table 4.1.1-8.

Table 5-1 Alternative 1 Maximum Peak Daily Operational Emissions (lbs/day)			
Pollutant	Alternative 1 Peak Daily Emissions	Proposed Project Peak Daily Emissions	Alternative 1 Emissions Increase Compared to Proposed Project
CO	75.37	44.59	30.79
VOC	6.72	3.98	2.74
NO _x	23.38	15.83	7.55
SO ₂	4.70	2.71	1.99
PM ₁₀	0.45	0.34	0.11
PM _{2.5}	0.45	0.34	0.11
Source: Appendix B.2 of this EIR.			
Prepared By: CDM Smith, May 2018.			

The reduction in average operational vehicle miles traveled (VMT) by current West Maintenance Facility employees from their residences to their work site that would occur under the proposed project would not occur under this alternative. Moreover, under Alternative 1, older, less energy efficient buildings, fixtures, and equipment would not be replaced with modern facilities that are more energy efficient. Therefore, it is expected that operational air quality emissions from building-related energy use would be higher than the proposed project. Overall, operational air pollutant emissions under Alternative 1 would be greater than operational air pollutant emissions under the proposed project.

In summary, Alternative 1 would avoid the significant unavoidable impacts associated with construction air quality that would occur under the proposed project; however, long-term, operational air quality regional and localized emissions associated with this alternative would be greater than those associated with the proposed project.

5.6.1.2 Human Health Risk

As discussed in Section 4.1.2 *Human Health Risk Assessment*, the combined construction and operational impacts of the proposed project on potential cancer risks, as well as chronic and acute non-cancer health hazards, to residents and workers near the proposed project site would be less than significant. Alternative 1 would not involve any construction and, therefore, would not contribute any construction-related impacts to these risks or hazards.

Under Alternative 1, no physical changes would occur at the project site and the current operation of UAL's east and west maintenance Facilities would continue. With respect to operational health risks and hazards under this alternative, UAL's maintenance facilities would not be consolidated in a single location at the East Maintenance Facility, and activities that currently occur at the West Maintenance Facility would not be relocated closer to UAL's passenger gates at Terminals 7 and 8. As a result, UAL aircraft and GSE that would continue to undergo maintenance at the West Maintenance Facility would travel longer distances to be serviced than they would under the proposed project. However, a portion of the maintenance activities that would be relocated to the East Maintenance Facility under the proposed project would remain at the West Maintenance Facility under Alternative 1; these maintenance activities and related aircraft movements would occur farther from the nearest residential and worker locations as

compared to the proposed project. Being farther from these locations would allow for more dilution of the toxic air contaminant emissions and would lower the exposure concentrations used in estimating risks and hazards. Because exposure to construction-related toxic air contaminants is a substantial contributor to human health risks and hazards, operational impacts associated with human health risks would be lower than under the proposed project.

In summary, Alternative 1 would have no incremental impact to human health risk and hazards from construction or operations. Therefore, impacts to human health risk under Alternative 1 would be lower than those associated with the proposed project.

5.6.1.3 Cultural Resources

As discussed in Section 4.2, *Cultural Resources*, the proposed project would have a significant unavoidable adverse impact on historical resources due to the demolition of the historical structures located at 6000-6016 and 6020-6024 Avion Drive. Under Alternative 1, these structures would not be demolished. Therefore, this alternative would not have an impact on historical resources. In comparison to the proposed project, Alternative 1 would avoid the significant unavoidable impact on historical resources associated with the proposed project.

5.6.1.4 Greenhouse Gas Emissions

As discussed in Section 4.3, *Greenhouse Gas Emissions*, the impacts of the proposed project with respect to GHG from construction and operational activities would be less than significant. Alternative 1 would avoid the construction-related emissions associated with the proposed project.

As discussed in Section 4.3, *Greenhouse Gas Emissions*, during operations of the proposed project, GHG emissions would be lower than baseline conditions (i.e., a beneficial impact) even with the addition of amortized construction emissions. Under Alternative 1, no physical changes would occur at the project site and the current operation of UAL's east and west maintenance facilities would continue. With respect to operational GHG under this alternative, UAL's maintenance facilities would not be consolidated in a single location, and activities that currently occur at the West Maintenance Facility would not be relocated closer to UAL's passenger gates at Terminals 7 and 8. As a result, UAL aircraft and GSE that would continue to undergo maintenance at the West Maintenance Facility would travel longer distances to be serviced than they would under the proposed project, which would result in increased GHG emissions compared to the proposed project.

The reduction in average operational VMT by current West Maintenance Facility employees from their residences to their work site that would occur under the proposed project would not occur under this alternative. Moreover, under Alternative 1, older, less energy efficient buildings, fixtures, and equipment would not be replaced with modern facilities that are more energy efficient. Therefore, it is expected that operational GHG emissions from building-related energy use would be higher than the proposed project. Overall, operational GHG emissions under Alternative 1 would be greater than operational GHG emissions under the proposed project.

In summary, Alternative 1 would avoid the construction-related contribution to GHG emissions associated with the proposed project. However, long-term, overall GHG emissions associated with this alternative would be greater than those associated with the proposed project.

5.6.1.5 Transportation/Traffic

As discussed in Section 4.4, *Transportation/Traffic*, construction of the proposed project would result in a cumulatively considerable contribution to significant cumulative impacts at three intersections, including Aviation Boulevard and Century Boulevard (Intersection #1), Imperial Highway and Aviation Boulevard (Intersection #2), and Imperial Highway and I-105 Ramp (Intersection #4). Recommended mitigation

would reduce the project's contribution to these significant cumulative impacts to a level that is less than cumulatively considerable. Alternative 1 would not involve any of the construction activities associated with the development of the proposed project. Construction traffic associated with demolition, construction of new facilities, delivery of materials and hauling, and worker employee trips that would be required for the construction of the proposed project would not occur. Therefore, Alternative 1 would have no construction-related transportation/traffic impacts and would avoid the construction-related transportation/traffic impacts associated with the proposed project.

As discussed in Section 4.4, *Transportation/Traffic*, transportation/traffic impacts associated with operation of the proposed project would be less than significant. Alternative 1 would maintain current operational employee and delivery vehicle traffic patterns. Employees of the West Maintenance Facility would continue to drive to the west side of the airport and employees of the East Maintenance Facility would continue to drive to the east side of the airport. Under Alternative 1, traffic on roadways leading to the East Maintenance Facility would not increase due to project-related traffic. Alternative 1 would avoid operational traffic increases on certain local roadways that would occur under the proposed project.

5.6.1.6 Energy

As discussed in Section 6.5, *Energy Impacts and Conservation*, construction and operation of the proposed project would not result in wasteful, inefficient, or unnecessary energy use; would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency; would not increase reliance on fossil fuels; and would incorporate renewable energy and energy efficiency measures. The proposed project would not result in any significant adverse impacts with respect to energy consumption or energy conservation.

Alternative 1 would not involve any construction; therefore, no energy impacts from construction would occur and Alternative 1 would avoid the construction-related energy use associated with the proposed project.

As discussed in Section 6.5, *Energy Impacts and Conservation*, during operation of the proposed project, use of fossil fuels would be lower than baseline conditions (i.e., a beneficial impact) even with the addition of amortized construction-related energy use. Under Alternative 1, no physical changes would occur at the project site and the current operation of UAL's east and west maintenance facilities would continue. With respect to operational energy use under this alternative, UAL's maintenance facilities would not be consolidated in a single location, and activities that currently occur at the West Maintenance Facility would not be relocated closer to UAL's passenger gates at Terminals 7 and 8. As a result, UAL aircraft and GSE that would continue to undergo maintenance at the West Maintenance Facility would travel longer distances to be serviced than they would under the proposed project, which would increase fossil fuel consumption as compared to the proposed project.

The reduction in average operational VMT by current West Maintenance Facility employees from their residences to their work site that would occur under the proposed project would not occur under this alternative, nor would the elimination of vehicle trips between the east and west maintenance facilities. As a result, vehicle-related fossil fuel consumption would increase compared to the proposed project. Moreover, under Alternative 1, older, less energy efficient buildings, fixtures, and equipment would not be replaced with modern facilities that are more energy efficient. Therefore, building-related energy consumption during operations would be higher than the proposed project. Overall, operational energy use under Alternative 1 would be greater than under the proposed project. The increase in operational energy use associated with Alternative 1 would offset the reduction in energy use (as compared to the proposed project) associated with avoiding the construction that would occur under the proposed project.

In summary, Alternative 1 would result in less efficient consumption of energy resources as compared to the proposed project. Although it would not increase reliance on fossil fuels as compared to baseline

conditions, Alternative 1 would not have the beneficial impact with respect to energy use that would be associated with the proposed project. Alternative 1 would not incorporate energy efficiency measures. This alternative would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency, but nor would it promote these plans. For these reasons, the combined impact of Alternative 1 on energy and conservation during construction and operations would be greater than that associated with the proposed project. Nevertheless, energy use associated with Alternative 1 would not be wasteful, inefficient, or unnecessary.

5.6.2 Alternative 2 - West Maintenance Facility Consolidation

5.6.2.1 Air Quality

As discussed in Section 4.1.1, *Air Quality*, the proposed project would have significant, unavoidable, temporary construction-related impacts to air quality consisting of regional emissions of NO_x and localized construction impacts for PM₁₀ and PM_{2.5}. Under Alternative 2, construction would be limited to refurbishment or interior alteration of the CAL hangar facility and extension of the UAL lease area to encompass additional surface parking. These modifications would result in limited air pollutant emissions; it is anticipated that construction-related air quality impacts would be less than significant. Alternative 2 would avoid the significant unavoidable construction-related air quality impacts associated with the proposed project.

As discussed in Section 4.1.1, *Air Quality*, during operations of the proposed project, regional emissions would be lower than baseline conditions (i.e., a beneficial impact) and localized impacts would be less than significant. With respect to operational air quality, under Alternative 2, all of UAL's aircraft and GSE would undergo maintenance at the West Maintenance Facility. This would involve relocation of maintenance activities and RON/RAD aircraft that currently occur at the East Maintenance Facility to the West Maintenance Facility. This would increase the distance that aircraft and GSE would have to travel to reach the maintenance facility, which would increase fuel consumption and related emissions of criteria pollutants compared to the proposed project.

The operational emissions associated with aircraft taxiing/towing between the hangars and terminals for Alternative 2, compared to the proposed project, are shown in **Table 5-2**. As shown in the table, operational emissions under Alternative 2 would be less than significant, but would be greater than the proposed project emissions for all criteria air pollutants analyzed. Alternative 2 would not have the beneficial impact with respect to operational air quality emissions that would be associated with the proposed project.

The reduction in average operational VMT by current West Maintenance Facility employees from their residences to their work site that would occur under the proposed project would not occur under this alternative. Moreover, current East Maintenance Facility employees would be relocated to the west under this alternative, which would increase the average VMT traveled by these employees from their residences to their work site. This would represent an increase in emissions compared to baseline conditions. Under Alternative 2, UAL would continue to conduct aircraft and GSE maintenance in an old facility (the West Maintenance Facility was constructed in the 1960s and 1970s). The older, less energy efficient buildings, fixtures, and equipment would not be replaced with modern facilities that are more energy efficient. Therefore, it is expected that operational air quality emissions from building-related energy use would be higher than the proposed project. Overall, operational air pollutant emissions under Alternative 2 would be greater than operational air pollutant emissions under the proposed project.

Table 5-2
Alternative 2 Maximum Peak Daily Operational Emissions (lbs/day)

Pollutant	Baseline Peak Daily Emissions	Alternative 2 Peak Daily Emissions	Increment in Peak Daily Emissions	Threshold	Significant?
CO	75.37	114.96	39.58	550	No
VOC	6.72	10.24	3.52	55	No
NO _x	23.38	33.08	9.70	55	No
SO ₂	4.70	7.26	2.56	150	No
PM ₁₀	0.45	0.58	0.14	150	No
PM _{2.5}	0.45	0.58	0.14	55	No

Source: Appendix B.2 of this EIR.

Prepared By: CDM Smith, May 2018.

In summary, it is anticipated that Alternative 2 would avoid the significant unavoidable impacts associated with construction air quality that would occur under the proposed project; however, long-term, operational air quality impacts associated with this alternative would be greater than those associated with the proposed project.

5.6.2.2 Human Health Risk

As discussed in Section 4.1.2 *Human Health Risk Assessment*, the combined construction and operational impacts of the proposed project on potential cancer risks, as well as chronic and acute non-cancer health hazards, to residents and workers near the proposed project site would be less than significant. The intensity of construction activity under Alternative 2 would be lower than that under the proposed project and would occur farther from the nearest residential and worker locations; therefore, Alternative 2 would result in lower construction-related impacts to health risks or hazards than the proposed project.

Under Alternative 2, all of UAL's aircraft and GSE would undergo maintenance at the West Maintenance Facility. This would involve relocation of maintenance activities and RON/RAD aircraft that currently occur at the East Maintenance Facility to the West Maintenance Facility. This would increase the distance that aircraft and GSE would have to travel to reach the maintenance facility, which would increase fuel consumption and related emissions of toxic air contaminants compared to the proposed project. However, much of this activity would occur farther from the nearest residential and worker locations than under the proposed project. Being farther from these locations would allow for more dilution of the toxic air contaminant emissions and would lower the exposure concentrations used in estimating risks and hazards. Because exposure to construction-related toxic air contaminants is a substantial contributor to human health risks and hazards, operational impacts associated with human health risks under Alternative 2 would likely be lower than under the proposed project.

In summary, construction-related impacts to human health risks and hazards associated with Alternative 2 would be lower than those associated with the proposed project. Moreover, it is likely that operational impacts to human health risk under Alternative 2 would be lower than those associated with the proposed project.

5.6.2.3 Cultural Resources

As discussed in Section 4.2, *Cultural Resources*, the proposed project would have a significant unavoidable adverse impact on historical resources located at the East Maintenance Facility. Under this alternative, UAL's aircraft and GSE maintenance activities would be consolidated at the West Maintenance Facility. In order to accommodate the consolidated activities, the existing buildings would be substantially refurbished or altered. The West Maintenance Facility is located in a portion of the former CAL hangars,

5. Alternatives

shops, and storage facilities. The CAL hangars, shops, and storage facilities are not historic individually; however, the facilities together are a contributor to a California Register-eligible historic district that includes the attached CAL General Office (GO) Building (7270 World Way West) and the nearby CAL Training Center Building at 7320 World Way West. This district, referred to as the CAL Airlines Complex, is also eligible for designation as an LAHCM. LAWA recently approved the Secured Area Access Post Project, under which the CAL GO Building will be demolished. Without the CAL GO building, the district will no longer be eligible for listing in the California Register or for designation as an LAHCM.³⁰⁰ Therefore, the building alterations and refurbishment associated with this alternative would not have any impact on historical resources. Alternative 2 would avoid the significant and unavoidable adverse impact to historical resources associated with the proposed project.

5.6.2.4 Greenhouse Gas Emissions

As discussed in Section 4.3, *Greenhouse Gas Emissions*, the impacts of the proposed project with respect to GHG emissions from construction and operational activities would be less than significant. Alternative 2 would result in lower construction-related emissions than those under the proposed project due to the reduced level of construction associated with refurbishing existing facilities instead of demolishing and rebuilding maintenance facilities.

As discussed in Section 4.3, *Greenhouse Gas Emissions*, during operations of the proposed project, GHG emissions would be lower than baseline conditions (i.e., a beneficial impact) even with the addition of amortized construction emissions. Under Alternative 2, all of UAL's aircraft and GSE would undergo maintenance at the West Maintenance Facility. This would involve relocation of maintenance activities and RON/RAD aircraft that currently occur at the East Maintenance Facility to the West Maintenance Facility. This would increase the distance that aircraft and GSE would have to travel to reach the maintenance facility, which would increase fuel consumption and related GHG emissions compared to the proposed project.

The reduction in average operational VMT by current West Maintenance Facility employees from their residences to their work site that would occur under the proposed project would not occur under this alternative. Moreover, current East Maintenance Facility employees would be relocated to the west under this alternative, which would increase the average VMT traveled by these employees from their residences to their work site. This would represent an increase in GHG emissions compared to baseline conditions. Under Alternative 2, older, less energy efficient buildings, fixtures, and equipment would not be replaced with modern facilities that are more energy efficient. Therefore, it is expected that operational air pollutant emissions from building-related energy use would be higher than the proposed project. Overall, operational GHG emissions under Alternative 2 would be greater than operational GHG emissions under the proposed project.

Overall, operational GHG emissions under Alternative 2 would be greater than operational emissions under the proposed project. Alternative 2 would not have the beneficial impact with respect to GHG emissions that would be associated with the proposed project.

In summary, Alternative 2 would reduce the construction-related contribution to GHG emissions associated with the proposed project. However, long-term, overall GHG emissions associated with this alternative would be greater than those associated with the proposed project.

³⁰⁰ City of Los Angeles, Los Angeles World Airports, *Final Environmental Impact Report for Los Angeles International Airport Secured Area Access Post Project* January 2018. Available: <https://www.lawa.org/-/media/lawa-web/lawa-our-lax/documents-underway/lax-saap-final-eir.ashx?la=en&hash=D5F4D3753E0F712E69AA094632211A4F48C0196D>.

5.6.2.5 Transportation/Traffic

As discussed in Section 4.4, *Transportation/Traffic*, construction of the proposed project would result in a cumulatively considerable contribution to significant cumulative impacts at three intersections, including Aviation Boulevard and Century Boulevard (Intersection #1), Imperial Highway and Aviation Boulevard (Intersection #2), and Imperial Highway and I-105 Ramp (Intersection #4). Recommended mitigation would reduce the project's contribution to these significant cumulative impacts to a level that is less than cumulatively considerable. Due to the location of Alternative 2 on the west side of the airport, this alternative would avoid the cumulatively considerable contributions to these intersections that would occur under the proposed project. Moreover, as the level of construction associated with Alternative 2 would be relatively low, it is not expected that this alternative would result in impacts to intersections not studied for the proposed project (including Imperial Highway and Sepulveda Boulevard, Imperial Highway and Main Street, and Imperial Highway and Pershing Drive). Overall, the construction-related impacts of Alternative 2 on transportation/traffic would be less than those associated with the proposed project.

As discussed in Section 4.4, *Transportation/Traffic*, transportation/traffic impacts associated with operation of the proposed project would be less than significant. Under Alternative 2, employees of the East Maintenance Facility would be relocated to the West Maintenance Facility. As a result, vehicle trips by employees and delivery vehicles would occur on different roads than under baseline conditions or the proposed project. However, given that almost all operational employee trips would occur outside of the peak traffic hours, it is expected that operational impacts to transportation/traffic under Alternative 2 would be less than significant. Although traffic would shift to different roads, the impacts of Alternative 2 on operational transportation/traffic would be comparable to those associated with the proposed project.

5.6.2.6 Energy

As discussed in Section 6.5, *Energy Impacts and Conservation*, construction and operation of the proposed project would not result in wasteful, inefficient, or unnecessary energy use; would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency; would not increase reliance on fossil fuels; and would incorporate renewable energy and energy efficiency measures. The proposed project would not result in any significant adverse impacts with respect to energy consumption or energy conservation.

Under Alternative 2, construction would be limited to refurbishment or interior alteration of the existing CAL hangar facility and extension of the lease area to encompass additional surface parking. These building modifications would result in less construction-related energy use than the proposed project.

As discussed in Section 6.5, *Energy Impacts and Conservation*, during operation of the proposed project, use of fossil fuels would be lower than baseline conditions (i.e., a beneficial impact) even with the addition of amortized construction-related energy use. With respect to operational energy use, under Alternative 2, all of UAL's aircraft and GSE would undergo maintenance at the West Maintenance Facility. This would involve relocation of maintenance activities and RON/RAD aircraft that currently occur at the East Maintenance Facility to the West Maintenance Facility. This would increase the distance that aircraft and GSE would have to travel to reach the maintenance facility, which would increase fossil fuel consumption compared to the proposed project.

The reduction in average operational VMT by current West Maintenance Facility employees from their residences to their work site that would occur under the proposed project would not occur under this alternative. Moreover, current East Maintenance Facility employees would be relocated to the west under this alternative, which would increase the average VMT traveled by these employees from their residences to their work site. As a result, vehicle-related fossil fuel consumption would increase compared to the proposed project. Moreover, under Alternative 2, UAL would continue to conduct aircraft and GSE

maintenance in an old facility (the West Maintenance Facility was constructed in the 1960s and 1970s). The older, less energy efficient buildings, fixtures, and equipment would not be replaced with modern facilities that are more energy efficient. Therefore, building-related energy consumption during operations would be higher than the proposed project. Overall, operational energy use under Alternative 2 would be greater than under the proposed project. The increase in operational energy use associated with Alternative 2 would offset the reduction in energy use associated with lower construction-related energy use as compared to the proposed project.

In summary, Alternative 2 would result in less efficient consumption of energy resources as compared to the proposed project, and would not have the beneficial impact with respect to energy use that would be associated with the proposed project. This alternative would result in an increased reliance on fossil fuels as compared to baseline conditions. Alternative 2 would not incorporate energy efficiency measures. This alternative would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency, but nor would it promote these plans. For these reasons, the combined impact of Alternative 2 on energy and conservation during construction and operations would be greater than that associated with the proposed project. Nevertheless, energy use associated with Alternative 2 would not be wasteful, inefficient, or unnecessary.

5.6.3 Alternative 3 - Reduced Development

5.6.3.1 Air Quality

As discussed in Section 4.1.1, *Air Quality*, the proposed project would have significant, unavoidable, temporary construction-related impacts to air quality consisting of regional emissions of NO_x and localized construction impacts for PM₁₀ and PM_{2.5}. Under Alternative 3, total construction air pollutant emissions and the duration of impacts associated with these emissions would be less than the proposed project given the reduced amount of demolition and construction that would occur. However, although implementation of Alternative 3 would result in less development, it is likely that this alternative would still result in similar maximum daily emissions given that the intensity of construction activity would likely remain the same (i.e., the reduced development could reduce the overall duration of development, but daily activity levels would likely be similar to those of the proposed project). As stated in Section 4.1.1, *Air Quality*, the construction thresholds of significance for emissions and local impacts are based on maximum daily emissions. As Alternative 3 would have a similar intensity of construction activity on the peak construction day, this alternative would result in similar significant, unavoidable impacts with respect to maximum daily regional NO_x emissions and localized impacts relative to PM₁₀ and PM_{2.5} as compared to the proposed project. Construction air pollutant emissions from this alternative would still exceed the regional daily emissions significance threshold for NO_x and the localized impacts to PM₁₀ and PM_{2.5} following implementation of the same mitigation measures that would be implemented under the proposed project (see Section 4.1.1, *Air Quality*). Alternative 3 would have the same significant, unavoidable, temporary impact on construction-related air quality as would the proposed project.

As discussed in Section 4.1.1, *Air Quality*, during operations of the proposed project, regional emissions would be lower than baseline conditions (i.e., a beneficial impact) and localized impacts would be less than significant. Alternative 3 would have substantially fewer RON/RAD spaces than the proposed project. As discussed in Section 5.5.3, it is possible that aircraft could use RON/RAD spaces at LAWA's West Aircraft Maintenance Area or at the West Remote Pads/Gates. As these facilities are located on the west side of the airport, this would increase the travel distance for aircraft associated with this alternative as they move back and forth between the East Maintenance Facility and the RON/RAD spaces, which would increase operational emissions associated with taxiing and towing. Due to uncertainties related to RON/RAD areas that would be used under this alternative, the increased emissions could not be calculated.

Under Alternative 3, Hangar 2 would be replaced by a new, modern facility. However, Hangar 1, which was constructed in the 1940s, would not be replaced. Therefore, it is expected that operational air pollutant emissions from building-related energy use would be higher than the proposed project. Overall, it is expected that Alternative 3 would have greater operational air quality impacts than the proposed project.

In summary, Alternative 3 would have the same significant unavoidable impact associated with construction emissions and localized construction impacts as the proposed project. Long-term operational-related air quality impacts under Alternative 3 would be greater than the proposed project, although it is likely that they would be less than significant.

5.6.3.2 Human Health Risk

As discussed in Section 4.1.2 *Human Health Risk Assessment*, the combined construction and operational impacts of the proposed project on potential cancer risks, as well as chronic and acute non-cancer health hazards, to residents and workers near the proposed project site would be less than significant. Under Alternative 3, the reduced amount of demolition and construction that would occur relative to the proposed project would result in a shorter construction duration and lower associated total construction toxic air contaminant emissions. The cancer risks, and possibly the chronic non-cancer health hazards, would be lower under Alternative 3 than under the proposed project. However, although implementation of Alternative 3 would result in less development, it is likely that this alternative would still result in similar maximum daily emissions given that the intensity of construction activity would likely remain the same. Therefore, acute non-cancer health hazards due to construction of Alternative 3 would be the same as those for the proposed project.

Alternative 3 would have substantially fewer RON/RAD spaces than the proposed project. As discussed in Section 5.5.3, it is possible that aircraft could use RON/RAD spaces at LAWA's West Aircraft Maintenance Area or at the West Remote Pads/Gates. As these facilities are located on the west side of the airport, this would increase the travel distance for aircraft associated with this alternative as they move back and forth between the East Maintenance Facility and the RON/RAD spaces, which would increase operational toxic air contaminant emissions associated with taxiing and towing. Due to uncertainties related to RON/RAD areas that would be used under this alternative, the increased emissions could not be calculated. Overall, it is expected that Alternative 3 would have greater operational contributions to cancer risks and non-cancer health hazards than the proposed project.

In summary, Alternative 3 construction-related impacts to cancer risks and chronic non-cancer hazards on human health would be lower than those associated with the proposed project, while construction-related acute non-cancer health hazards would be similar to those for the proposed project. Alternative 3 operational impacts to cancer risks and chronic non-cancer health hazards would be greater than those associated with the proposed project, while acute non-cancer health hazards would be similar. Because exposure to construction-related toxic air contaminants is a substantial contributor to cancer risks and chronic non-cancer health hazards, the combined construction and operational impacts to health risks and hazards under Alternative 3 would likely be lower than those associated with the proposed project. The Alternative 3 combined construction and operational acute non-cancer health hazard impacts would be the same as those for the proposed project.

5.6.3.3 Cultural Resources

As discussed in Section 4.2, *Cultural Resources*, the proposed project would have a significant unavoidable adverse impact on historical resources due to the demolition of the historical structures located at 6000-6016 and 6020-6024 Avion Drive (Hangar 2 and Hangar 1, respectively). Under Alternative 3, UAL would consolidate all aircraft and GSE maintenance activities at the East Maintenance Facility. However, instead

of demolishing both hangars, only Hangar 2 (the easternmost hangar) would be demolished. As discussed in Section 4.2, *Cultural Resources*, Hangar 1 and Hangar 2 together are eligible for listing in the California Register and for designation as an LAHCM. Because it is eligible for listing at the state and local levels as part of a grouping of buildings, demolition of Hangar 2 would result in a significant unavoidable impact to an historical resource. However, Alternative 3 would retain Hangar 1. By itself, Hangar 1 retains most of its original massing, cladding, fenestration, and entrance openings. Moreover, even with demolition of Hangar 2, Hangar 1 would continue to be significant for its association with the Intermediate Terminal Facility period at LAX and would continue to remain eligible for listing in the California Register and for designation as an LAHCM. Therefore, even though Alternative 3 would have a significant unavoidable impact on historical resources, the severity of this impact would be less than the impact associated with the proposed project, which would result in the demolition of both hangars.

5.6.3.4 Greenhouse Gas Emissions

As discussed in Section 4.3, *Greenhouse Gas Emissions*, the impacts of the proposed project with respect to GHG emissions from construction and operational activities would be less than significant. Alternative 3 would result in lower overall construction-related GHG emissions than those under the proposed project due to the reduced duration of construction.

As discussed in Section 4.3, *Greenhouse Gas Emissions*, during operations of the proposed project, GHG emissions would be lower than baseline conditions (i.e., a beneficial impact) even with the addition of amortized construction emissions. Under Alternative 3, all of UAL's aircraft and GSE would undergo maintenance at the East Maintenance Facility. However, Alternative 3 would have substantially fewer RON/RAD spaces than the proposed project. As discussed in Section 5.5.3, it is possible that aircraft could use RON/RAD spaces at LAWA's West Aircraft Maintenance Area or at the West Remote Pads/Gates. As these facilities are located on the west side of the airport, this would increase the travel distance for aircraft associated with this alternative as they move back and forth between the East Maintenance Facility and the RON/RAD spaces, which would increase operational emissions associated with taxiing and towing. Due to uncertainties related to RON/RAD areas that would be used under this alternative, the increased emissions could not be calculated.

Under Alternative 3, Hangar 2 would be replaced by a new, modern facility. However, Hangar 1, which was constructed in the 1940s, would not be replaced. Therefore, it is expected that operational GHG emissions from building-related energy use would be higher than the proposed project. Overall, it is expected that Alternative 3 would have greater operational contributions to GHG emissions than the proposed project.

In summary, Alternative 3 would reduce the construction-related contribution to GHG emissions. However, long-term, overall GHG emissions associated with this alternative would likely be greater than those associated with the proposed project.

5.6.3.5 Transportation/Traffic

As discussed in Section 4.4, *Transportation/Traffic*, construction of the proposed project would result in a cumulatively considerable contribution to significant cumulative impacts at three intersections, including Aviation Boulevard and Century Boulevard (Intersection #1), Imperial Highway and Aviation Boulevard (Intersection #2), and Imperial Highway and I-105 Ramp (Intersection #4). Recommended mitigation would reduce the project's contribution to these significant cumulative impacts to a level that is less than cumulatively considerable. Alternative 3 would result in a reduced amount of demolition and construction and a shorter construction schedule. However, it is expected that the daily construction activity level would be similar to the proposed project. As stated in Section 4.4, *Transportation/Traffic*, the thresholds of significance are based on the level of service at an intersection during the a.m. or p.m. peak hour. As

Alternative 3 would have a similar intensity of daily construction activity, this alternative would result in similar impacts to Intersections #1, #2, and #4 as the proposed project. As with the proposed project, following implementation of mitigation, these impacts would be less than significant.

As discussed in Section 4.4, *Transportation/Traffic*, transportation/traffic impacts associated with operation of the proposed project would be less than significant. As with the proposed project, under Alternative 3, all operations would be consolidated at the East Maintenance Facility. Therefore, operational trips to the project site would be the same under the two alternatives. Under Alternative 3, some aircraft maintenance may have to be conducted at RON/RAD aircraft parking spaces located on other portions of the airport. It is expected that employees would travel to the aircraft locations from the East Maintenance Facility using on-airport roads. Therefore, Alternative 3 would not change traffic on off-airport roadways as compared to the proposed project and operational traffic impacts associated with Alternative 3 would be the same as the proposed project.

5.6.3.6 Energy

As discussed in Section 6.5, *Energy Impacts and Conservation*, construction and operation of the proposed project would not result in wasteful, inefficient, or unnecessary energy use; would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency; would not increase reliance on fossil fuels; and would incorporate renewable energy and energy efficiency measures. The proposed project would not result in any significant adverse impacts with respect to energy consumption or energy conservation.

Under Alternative 3, total construction-related energy use would be less than the proposed project given the reduced amount of demolition and construction that would occur.

As discussed in Section 6.5, *Energy Impacts and Conservation*, during operation of the proposed project, use of fossil fuels would be lower than baseline conditions (i.e., a beneficial impact) even with the addition of amortized construction-related energy use. Alternative 3 would have substantially fewer RON/RAD spaces than the proposed project. As discussed in Section 5.5.3, it is possible that aircraft could use RON/RAD spaces at LAWA's West Aircraft Maintenance Area or at the West Remote Pads/Gates. As these facilities are located on the west side of the airport, this would increase the travel distance for aircraft associated with this alternative as they move back and forth between the East Maintenance Facility and the RON/RAD spaces, which would increase operational fossil fuel consumption associated with taxiing and towing as compared to the proposed project.

As with the proposed project, the consolidation of maintenance activities on the east side of the airport under Alternative 3 would reduce VMT by maintenance employees from their places of residence to the worksite as compared to baseline conditions and vehicle trips between the east and west maintenance facilities would be eliminated. Under Alternative 3, Hangar 2 would be replaced by a new, modern facility. However, Hangar 1, which was constructed in the 1940s and is a less energy efficient facility than new construction, would not be replaced. Therefore, building-related energy use would be higher than the proposed project. Overall, operational energy use under Alternative 3 would be greater than under the proposed project. It is expected that the increase in operational energy use associated with Alternative 3 would offset the reduction in energy use associated with lower construction-related energy use as compared to the proposed project.

In summary, Alternative 3 would result in less efficient consumption of energy resources as compared to the proposed project, and would not have the beneficial impact with respect to energy use that would be associated with the proposed project. This alternative would result in an increased reliance on fossil fuels as compared to the proposed project, would have reduced opportunities to incorporate energy efficiency measures into the new facility, and would have less opportunity to promote state or local plans pertaining to energy efficiency. For these reasons, the combined impact of Alternative 3 on energy and conservation

during construction and operations would be greater than that associated with the proposed project. Nevertheless, energy use associated with Alternative 3 would not be wasteful, inefficient, or unnecessary.

5.7 Environmentally Superior Alternative

Section 15126.6(e)(2) of the State CEQA Guidelines indicates that an analysis of alternatives to a proposed project shall identify an environmentally superior alternative among the alternatives evaluated in an EIR. The State CEQA Guidelines also state that should it be determined that the No Project Alternative is the environmentally superior alternative, the EIR shall identify another environmentally superior alternative among the remaining alternatives. With respect to identifying an environmentally superior alternative among those analyzed in this EIR, the range of alternatives includes Alternative 1: No Project, Alternative 2: West Maintenance Facility Consolidation, and Alternative 3: Reduced Development.

A comparative summary of the environmental impacts associated with each alternative and the environmental impacts associated with the proposed project is provided in **Table 5-3**. A more detailed description of the potential impacts associated with each alternative is provided above. Pursuant to Section 15126.6(c) of the State CEQA Guidelines, the analysis below addresses the ability of the alternatives to “avoid or substantially lessen one or more of the significant effects” of the project.

As discussed above, and as shown in Table 5-3, Alternative 1 (No Project) is considered to be the environmentally superior alternative because it would avoid all construction impacts of the proposed project, including significant unavoidable temporary construction-related air quality impacts, and it would avoid the significant unavoidable impact to historical resources that would occur under the proposed project. It should be noted that Alternative 1 would have greater operational air pollutant and GHG emissions than the proposed project and would result in a less efficient consumption of energy resources as compared to the proposed project.

In accordance with the State CEQA Guidelines requirement to identify an environmentally superior alternative other than the No Project Alternative, a comparative evaluation of the remaining alternatives indicates that Alternative 2, West Maintenance Facility Consolidation, would be the environmentally superior alternative relative to the other build alternative. Alternative 2 would avoid the significant unavoidable impact to historical resources associated with the proposed project. Because it would not involve demolition of any structures and would involve less construction overall, Alternative 2 would also avoid the significant unavoidable temporary construction-related air quality impacts associated with the proposed project and would have lower construction-related impacts associated with GHG and energy consumption than the proposed project. Alternative 2 would also have fewer construction-related air quality and GHG impacts than Alternative 3; this is because Alternative 3 would result in demolition of one of the two hangars located on the proposed project site and construction of new facilities, whereas Alternative 2 would only involve refurbishment of the existing West Maintenance Facility. Construction-related impacts of Alternative 2 on transportation/traffic would be less than those of the proposed project, although these impacts would be less than significant under both Alternative 2 and the proposed project (with implementation of mitigation measures). With respect to operations, Alternative 2 would increase operations-related impacts to air quality, GHG, and energy and conservation as compared to the proposed project.

Table 5-3 Comparison of Impacts Associated with the Alternatives and Impacts of the Proposed Project				
Environmental Resource	Proposed Project	Alternative 1: No Project	Alternative 2: West Maintenance Facility Consolidation	Alternative 3: Reduced Development
Air Quality				
Regional Construction Emissions	Significant and Unavoidable	No Impact	Less Than Significant	Significant and Unavoidable
Localized Construction Emissions	Significant and Unavoidable	No Impact	Less Than Significant	Significant and Unavoidable
Operational Emissions	Less Than Significant (Beneficial Impact)	No Impact ¹	Less Than Significant	Less Than Significant
Operational Concentrations	Less Than Significant	No Impact	Less Than Significant	Less Than Significant
Human Health Risk				
Cancer Risk, Chronic-Non-Cancer and Acute Non-Cancer Health Hazards, and Occupational Effects	Less Than Significant	No Impact	Less Than Significant	Less Than Significant
Cultural Resources				
Historical Resources	Significant and Unavoidable	No Impact	No Impact	Significant and Unavoidable
Greenhouse Gas Emissions				
GHG Emissions	Less Than Significant (Beneficial Impact)	No Impact ¹	Less Than Significant	Less Than Significant
Consistency with GHG Reduction Plans	Less Than Significant	No Impact	Less Than Significant	Less Than Significant
Transportation/Traffic				
Construction Traffic	Less Than Significant with Mitigation	No Impact	Less Than Significant	Less Than Significant with Mitigation
Operational Traffic	Less Than Significant	No Impact	Less Than Significant	Less Than Significant
Energy Impacts and Conservation				
Wasteful, Inefficient or Unnecessary Consumption	Less Than Significant	Less Than Significant	Less Than Significant	Less Than Significant
Reliance on Fossil Fuels	Less Than Significant	Less Than Significant	Less Than Significant	Less Than Significant
Consistency with Energy Efficiency Plans	Less Than Significant	Less Than Significant	Less Than Significant	Less Than Significant
Source: CDM Smith, 2018.				
Notes:				
¹ . Under Alternative 1, emissions would not change from baseline conditions. Emissions under this alternative would be greater than under the proposed project.				

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