5.0 ALTERNATIVES

5.1 INTRODUCTION

Section 15126.6(a)–(b) of the State of California Environmental Quality Act ("CEQA") Guidelines (14 *California Code of Regulations* ["CCR"]) provides guidance on the range of alternatives to a proposed project that must be evaluated. The State CEQA Guidelines state:

> (a) Alternatives to the Proposed Project. An EIR shall describe a range of reasonable alternatives to the project, or to the location of the project, which 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. An EIR need not consider every conceivable alternative to a project. Rather it must consider a reasonable range of potentially feasible alternatives that will foster informed decision making and public participation. An EIR is not required to consider alternatives which are infeasible. The Lead Agency is responsible for selecting a range of project alternatives for examination and must publicly disclose its reasoning for selecting those alternatives. There is no ironclad rule governing the nature or scope of the alternatives to be discussed other than the rule of reason.
>
> (b) Purpose. Because an EIR must identify ways to mitigate or avoid the significant effects that a project may have on the environment (Public Resources Code §21002.1), 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, even if these alternatives would impede to some degree the attainment of the project objectives, or would be more costly.

Pursuant to the State CEQA Guidelines, a range of alternatives for the General Aviation Improvement Program ("GAIP") are considered and evaluated in this Program Environmental Impact Report ("EIR"). In addition to the Proposed Project and Alternative 1, other alternatives for the GAIP were developed in the course of the planning and environmental review process. The discussion in this section provides:

1. A description of the additional alternatives considered
2. An analysis of whether the alternatives meet most of the objectives established for the GAIP (as presented in Sections 1.4 and 3.7 of this EIR and restated below)
3. An analysis comparing the alternatives under consideration and the Proposed Project. The focus of this analysis is to determine if alternatives are capable of eliminating or reducing the significant environmental effects of the Proposed Project and/or Alternative 1 to a less than significant level.

5.2 CRITERIA FOR SELECTING ALTERNATIVES

Several criteria were used to select alternatives to the Proposed Project. These criteria are described below.

5.2.1 ABILITY TO ACHIEVE PROJECT OBJECTIVES

The ability of an alternative to meet most of the project objectives is an important component when evaluating alternatives. When an alternative is selected, not only are the environmental impacts considered but so is the alternative's ability to meet the proposed project's intended objectives. Section 15126.6(f) of the State CEQA Guidelines (14 CCR) states:

> The range of alternatives required in an EIR is governed by a 'rule of reason' that requires the EIR to set forth only those alternatives necessary to permit a reasoned choice. The alternatives shall be limited to ones that would avoid or substantially lessen any of the significant effects of the project. Of those alternatives, the EIR need examine in detail only the ones that the lead agency determines could feasibly attain most of the basic objectives of the project.

The Project objectives for the John Wayne Airport General Aviation Improvement Program ("GAIP") have been defined as follows:

- To enhance safe and secure operations
- To utilize limited land area efficiently and economically
- To enhance compatibility between general and commercial aviation operations
- To embrace flexibility to allow for technological advances and market trends
- To maximize economic, self-sustaining, revenue-producing facilities
- To assess the ability of existing infrastructure to support general aviation facilities

5.2.2 FEASIBILITY

When developing alternatives for evaluation in an EIR, the feasibility of implementing the alternative must be considered. If a range of alternatives are developed but, due to regulatory restrictions, cannot be implemented, the analysis would not meet the intent of CEQA of providing a reasonable range of feasible alternatives. Section 15126.6(f)(1) of the State CEQA Guidelines (14 CCR) states:

> Among the factors that may be taken into account when addressing the feasibility of alternatives are site suitability, economic viability, availability of infrastructure, general plan consistency, other plans or regulatory limitations, jurisdictional boundaries (projects with a regionally significant impact should consider the regional context), and whether the proponent can reasonably acquire, control or otherwise have access to the alternative site (or the site is already owned by the proponent). No one of these factors establishes a fixed limit on the scope of reasonable alternatives (*Citizens of Goleta Valley v. Board of Supervisors* (1990) 52

Cal.3d 553; see *Save Our Residential Environment v. City of West Hollywood* (1992) 9 Cal.App.4th 1745, 1753, fn. 1).

It has been recognized that, for purposes of CEQA, "feasibility" encompasses "desirability," to the extent that the latter is based on a reasonable balancing of the relevant economic, environmental, social and technological factors. (*California Native Plant Society v. City of Santa Cruz* (2009) 177 Cal.App.4th 957, 1001.). This balancing is harmonized with CEQA's fundamental recognition that policy considerations may render alternatives impractical or undesirable (*Ibid*.; see also Public Resources Code, Section 21081; State CEQA Guidelines Section 15126.6(c), 15364).

5.2.3 ELIMINATION/REDUCTION OF SIGNIFICANT IMPACTS

Section 15126.6(b) of the State CEQA Guidelines states that "[b]ecause an EIR must identify ways to mitigate or avoid the significant effects that a project may have on the environment (Public Resources Code Section 21002.1), 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, even if these alternatives would impede to some degree the attainment of the project objectives, or would be more costly."

The Proposed Project and Alternative 1 evaluated in Sections 4.1 through 4.11 of this EIR result in a range of impacts. The alternatives evaluated later in this section have been developed in an effort to reduce and/or eliminate one or more significant impacts associated with the Proposed Project and/or Alternative 1. The Proposed Project and Alternative 1 would result in three residential units not currently in the 65 CNEL contour to be included in the 65 to 70 CNEL contour and therefore, identified as an incompatible land use. This is a significant and unavoidable impact.

5.3 ALTERNATIVES CONSIDERED BUT NOT CARRIED FORWARD

Section 15126.6(c) of the State CEQA Guidelines provides that an "EIR should also identify any alternatives that were considered by the Lead Agency but were rejected as infeasible during the scoping process and briefly explain the reasons underlying the Lead Agency's determination. . . Among the factors that may be used to eliminate alternatives from detailed consideration in an EIR are: (i) failure to meet most of the basic project objectives, (ii) infeasibility, or (iii) inability to avoid significant environmental impacts."

In furtherance of the disclosure objective, one alternative was considered but not carried forward, which is discussed in this Section.

5.3.1 HOTEL AND CONFERENCE CENTER ALTERNATIVE

In response to the Notice of Preparation ("NOP"), there was a request for the consideration of providing a world class hotel, conference facility, restaurants, and hospitality and media meeting rooms, all geared toward the general aviation pilot and corporate aircraft charter services. The request was that the listed facilities be in addition to the industry standard but high-end general aviation-type services, such as fuel, catering, transportation, and hangar and tie-down services.

Based on a preliminary evaluation, this alternative was found not to be feasible for a number of regulatory reasons. Three applicable federal laws govern the use of Airport property. The first two, the *Surplus Property Act* (49 *United States Code* [U.S.C.] § 47151 *et seq.*) and the *Federal Airport Act of 1946*, run with the property because shortly after World War II the Federal Government deeded the property to the County for the expressed purpose of operating a public airport. The third is the *Airport and Airway Improvement Act,* as amended, which provides restrictions on John Wayne Airport ("JWA" or "the Airport") associated with the County's acceptance of Federal Aviation Administration ("FAA") Airport Development Grants (these are commonly referred to as the Grant Assurances). Grant Assurances 19 Operation and Maintenance and 22 Economic Nondiscrimination do not allow non-aeronautical uses to replace aeronautical uses when there is aeronautical demand for the space. In general, the use of airport facilities for non-aeronautical use requires the expressed permission of the Secretary of Transportation. To apply for this permission the Airport must show that there is no aeronautical demand for the facilities. Given the constrained facilities at the Airport, no space is available at JWA where aeronautical use is not in demand.

The Orange County Ordinance also governs the operation of the Airport. Specifically, the County Ordinance Title 2- Public Facilities, Division 1 – Airports; Article 1 – Policy, Section 2-1-1 includes policies that regulate the operation of the Airport pursuant to federal and State laws. This alternative would be inconsistent with the following two policies:

(c) "To provide for the full range of on-base aeronautical support through private enterprise consistent with the need for the service and the availability of space and physical facilities"

(d) "To maintain and preserve all Airport facilities in a safe and secure condition; and to operate the Airport in conformance with the provisions of federally mandated security measures"

Physical constraints would also make implementation of this alternative infeasible. The limited size of the Airport would not allow sufficient separation of a hotel building from the runways to provide a hotel with the type of facility identified in the NOP comment. Part 77 height restrictions would significantly limit the number of stories of a hotel on Airport property. Additionally, parking (aircraft or vehicle) requirements for a hotel, conference center, and restaurant would be extremely difficult to accommodate on such a limited site. Property surrounding the Airport is outside the County's jurisdiction, in private ownership, and has been developed. Uses to the east of the Airport in the cities of Irvine and Newport Beach include hotels with many of the features that have been requested as part of this alternative. To the west in the city of Costa Mesa, the land adjacent to the Airport is developed as an industrial park. Freeways constrain the airfield area to the north and south.

Additionally, it should be noted that development of these non-aviation uses would further reduce the aviation uses that would be provided with the GAIP. As discussed in Section 3.7, Project Description, the Proposed Project and Alternative 1 would not accommodate the number of based aircraft currently located at JWA. Implementation of the hotel, conference center, and other requested facilities would require further displacement of general aviation facilities, which is inconsistent with GAIP Planning Assumptions, which was to strive to "Maintain, where possible, number and type of general aviation based aircraft facilities (hangars & tiedowns) comparable to existing."

In light of the information above, and in accordance with Section 15126.6(c) of the State CEQA Guidelines, this EIR does not give further consideration to this alternative. However, it should be noted, the Proposed Project and Alternative 1 do provide for a General Aviation Terminal to be constructed at one of the full service fixed base operator (FBO) locations. As noted in the Project Description, the General Aviation Terminal would be able to accommodate charter flights and would include provisions for office space, check-in areas, passenger lounge, flight planning, and facilities.

5.4 ALTERNATIVES FOR ANALYSIS

In accordance with Section 15126.6(a) of the State CEQA Guidelines, the discussion in this section of the EIR focuses on a reasonable range of alternatives. The analysis provides a comparison of the alternatives' varying environmental effects and their merits and/or disadvantages in relation to the Proposed Project and to each other; their feasibility and ability to achieve project objectives are also discussed.

In addition to the Proposed Project and Alternative 1, which are evaluated in Section 4 of this Program EIR, the following alternatives are analyzed in this section:

- **Alternative 2.** This alternative would provide two full service FBOs on the east side of the Airport (the Northeast FBO and the Southeast FBO). Alternative 2 was developed based on input from stakeholder meetings. Although the type of facilities proposed and the number of based aircraft are similar to the those identified for the Proposed Project, some general aviation leaseholders had expressed a desire to be on the east side of the Airport due to ease of access to the general aviation runway (20L/2R). From an operational perspective, having the full service FBOs on the east side minimizes the number of general aviation aircraft needing to cross the commercial runway (20R/2L).
- **Alternative 3.** The only improvements proposed with this alternative are the modifications to existing facilities needed to comply with FAA standards for airport design (i.e., to eliminate existing nonstandard conditions associated with the location of existing facilities proximate to the airfield runways and taxiways).
- **No Project Alternative.** No modifications to the existing facilities would be made.

The evaluation of these alternatives, using the same thresholds of significance identified in Sections 4.1 through 4.11, is provided below in Sections 5.4.1 through 5.4.3. The following technical studies were used to support the analysis in this section:

- The *John Wayne Airport General Aviation Improvement Program Air Quality Technical Report* prepared by Landrum & Brown and included in this Program EIR as Appendix E.
- The *John Wayne Airport General Aviation Improvement Program Greenhouse Gas Emissions Analysis Technical Report* prepared by Landrum & Brown and included in this Program EIR as Appendix G.
- The *John Wayne Airport General Aviation Improvement Program Noise Analysis Technical Report* prepared by Landrum & Brown and included in this Program EIR as Appendix H.

- The *General Aviation Improvement Program Traffic Impact Analysis* ("TIA") prepared for this Project by Austin Transportation Consulting ("ATC") (2018), which is provided as Appendix I to this Program EIR.

In accordance with Section 15126.6(a) of the State CEQA Guidelines, the Program EIR provides a comparison of the environmental effects and their merits and/or disadvantages of the alternative in relation to the Proposed Project and Alternative 1, as well as its ability to achieve the Project Objectives. To facilitate the readers' understanding, a series of tables have been provided that provide a comparison of the existing conditions (2016), unconstrained forecasts, and all of the alternatives.

As discussed in Section 3.5 of this Program EIR, the unconstrained forecasts take into consideration data on a variety of indicators, including but not limited to, pilot population, growth in student pilot population, shipment of general aviation aircraft, and projected demand. The study provides the general aviation demand forecasts for based aircraft, annual operations, daily and peak-hour operations, and international operations at the Airport (AECOM 2018a). The constrained forecasts allow the number of based aircraft for each type of aircraft to increase following the growth estimated from the unconstrained forecast until it reaches the Airport's maximum capacity. Once the number of based aircraft demand for each type of aircraft reaches the maximum capacity, the growth for the corresponding type of aircraft is constrained. Operations generated by based aircraft will be constrained because of limited aircraft parking spaces (i.e., hangar or tie-down) for different types of aircraft. Operations generated by transient aircraft reference the unconstrained forecast model. Tables 5-1 through 5-3 provide a comparison of the operational characteristics of the alternatives.

TABLE 5-1
COMPARISON OF ALTERNATIVES - JWA BASED AIRCRAFT
CAPACITY AND OPERATION FORECASTS BY AIRCRAFT TYPE

Year	Fixed Wing Piston[a]		Fixed Wing Turbine		Helicopter	Total Based Aircraft
	Single Engine	Multi-Engine	Turboprop	Turbo Jet		
Capacity						
2016	440	48	26	65	17	**596**
Existing Conditions (Operations in 2016)						
2016	339	35	26	65	17	**482**
Unconstrained Forecasts						
2026	360	37	32	89	22	**540**
Proposed Project						
Capacity[b]	194	41	30	72	17	**354**
2026	198	37	30	72	17	**354**
Alternative 1						
Capacity[b]	196	41	26	76	17	**356**
2026	200	37	26	76	17	**356**
Alternative 2						
Capacity[b]	211	41	22	70	17	**361**
2026	215	37	22	70	17	**361**
Alternative 3						
Capacity[c]	413	48	19	58	16	**554**
2026	360	37	19	58	16	**490**
No Project						
Capacity[d]	440	48	26	65	17	**596**
2026	360	37	26	65	17	**505**

Note: The fleet mix distributions may not match the sum totals due to rounding. The type and size of aircraft parked at an FBO facility may vary based on demand and can change frequently; therefore, the actual number and type of aircraft at the Airport may differ from what is shown in this table.

[a] The based aircraft totals for single engine include one glider.

[b] The evaluation of potential impacts assumes four single engine piston aircraft would park in vacant spaces that could accommodate multi-engine and fill up the capacity.

[c] The theoretical capacity of Alternative 3 is based on the existing facilities, less those that would be removed to due to the modifications of non-standard conditions. For the evaluation of potential impacts the forecasts reflect the fleet mix of the aircraft that would be reasonably accommodated at the Airport based on the unconstrained demand.

[d] The theoretical capacity of the No Project Alternative would be the same as the Baseline (2016); however, for the evaluation of potential impacts the 2026 forecasts reflect the fleet mix of the aircraft that would be reasonably accommodated at the Airport.

Source: AECOM 2018b (Appendix D to this Program EIR)

TABLE 5-2
COMPARISON OF ALTERNATIVES
JWA GENERAL AVIATION AND AIR TAXI OPERATIONS FORECAST

Year	Air Taxi	General Aviation		Total Operations[a]
		Itinerant	Local	
Existing Conditions				
2016	15,400	90,900	86,500	**192,800**
Unconstrained Baseline Scenario				
2026	20,200	96,100	91,500	**207,800**
Proposed Project				
2026	19,100	87,500	61,300	**167,900**
Alternative 1				
2026	19,000	87,700	61,900	**168,600**
Alternative 2				
2026	18,600	88,000	62,800	**169,400**
Alternative 3				
2026	18,000	94,400	85,200	**197,600**
No Project (constrained)				
2026	18,600	95,000	87,400	**201,000**

Note: Numbers may not add up due to rounding.

[a] An operation is defined as either a takeoff or landing, each counting as one operation.

Source: AECOM 2018b (Appendix D to this Program EIR)

TABLE 5-3
JWA FORECAST OPERATIONS BY AIRCRAFT ENGINE TYPE
COMPARISON OF ALTERNATIVES

Year	Piston	Turbine	Jet	Helicopter/Other	Total Operations[a]
Existing Conditions					
2016	147,300	9,800	31,800	3,900	**192,800**
Unconstrained Baseline Scenario					
2026	147,100	12,000	43,600	5,100	**207,800**
Proposed Project					
2026	111,000	11,700	40,400	4,800	**167,900**
Alternative 1					
2026	111,600	10,800	41,400	4,800	**168,600**
Alternative 2					
2026	114,700	10,000	39,900	4,800	**169,400**
Alternative 3					
2026	147,000	9,500	36,400	4,700	**197,600**
No Project (Constrained Forecasts)					
2026	147,000	10,900	38,300	4,800	**201,000**

Note: Numbers may not add up due to rounding.

[a] An operation is defined as either a takeoff or landing, each counting as one operation.

Source: AECOM 2018b (Appendix D to this Program EIR)

The level of environmental impact and ability to meet Project Objectives is considered as part of the identification of the environmentally superior alternative, which is discussed in Section 5.5. Included in Section 5.5, Table 5-24 provides a brief comparison of the impacts of each of the alternatives, compared to the Proposed Project and Table 5-25 provides a matrix that compares each alternative's ability to meet the Project Objectives.

5.4.1 ALTERNATIVE 2

The concept of an alternative with the full service FBOs located on the east side of the Airport was developed as part of the outreach efforts conducted by Airport staff with the general aviation tenants and stakeholders to identify issues the general aviation community would like addressed and priorities for making improvements (see Section 2.4 for a discussion of the outreach effort).

Alternative 2 proposes development of a Full Service Northeast FBO and a Full Service Southeast FBO. This alternative minimizes the extent that general aviation aircraft have to cross Runway 20R/2L to access the shorter general aviation runway (Runway 20L/2R). The total aircraft storage capacity for all the facilities included under this alternative is approximately 361 based aircraft. Alternative 2 accommodates seven more general aviation aircraft than the Proposed Project and five more aircraft than Alternative 1.[1]Table 5-4 provides a comparison of the type of

[1] As shown in Table 5-1 compared to the Proposed Project and Alternative 1 the increase is entirely associated with an increase in the number spaces allocated for single-engine fixed-wing piston aircraft. It accommodates fewer fixed-wing turbine engine aircraft.

facilities currently (2016) available at the Airport and the facilities that would be available under Alternative 2. When compared to Existing Conditions capacity, Alternative 2 reduces aircraft storage capacity by approximately 235 spaces (nearly 39 percent) and would accommodate 121 fewer (nearly 25 percent) general aviation aircraft than currently using the Airport.[2]

TABLE 5-4
FACILITIES COMPARISON OF EXISTING CONDITIONS (2016)
AND ALTERNATIVE 2

Facility	Aircraft Parking Spaces			Percentage Change (+/-)[a]	
	Existing Capacity	Currently Used	Alternative 2	Compared to Capacity	Compared to Currently Used
Tie-Down Apron	302	222	179	-123	-43
T-Hangars	111	111	72	-39	-39
Box Hangars	45	45	24	-21	-21
FBO/Community Hangars	23	23	47	24	24
Shade Structures	66	66	0	-66	-66
FBO Apron Spaces	49	15	39	-10	24
Total	**596**	**482**	**361**	**-235**	**-121**

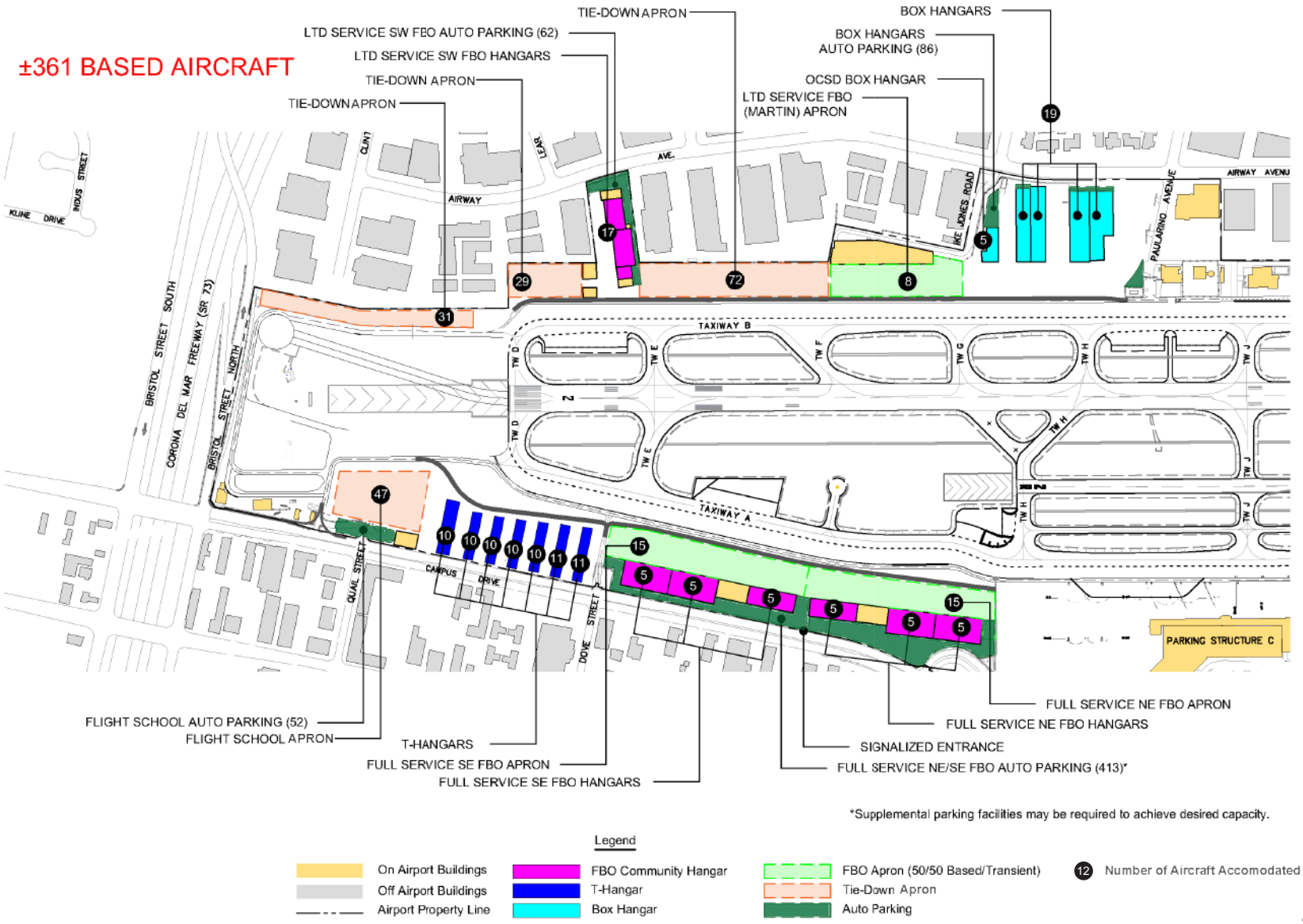
[a] Numbers in red indicate a loss or deficiency.

Source: AECOM 2018b (Appendix D to this Program EIR)

Exhibit 5-1 depicts the conceptual layout of facilities for Alternative 2. Similar to the Proposed Project, the nature of the improvements has been identified in Section 3.6.1. The facilities included with this alternative include:

- Two full service FBOs, shown on the conceptual layout as a Full Service Northeast FBO, and a Full Service Southeast FBO, would be similar to the eastside full service FBOs in Alternative 1. Both the Full Service Northeast FBO and the Full Service Southeast FBO would be located immediately south of Campus Drive and Airport Way intersection. Both full service FBOs would include three community hangars with capacity to accommodate 15 aircraft at each of the full service FBOs. The apron area at each FBO would also accommodate 15 based aircraft. A three-level vehicle parking structure would provide shared vehicle parking with an approximate total of 413 vehicle parking spaces (surface and structure). There may be the opportunity to connect the full service FBOs to the hydrant fueling system, which would reduce the number of truck trips internal to the Airport. The point of entry to the FBO would be modified to be located off Campus Drive between the Airport Way and Dove Street intersection. At the time improvements are proposed, the County will coordinate with the City of Newport Beach to allow left turns from Campus Drive to the FBO; however, this intersection would allow only right-turns out. This area is currently used for a full service FBO and T-hangars.

[2] As with the Proposed Project and Alternative 1, transient aircraft parking areas are excluded from the capacity analysis, which is based aircraft parking spaces. The number shown for each FBO apron area depicted in Exhibit 5-1 includes based aircraft only. For example, the Full Service Northeast FBO apron has capacity for 30 total aircraft. Assuming an even split between based and transient aircraft, 15 spaces are allocated for based aircraft.



Source: AECOM 2018

Conceptual Facilities Layout – Alternative 2

Exhibit 5-1

John Wayne Airport General Aviation Improvement Program

JOHN WAYNE AIRPORT ORANGE COUNTY

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- Seven rows of T-hangars with a combined capacity to accommodate 72 aircraft would be located immediately south of the Full Service Southeast FBO. Access to these facilities would be through the secured Dove Street entrance off Campus Drive. This area is currently used for T-hangars and a tie-down area.
- The flight school facilities would be located in the southeastern portion of the Airport and would have access off Campus Drive. The flight school apron would have capacity for 47 aircraft tie-downs. This area is currently used for flight schools and is part of one of the full service FBO's lease areas.
- The existing Campus Drive and Quail Street entrance to the Airport would undergo minor modifications. The signalized intersection at Campus Drive and Quail Street would provide access to the flight school vehicle parking area. However, the curved entrance through the vehicle parking lot, which is the only entrance for trucks accessing the general aviation fuel farm, would be redesigned. The current right-turn out exit would be redesigned to allow both ingress and egress (right-in and right-out) to the fuel farm entry point. The redesign would require the security entrance gate to be moved farther from Campus Drive. The curb line would remain the same as existing conditions.
- A total of 132 tie-down facilities would be located along the west side of the Airport in areas west of Perimeter Road (the on-Airport service vehicle road) and south of the limited service Southwest FBO, as well as in the area north of the Limited Service Southwest FBO and south of the existing Martin Aviation (limited service FBO and Lyon Air Museum). These areas are currently used as tie-down areas.
- The self-service fueling station would be located immediately adjacent to the tie-down area and the area currently being used for a limited service Southwest FBO.
- The Limited Service Southwest FBO would be located immediately adjacent to the self-serve fueling station. This portion of the Airport extends to Airway Avenue, which provides a secured entry gate for access from the roadway. Facilities would include a community hangar that would accommodate 17 based aircraft and parking for 62 vehicles.
- A hangar facility designated for the Orange County Sheriff's Department ("OCSD") is proposed north of the existing Limited Service FBO Martin Aviation. The hangar would accommodate five based aircraft with sufficient apron area for additional aircraft, if necessary. Approximately 20 vehicle parking spaces would also be provided.
- Four large box hangars, able to accommodate 19 aircraft would be located north of the OCSD facility and south of Paularino Avenue.
- The Vehicle Service Road (also known as Perimeter Road) along Taxiway A would be relocated to comply with FAA clearance standard dimensions for Group V aircraft.[3]

[3] The FAA defines several different types of aircraft, which have different applicable regulations. One type of grouping is by aircraft size according to the wingspan of the aircraft. This is called the Aircraft Design Group (ADG) and determines the width requirements of runways and taxiways. Group V aircraft are those with a wingspan between 171 feet up to but not including 214 feet. The runway width for a Group V aircraft is a minimum of 150 feet (Condell Park 2017).

Phasing

As with the Proposed Project and Alternative 1, construction phasing would require temporary relocation of uses at the Airport. A phasing concept has been developed for Alternative 2 which identifies 14 primary construction phases (see Exhibits 5-2a and 5-2b). As with the Proposed Project and Alternative 1, the construction phasing is anticipated to take slightly more than seven years and is projected to start in 2019 and be completed in 2026. Over this period, the total general aviation capacity at the Airport would gradually be reduced (i.e., the reduction from the 482 aircraft currently based at the Airport to the 361 positions identified with Alternative 2), and some aircraft would need to permanently relocate to other airports.

Aviation Forecasts for Alternative 2

The aviation forecasts for Alternative 2 are provided in Tables 5-5 through 5-7. Table 5-5 identifies the 2016 baseline information and the projected 2026 forecasts by type of aircraft; Table 5-6 identifies the number of general aviation operations; and Table 5-7 provides the operations forecast by aircraft engine type. As shown in the tables, the growth of turboprop and turbo jet aircraft would reach capacity in the near term, with no growth for helicopters. Although multi-engine piston aircraft would have capacity to grow in the long term under Alternative 2 based on the capacity analysis, the four vacant spaces for multi-engine piston aircraft would likely be occupied by existing single engine based aircraft. It is anticipated that all of the 361 based aircraft parking spaces (i.e., hangar and tie-down) would be fully occupied by opening day in 2026 (AECOM 2018b).

TABLE 5-5
JWA CONSTRAINED FORECAST BASED AIRCRAFT BY TYPE – ALTERNATIVE 2

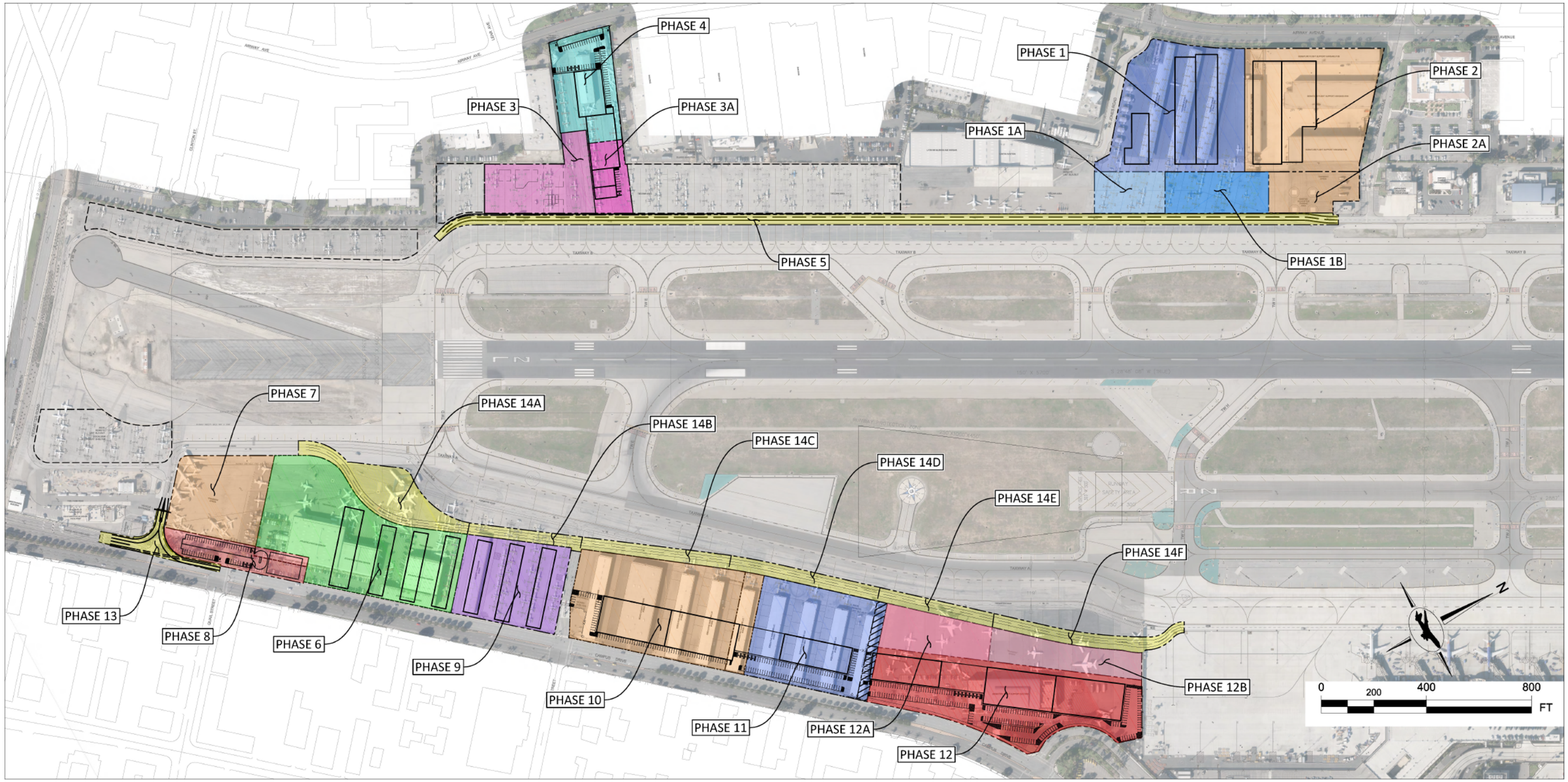
Year	Fixed Wing Piston[a]		Fixed Wing Turbine		Helicopter	Total Based Aircraft
	Single Engine	Multi-Engine	Turboprop	Turbo Jet		
2016	339	35	26	65	17	**482**
2026[b]	215	37	22	70	17	**361**

Note: The fleet mix distributions may not match the sum totals due to rounding. The type and size of aircraft parked at an FBO facility may vary based on demand and can change frequently; therefore, the actual number and type of aircraft at the Airport may differ from what is shown in this table.

[a] The based aircraft totals for single engine include one glider.

[b] Assume four existing single engine piston aircraft would park at the vacant spaces for multi-engine piston aircraft and fill up capacity.

Source: AECOM 2018b (Appendix D to this Program EIR)



Source: AECOM 2018

Phasing Concept – Alternative 2

Exhibit 5-2a

John Wayne Airport General Aviation Improvement Program

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PHASING SCHEDULE – ALTERNATIVE 2

Phase	Description
1	Demolish tie downs and shade structures on the west side. Construct new Orange County Sheriff's Department (OCSD) box hangar, two new box hangars, the adjacent section of apron, and a portion of landside improvements.
2	Demolish 4 Full Service Northwest FBO box hangars (includes OCSD hangar), the transient apron, and helicopter parking at the Full Service Northwest FBO. Construct two new box hangars, remaining section of apron and remainder of landside improvements.
3	Demolish tie downs by the Limited Service Southwest FBO. Construct self-serve fueling facility, oil disposal, wash rack, Limited Service Southwest FBO offices and portion of Limited Service Southwest FBO hangars.
4	Demolish tie downs & hangars at the Limited Service Southwest FBO. Construct remainder of Limited Service Southwest FBO hangars and landside improvements.
5	Remove existing west side perimeter road. Construct new west side perimeter road.
6	Demolish Full Service Southeast FBO hangars/offices, and portion of landside parking. Construct 4 new T-hangars and portion of new flight school apron.
7	Construct remaining portion of new flight school apron, located on the east side.
8	Demolish remainder of Full Service Southeast FBO landside parking. Construct new flight school building and new landside auto parking.
9	Demolish east side tie downs and County T-hangar. Construct 3 new T-hangars.
10	Demolish 5 T-hangars on the east side and adjacent tie downs. Construct 2 new box hangars and adjacent apron for the Full Service Southeast FBO
11	Demolish 4 T-hangars and adjacent tie downs on the east side. Construct 1 new hangar, building, and adjacent apron for the Full Service Southeast FBO and the shared auto parking for the Full Service Southeast and Full Service Northeast FBOs.
12	Demolish Full Service Northeast FBO hangar, apron area, and landside auto parking. Construct 3 hangars, apron, and associated building for the Full Service Northeast FBO. Construct the remainder of the shared auto parking for the Full Service Southeast and Full Service Northeast FBOs and signalized entrance
13	Construct new Quail Street entry road improvement
14	Demolish tie downs in the vicinity of the existing flight school and the east side perimeter road. Construct new perimeter road.

TABLE 5-6
JWA CONSTRAINED FORECAST GENERAL AVIATION AND AIR TAXI OPERATIONS – ALTERNATIVE 2

Year	Air Taxi	General Aviation		Total Operations[a]
		Itinerant	Local	
2016	15,400	90,900	86,500	**192,800**
2026	18,600	88,000	62,800	**169,400**

Note: Numbers may not add up due to rounding.

[a] An operation is defined as either a takeoff or landing, each counting as one operation.

Source: AECOM 2018b (Appendix D to this Program EIR)

TABLE 5-7
JWA CONSTRAINED FORECAST OPERATIONS BY AIRCRAFT ENGINE TYPE – ALTERNATIVE 2

Year	Piston	Turbine	Jet	Helicopter/Other	Total Operations[a]
2016	147,300	9,800	31,800	3,900	**192,800**
2026	114,700	10,000	39,900	4,800	**169,400**

Note: Numbers may not add up due to rounding.

[a] An operation is defined as either a takeoff or landing, each counting as one operation.

Source: AECOM 2018b (Appendix D to this Program EIR)

Impact Evaluation

Aesthetics

Short-Term Construction Impacts

Similar to the Proposed Project and Alternative 1, demolition and construction phases of Alternative 2 would present views of demolition activities, building material, and stockpiles and equipment staging areas that would be generally visible from outside the construction site boundaries. During construction, which would occur over 14 phases over six years (2019 to 2024), views of demolition and construction activities at the site would be scattered and incremental and would be visible only to viewers in the immediate vicinity. The viewpoints would be the same for Alternative 2 as those discussed for the Proposed Project and Alternative 1. Alternative 2 would include the Full Service Northeast FBO and the Full Service Southeast FBO and four large box hangars located north of the OCSD facility and south of Paularino Avenue on the western border. As with the Proposed Project and Alternative 1, screened security fencing would be provided around the construction sites and staging areas that would block the ground level views of individuals at the site boundaries. Given the industrial character of the Airport, construction activities would not substantially degrade the visual character of the site, and construction activities would be less than significant under Threshold 4.1-1.

Similar to the impacts of the Proposed Project and Alternative 1, Alternative 2 would include construction activities that would occur during some nighttime hours and would result in temporary lighting that would be limited to specific construction sites during each phase. Consistent with the Proposed Project and Alternative 1, Alternative 2 would have to comply with Federal Aviation Regulations ("FAR") Part 77 regulations (RR AES-1) that would establish parameters regarding lighting. Although intended to provide for aviation safety, this provision would also minimize the potential for intrusive lighting both during construction and operation. Due to the lack of sensitive receptors adjacent to the Airport, lighting impacts during construction activities would be less than significant under Threshold 4.1-2. The construction elements of the cumulative projects are expected to be completed prior to the initiation of construction on GAIP improvements. Therefore, as with the Proposed Project and Alternative 1, no short-term cumulative aesthetic impacts are anticipated with Alternative 2.

Long-Term Operational Impacts

Similar to the Proposed Project and Alternative 1, implementation of Alternative 2 would not result in substantial changes to the visual character of the Airport. As with the Proposed Project and Alternative 1, the area dedicated to general aviation would remain as general aviation; and older facilities would be replaced with newer facilities that are generally consistent in nature. Compared to existing conditions, as well as to the Proposed Project and Alternative 1, the development on the west side would be slightly less intense because Alternative 2 does not propose a full service FBO on the west side. The current shade structures and box hangars located south of Paularino Avenue would be replaced with box hangars and a facility for the OCSD. Further to the south on the west side, Alternative 2 proposes the same improvements for the Limited Service Southwest FBO. Although the development would be slightly less intense, the visual character of Alternative 2 would not be substantially different than that associated with the Proposed Project and Alternative 1. No key public views would be impaired, and the overall character of the improvements would be consistent with the existing character of the Airport. Alternative 2 would not result in a significant change to the visual character or quality of the site and its surroundings.

Similar to Alterative 1, Alternative 2 would result in some intensification on the east side of the Airport with the development of two full service FBOs (the Full Service Northeast FBO and the Full Service Southeast FBO) but in closer proximity to each other, and would change the visual intensity of the Airport development along Campus Drive. However, the overall character of the development would not be substantially different than what currently exists at the Airport. Consistent with the Proposed Project and Alternative 1, design plans would be developed as improvements are implemented; and proposed structures would need to comply with FAR Part 77 regulations (RR AES-1) in terms of building heights and lighting. Therefore, the impact would be less than significant under Threshold 4.1-1.

Similar to the impacts of the Proposed Project and Alternative 1, Alternative 2 would result in the replacement of existing light sources on site and potential changes in lighting levels in different areas of the Airport as different facilities are constructed at different locations. Compliance with RR AES-1 would regulate the type of building materials to avoid potential glare from buildings. As with the Proposed Project and Alternative 1, Alternative 2 would be developed in compliance with these regulations; the sources and intensity of lighting would be similar to existing lighting and would limit the creation of new sources of substantial light or glare that

would result in significant visual impacts. Therefore, the impact would be less than significant under Threshold 4.1-2.

Similar to the Proposed Project and Alternative 1, the Wickland Pipeline Project would be the only cumulative project that would alter the existing views at the Airport because it would introduce new facilities to the Airport (i.e., two new fuel tanks). The other cumulative projects (i.e., the Paularino Gate Relocation Project and the rehabilitation of Taxiway "B") would not substantially change views or the visual character of the Airport. No physical improvements are associated with the 2014 Settlement Agreement Amendment. The combined projects (i.e., Wickland Pipeline Project and the Alternative 2 improvements) would result in an intensification of development on the Airport. However, both the GAIP improvements, including those proposed under Alternative 2, and the Wickland Pipeline project would be consistent with the visual character of the Airport. The regulatory requirements pertaining to heights, lighting, and building materials for GAIP improvements (including Alternative 2) are also applicable to the Wickland Pipeline project; thereby reducing the potential for cumulative impacts. Therefore, long-term cumulative aesthetic impacts would be less than significant.

Air Quality

Short-Term Construction Impacts

Construction impacts associated with Alternative 2 would be similar to the Proposed Project because both scenarios would provide for two full service FBOs. As shown in Table 4.2-6 (provided in Section 4.2, Air Quality), prior to mitigation, the Proposed Project (and Alternative 1, see Table 4.2-10) would exceed the SCAQMD's threshold for nitrogen oxides ("NOx") during construction. With implementation of Mitigation Measure (MM) AQ-1 construction-related NO_x emissions of both the Proposed Project and Alternative 1 would be less than significant. Given the similarities in the construction elements between the Proposed Project and Alternative 2, the construction air emissions for Alternative 2 would also be less than significant with implementation of MM AQ-2. Additionally, minimization measure ("MN") MN AQ-1, which requires the architectural coatings applied to the proposed East and West Access Roads be low volatile organic compound ("VOC") coatings (less than 50 grams of VOC emissions per liter of paint), would also apply to Alternative 2.

Construction of the cumulative projects that would include physical improvements (Paularino Gate Relocation, Taxiway B rehabilitation, and the Wickland Pipeline Project) would not be under construction at the same time as the GAIP improvements, including the Alternative 2 improvements; therefore, there would not be an instance where the combined construction emissions would occur and potentially exceed the construction emissions thresholds. Therefore, no impacts from cumulative construction emissions are anticipated.

Long-Term Operational Impacts

From an operational air quality perspective, Alternative 2 would be similar to Alternative 1. It allows slightly more aircraft to be based at the Airport and would have similar number of operations (see Tables 5-1 and 5-2, respectively for a comparison of the number of aircraft and operations for each alternative). Although the emissions of criteria pollutants were not specifically quantified for Alternative 2, because the operational assumptions are similar to

Alternative 1, it is anticipated that operational emissions due to aircraft, ground support equipment ("GSE"), and auxiliary power unit ("APU") usage would not exceed the SCAQMD thresholds. As shown in Table 4.2-13, the total net operational emissions for Alternative 1 are substantially below both the SCAQMD mass daily emissions thresholds and the SCAQMD localized significance threshold. Similar data for the Proposed Project is presented in Table 4.2-9. Although the operational emissions associated with the Proposed Project and Alternative 1 would be less than significant, Section 4.2.9 identified minimization measures that would further reduce emissions associated with operations. MN AQ-2, which requires the use of Zero Emission Vehicle ("ZEV") GSE for 90 percent or greater of the GSE operating hours, would also be applicable to Alternative 2. Therefore, based on this comparison, Alternative 2 would not violate any air quality standard or contribute substantially to an existing or projected air quality violation. Air quality impacts would be less than significant under Threshold 4.2-2.

Similar to the Proposed Project and Alternative 1, Alternative 2 would be consistent with the Air Quality Management Plan ("AQMP"). As discussed in Section 4.2, the 2016 AQMP recognizes that some sources – referred to as "federally controlled sources" in the AQMP – are under the jurisdiction of the U.S. Environmental Protection Agency ("EPA"); the 2016 AQMP explicitly recognizes aircraft as a federally controlled source (see, e.g., 2016 AQMP, Table 4-22). JWA staff participated in SCAG's Aviation Technical Advisory Committee and coordinated with SCAQMD to ensure that aircraft operation data specific to the Airport (such as the number of operations, fleet mix and taxi times) were accounted for throughout the forecasted planning period for both the 2016-2040 Regional Transportation Plan/Sustainable Communities Strategy ("RTP/SCS") and AQMP. JWA staff also provided SCAQMD with information regarding estimated construction-related emissions at the Airport during the subject planning period, including those associated with the development of any GAIP-facilitated facilities. Although there are small variations in the fleet assumptions and number of operations, these small variations between the Proposed Project, Alternative 1, and Alternative 2 would be within the baseline assumptions used in the AQMP for aviation activities at JWA. Therefore, as a result of this inter-agency coordination, emissions associated with the GAIP have been planned for and accounted for in the 2016 AQMP and impacts would be a less than significant under Threshold 4.2-1.

Alternative 2 would have similar cumulative impacts as the Proposed Project and Alternative 1. Although significant air quality impacts were associated with the 2014 Settlement Agreement Amendment, which has been identified as a cumulative project, the GAIP (Proposed Project and Alternative 1) would not contribute to a considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard.[4] As noted above, neither the Proposed Project nor Alternative 1 would exceed SCAQMD's thresholds. Pursuant to SCAQMD guidance, projects that do not exceed the project-specific thresholds are generally not considered cumulatively significant. Additionally, the GAIP is consistent with the both the 2016-2040 RTP/SCS and AQMP; therefore, neither the Proposed Project nor Alternative 1 would result in a cumulatively considerable increase. Given the operational similarities of Alternative 2 to Alternative 1, impacts of Alternative 2 would also be less than significant under Threshold 4.2-3.

[4] When approving the 2014 Settlement Agreement Amendment and certifying Final EIR 617, the Board of Supervisors adopted Findings of Fact and a Statement of Overriding Considerations, which included a finding pertaining to air quality impacts.

As noted above, the fleet characteristics and number of flights would be similar to, although slightly greater than Alternative 1 (see Table 5-2). Therefore, the potential for Alternative 2 to expose sensitive receptors to substantial pollutant concentrations would be similar. The analysis provided in Section 4.2, under threshold 4.2-4, utilized the evaluation of toxic air contaminants ("TAC") prepared for Final EIR 617. Alternative 2 would result in a substantially smaller incremental increase in air pollutant emissions than the project studied in Final EIR 617. Thus, it is estimated that the TAC emissions would be lower in a similar proportion for Alternative 2 since the TAC emissions are generally fractions of the VOC and PM emissions. Based on this analysis, although the emissions of criteria pollutants, and therefore, TAC, would be slightly greater than the Proposed Project and Alternative 1, Alternative 2 would not expose sensitive receptors to substantial pollutant concentrations. Similar to the Proposed Project and Alternative 1, the impacts associated with Alternative 2 under Threshold 4.2-4 would be less than significant.

Cultural and Scientific Resources

The area to be developed and the nature of the improvements associated with Alternative 2 are the same as with the Proposed Project and Alternative 1. Therefore, the potential impacts on cultural and scientific resources would be same. Limited amounts of archaeological resources have been identified in the vicinity of the Airport; however, there is always the possibility that undiscovered intact archaeological deposits may be present below the surface in native sediments and may be subject to direct impact during construction activities. Paleontological resources have a similar potential to be present. As with the Proposed Project and Alternative 1, implementation of SC CULT-1 and SC CULT-2, which require grading observation by an archaeologist and paleontologist, would reduce the impacts of Alternative 2 on archaeological and paleontological resources to less than significant. Although not expected, construction activities would also have the potential to disturb human remains. If human remains are encountered during grading activities, implementation of RR CULT-1 would reduce potential impacts to human remains to a less than significant level. Therefore, impacts to archaeological, paleontological, and human remains would be less than significant under Thresholds 4.3-1 through 4.3-3, respectively. No historic resources were identified in the GAIP APE; therefore, no impacts under Threshold 4.3-4 would occur.

Similar to the Proposed Project and Alternative 1, archaeological and paleontological resources impacts are site-specific with regard to any given resource. Impacts that may be considered cumulative simply relate to the loss of cultural resources in general over time throughout the region. None of the cumulative projects involves substantial grading activities. Due to the shallow depth of excavation, the likelihood of disturbing unknown cultural resources is low. Each cumulative development project is subject to similar resource protection requirements as the GAIP (including Alternative 2). Therefore, cumulative impacts to archaeological and paleontological resources is less than significant.

Greenhouse Gas Emissions

As noted above, the operational characteristics (number of operations and fleet mix) for Alternative 2 would be similar, although have slightly more operations than Alternative 1. Although the Proposed Project and Alternative 1 would generate greenhouse gas ("GHG") emissions beyond those identified for the Baseline (2016) the net emissions would be

substantially below the SCAQMD threshold for industrial uses (i.e., 10,000, annual $MTCO_2e$) (refer to Table 4.4-5 for the Proposed Project and Table 4.4-8 for Alternative 1 for the quantified net emissions). Regulatory Requirements RR GHG-1 and RR GHG-2, which require compliance with the Title 24 Energy Efficiency Standards and with the California Green Building Standards ("CALGreen") Code, respectively, would apply to Alternative 2. These requirements would serve to reduce GHG emissions. In addition, implementation of MN GHG-1, MM AQ-1, MN AQ-1, and MN AQ-2 would also further reduce GHG emissions. Therefore, impacts of Alternative 2 would be less than significant under Threshold 4.4-1. It should also be noted, that GHG impacts are considered exclusively cumulative impacts; there are no non-cumulative GHG emission impacts because climate change is a global phenomenon. Alternative 2 would not result in a cumulatively considerable impact associated with estimated GHG emissions as the increment of GHG emissions attributable to implementation of Alternative 2 would be below the SCAQMD's significance threshold for GHG emissions.

Similar to the Proposed Project and Alternative 1, Alternative 2 would implement applicable emissions-reducing strategies identified in CARB's Mobile Source Strategy and 2017 Scoping Plan, to the extent required by law. Additionally, MN GHG-1 requires GAIP-facilitated development and uses, to comply with applicable provisions in JWA's Climate Action Plan ("CAP"). Therefore, this minimization measure would be applicable to Alternative 2. In light of the above information, Alternative 2 would not conflict with any applicable plan, policy or regulation established for reducing GHG emissions impacts and impacts would be less than significant under Threshold 4.4-2.

Hazards and Hazardous Materials

Short-Term Construction Impacts

As with the Proposed Project and Alternative 1, Alternative 2 would involve the use, storage, and handling of hazardous and non-hazardous materials as well as the generation of hazardous waste. Alternative 2 proposes a different mix and configuration of facilities than the Proposed Project and Alternative 1, specifically, development of two full service FBOs (the Full Service Northeast FBO and the Full Service Southeast FBO). However, the overall nature of the improvements and subsequent use of those facilities would be similar. The same short-term demolition and construction impacts related to hazardous materials such as asbestos-containing materials and lead-based paint, as well as generation of hazardous waste would occur under this Alternative as with the Proposed Project and Alternative 1. Compliance with RR HAZ-1 and RR HAZ-2 would be required for all demolition and construction activities.

The Hazardous Materials Survey Reports prepared for the facilities indicated further remediation requirements prior to demolition or construction activities at the facilities in relation to asbestos-containing materials ("ACM") and lead-based paint ("LBP"). Consistent with the Proposed Project and Alternative 1, Alternative 2 would comply with all abatement requirements related to ACM and LBP and would require that all hazardous materials used, or generated, would be regulated by existing federal, State, and local regulations. Consistent with the Proposed Project and Alternative 1, by adhering to regulatory requirements, application of Standard Conditions ("SCs"), and best management practices ("BMPs"), potential impacts associated with hazardous material use or generation due to demolition and construction of Alternative 2 would be maintained to below a level of significance under Thresholds 4.5-1 and 4.5-2.

No cumulative short-term hazardous material impacts are anticipated because based on the construction schedules, the cumulative projects are expected to be completed prior to the initiation of Alternative 2 improvements. Additionally, all the cumulative construction projects are required to comply with the regulatory requirements and County standard conditions pertaining to the handling and management of hazardous materials.

Long-Term Operational Impacts

The development of Alternative 2 would be held to the same requirements as the Proposed Project and Alternative 1. Compliance with RR HAZ-3 would be required for all fuel handling and transport activities. Adherence to Standard Conditions and BMPs and compliance with RR HAZ-3 would prevent or minimize impacts related to the routine transport, use, or disposal of hazardous materials or the release of hazardous materials. Therefore, impacts would be less than significant under Threshold 4.5-1.

As with the Proposed Project and Alternative 1, operation and maintenance activities associated with Alternative 2 would be consistent with the existing general aviation activities at JWA. Like the Proposed Project and Alternative 1, the replacement of the existing facilities with new facilities would not involve a substantial change in the quantities of hazardous materials. Consistent with the Proposed Project and Alternative 1, Alternative 2 would implement the current BMPs for handling of hazardous materials including fuel transport and, therefore, would cause no reasonably foreseeable significant hazard to the public or environment. Furthermore, Alternative 2 would comply with all adopted procedures; preventative measures; and applicable codes and permitting requirements related to the generation, handling, and transport of hazardous materials. Therefore, impacts would be less than significant under Threshold 4.5-2.

Like the Proposed Project and Alternative 1, access to the southeast general aviation fuel farm, for purposes of fuel deliveries, would not be modified as a result of Alterative 2. The nearest fuel transport route on public roads would remain approximately 0.5 mile from the nearest school facility, which exceeds the 0.25-mile limit identified in the threshold of significance. Internal to the Airport, fuel trucks accessing the proposed self-serve fueling station would be approximately 0.25 mile from the nearest school; however, as noted in Section 4.5, the FBO fuel trucks currently use the on-Airport Perimeter Road when delivering fuel to aircraft on the west side of the airfield. Therefore, impacts would be less than significant under Threshold 4.5-3.

The potential for long-term cumulative impacts would be the same as with the Proposed Project and Alternative 1. The Wickland Pipeline and Settlement Agreement Amendment projects would both increase the amount of fuel stored and/or used at the Airport. The adopted safety programs that are currently in operation and the current regulatory requirements are applicable to all the projects on JWA. The potential health risks are low because the fuel spills are contained and cleaned up and do not enter the Airport drainage system. Based on the above evaluation, the risk associated with cumulative hazardous materials and hazardous waste impacts would be less than significant for Alternative 2.

Land Use and Planning

Short-Term Construction Impacts

As with the Proposed Project and Alternative 1, the nearest sensitive land uses are located approximately 1,760 feet from the nearest proposed construction area under Alternative 2. Based on the height and distance of the existing intervening buildings located between the Airport and the nearest residences, temporary increases in noise levels due to construction activities would be attenuated below significant levels. Additionally, construction would be phased to minimize disruption to Airport operations and minimize the need to temporarily relocate based aircraft to other airports in the region. Therefore, short-term, temporary impacts associated with construction activities would be less than significant for Alternative 2 under Threshold 4.6-1.

Long-Term Operational Impacts

Similar to the Proposed Project and Alternative 1, Alternative 2 would result in a reduction in overall area for general aviation uses because the transient aircraft would no longer be allowed on the apron parking area located at the south end of the Airport. The correction of the current non-standard condition would result in the removal of 31 transient parking spaces in an Object Free Area ("OFA") for Runway 2L. As with the Proposed Project and Alternative 1, removal of the transient parking spaces in this area would not change the number of based aircraft at the Airport because it is used for transient parking only.

Alternative 2 would result in a reduction in the number of general aviation aircraft that could be based at the Airport. However, the total number of aircraft that could be accommodated would be greater than the capacity provided with the Proposed Project and Alternative 1. Table 5-8 shows the capacity for general aviation aircraft of Alternative 2 compared to the current capacity and the number of aircraft parking spaces currently being used at the Airport.

TABLE 5-8
NUMBER OF AIRCRAFT PARKING POSITIONS LOST
FOR ALTERNATIVE 2

Facility	Change in Aircraft Parking Spaces (+/-)	
	Compared to Capacity	Compared to Current Use
Tie-Down Apron	-123	-43
T-Hangars	-39	-39
Box Hangars (includes OCSD)	-21	-21
FBO/Community Hangars	24	24
Shade Structures	-66	-66
FBO Apron Spaces	-10	24
Total	**-235**	**-121**

[a] Numbers in red indicate a loss or deficiency.

Source: AECOM 2018b (Appendix D to this Program EIR)

The type of aircraft that would be most affected by the reduction in general aviation capacity would be the single-engine fixed-wing piston aircraft. Table 5-9 shows the projected change in the number of aircraft based on the facilities proposed by Alternative 2.

TABLE 5-9
CHANGE IN NUMBER OF BASED AIRCRAFT BY TYPE
ALTERNATIVE 2

Year	Fixed Wing Piston[a]		Fixed Wing Turbine		Helicopter	Total Based Aircraft
	Single Engine	Multi-Engine	Turboprop	Turbo Jet		
2016	339	35	26	65	17	**482**
2026[b]	215	37	22	70	17	**361**
Change in the Number of Aircraft Accommodated	-124	2	-4	5	0	**-121**

Note: The fleet mix distributions may not match the sum totals due to rounding. The type and size of aircraft parked at an FBO facility may vary based on demand and can change frequently; therefore, the actual number and type of aircraft at the Airport may differ from what is shown in this table.

[a] The based aircraft totals for single-engine include one glider.

[b] Assume four existing single-engine piston aircraft would park at the vacant spaces for multi-engine piston aircraft and fill up capacity.

Source: AECOM 2018b (Appendix D to this Program EIR)

Similar to the Proposed Project and Alternative 1, Alternative 2 would result in a reduction in the number general aviation aircraft that could be based at the Airport. The reduction would be 235 fewer aircraft parking spaces compared to current capacity and 121 fewer aircraft parking spaces compared to the number of currently used spaces at the Airport. Since the capacity would

be less than the current number of aircraft based at the Airport, with Alternative 2 there would be displaced aircraft that would need to be permanently based at a different airport in the region. Other airports in the region have capacity to accommodate the displaced aircraft. Although the displacement of aircraft may be perceived as adverse to the general aviation community, it would not be a significant environmental impact under Threshold 4.6-1 because capacity is available in the region. Potential impacts on regional air quality and traffic have been addressed under the respective topics in this section.

Alternative 2 would result in a similar increase in exposure of noise levels in excess of 65 Community Noise Equivalent Level ("CNEL") to nearby residences, when compared to the other alternatives. Alternative 2 is similar to Alternative 1, in that it is estimated approximately 12 additional residences would be included in the 65 CNEL; however, avigation easements are recorded for 9 of these units. Therefore, as with the other scenarios, there would be three additional residential units being exposed to noise levels in excess of 65 CNEL that have not received sound attenuation and no avigation easement is recorded. These residences are located within the policy implementation line used in the JWA Airport Environs Land Use Plan ("AELUP") for establishing the Airport Noise Impact Zones. Final EIR 508 certified in conjunction with the 1985 Master Plan included the Santa Ana Heights Acoustical Insulation Program ("AIP"), which offered sound attenuation for noise sensitive uses within the 1985 Master Plan 65 CNEL contour. These residences were included in this area covered by this program; however, one owner declined the offer and the remaining two did not respond after a genuine effort was made to offer insulation. Additionally, these residences were identified in Final EIR 617 as being potentially impacted in 2026. In conjunction with the adoption of the 2014 Settlement Agreement Amendment and certification of Final EIR 617, significant unavoidable land use compatibility impacts were identified because noise-sensitive uses would be located in an area exposed to future noise levels of 65 CNEL or greater. Although a mitigation measure was included in Final EIR 617, the Board of Supervisors made a finding addressing this issue because it could not be certain that the residences in question would qualify or implement the offered improvements. Exposure of these residences to noise levels in excess of 65 CNEL would result in incompatible land uses, which would be a significant, unavoidable land use compatibility impact under Threshold 4.6-1.

The noise contours for the 2026 cumulative scenarios are dominated by the commercial carrier operations, and these will occur independently of the GAIP. The GAIP would make no changes to the commercial operations approved as part of the 2014 Settlement Agreement Amendment. The cumulative land use impacts for Alternative 2 would also be similar to those of Alternative 1.

As shown in Table 4.6-11, in the cumulative scenario, Alternative 1 would have a slightly greater number of residential units in the 65 CNEL contour when compared to the Baseline (2016) (i.e., 274 units compared to 247 units); therefore, the cumulative impacts associated with Alternative 2 are expected to be similar. However, as with Alternative 1, the increase in the number of units in the greater than 65 CNEL contour is substantially associated with the increased commercial carrier operations (2014 Settlement Agreement Amendment). All but two of the units in the 65 CNEL contour are located within the AIP Area from the 1985 Master Plan. For the units in the AIP that have received sound attenuation, the land use impacts would be less than significant. For those residential units where the homeowner has been offered sound attenuation, but it has not been implemented, the noise exposure would potentially result in interior and exterior noise levels in excess of policies adopted to avoid or mitigate an environmental effect. For these units there would be a significant cumulative land use compatibility impact. For the two parcels that

are in the 65 CNEL contour that are outside of the AIP, only the periphery of these long parcels would be affected. Because the living areas on the two parcels would not be exposed to the projected cumulative 65 CNEL contour, there would not be a land use compatibility impact based on the Orange County General Plan standard.

There would also be two units in the greater than 70 CNEL contour. Both of these residences received sound insulation through the AIP and avigation easements have been recorded. Therefore, these two residences would not be identified as incompatible uses.

As discussed in Section 4.6,8, the significant cumulative land use impact has been identified in previous studies done for the Airport so it is not a new land use compatibility impact and noise attenuation programs (i.e., AIP and SIP) have been adopted. However, when the Board of Supervisors certified Final EIR 617 for the 2014 Settlement Agreement Amendment significant unavoidable land use compatibility impacts were identified because noise-sensitive uses would be located in an area exposed to future noise levels of 65 CNEL or greater. This significant cumulative impact would also be applicable to Alternative 2.

Noise

Short-Term Construction Impacts

Construction activities for Alternative 2 would be similar to the construction activities for the Proposed Project and Alternative 1. As discussed in Section 4.7, the nearest sensitive land uses to the GAIP construction is a new multi-story residential building on the south corner of Baker Street and SR-55. These residences are located about 1,760 feet from the nearest section of the construction zone. Existing commercial buildings are located between the Airport and the residential buildings, which provide attenuation to the construction noise. Based on this distance and the height of the intervening buildings, the worst-case mitigated peak (L_{max}) construction noise levels would be in the 44- to 59-dBA range at those residences on the east side of SR-55 for very short periods. Impacts for Alternative 2 would be similar to the Proposed Project and Alternative 1 and less than significant.

Long-Term Operational Impacts

From a noise perspective, the location of the facilities has limited implications. The noise is associated with number of operations and the general aviation fleet mix. A review of Table 5-2 shows that Alternative 2 would have incrementally more annual operations than the Proposed Project and Alternative 1 (167,900 for the Proposed Project compared to 168,600 for Alternative 1 and 169,400 for Alternative 2). This is a reduction of approximately 12.1 percent when compared to the Baseline (2016), and an increase of 0.9 percent compared to the Proposed Project, and a 0.5 percent increase when compared to Alternative 1. As shown in Table 5-3, the difference in the number of operations would predominately be associated with piston engine aircraft. There is a slight decrease in the number of turbine and jets operations with Alternative 2 compared to both the Proposed Project and Alternative 1. However, there would be an increase in the number of turbine and jets operations when compared to the Baseline (2016) operations.

Table 4.7-7, provided in Section 4.7, Noise, presents an assessment of the change in noise values compared to baseline conditions that would be attributable to the Proposed Project and Alternative 1 assuming the implementation of the GAIP improvements and change in fleet mix

and operations. This analysis shows that none of the increases at the Noise Monitoring Stations ("NMS") would result in a significant impact. See Section 4.7 for a full discussion of the noise standards used for identifying a significant noise impact; however, the most relevant standard is a noise increase of 1.5 CNEL or more at a sensitive receptor where the existing exposure is 65 CNEL or above. Only the close-in NMS 1S, 2S, 3S located in the Santa Ana Heights community in the City of Newport Beach and NMS 8N located in the City of Irvine show noise levels above 65 CNEL for any case. However, it should be noted that NMS 8N is located in a commercial area with no nearby residences. Neither the Proposed Project, Alternative 1, nor the No Project Alternative would result in an increase near 1.5 CNEL (refer to Table 4.7-8 provided in Section 4.7). As discussed in Section 4.7, the change in general aviation operations from the Proposed Project or Alternative 1 would have a negligible impact on the CNEL noise contours. Given the similarity in fleet mix and number of operations, noise impacts associated with Alternative 2 would also be less than significant.

Alternative 2 does provide for construction of new office space and a flight school, which would be required to meet the interior noise criteria as specified in the Noise Element and Land Use/Noise Compatibility Manual. This requirement is contained in SC NOI-1, which would be applicable to this alternative.

Similar to the aviation noise, the changes in automobile traffic patterns caused by Alternative 2 would be limited. As shown in Table 5-10 (provided below under the discussion of Transportation/Traffic), the overall number of trips associated with Alternative 2 would be less than the Baseline (2016) (i.e., 1,627 average daily trips ["ADT"] for Alternative 2 compared to 1,648 ADT for the Baseline). Given the nominal changes in traffic noise levels on the adjacent roadways, changes in noise levels would not meet the 1.5 CNEL increase along any roadway with Alternative 2. Additionally, because this alternative does not provide a full-service FBO on the west side, it would not change the traffic noise levels on the west side of the Airport. As shown in Tables 4.7-9 and 4.7-10 (provided in Section 4.7, Noise) no roadways with existing adjacent noise-sensitive uses are projected to experience a traffic noise level increase greater than 0.5 dB for either the Proposed Project or Alternative 1. Given the small changes in the traffic volumes associated with Alternative 2 and how substantially below the threshold the increased noise levels are for the Proposed Project and Alternative 1, Alternative 2 would not result in a significant traffic noise impact.

As with Proposed Project and Alternative 1, the cumulative noise impacts associated with Alternative 2 would be less than significant because none of the NMSs that exceed 65 CNEL in the baseline would experience an increase equal to or greater than 1.5 dB.[5] As discussed in Section 4.7.8, although an increase of greater than 1.5 dB is projected for NMSs 9N and 10N, the existing and projected noise levels would be below 60 CNEL; therefore, the threshold for the identification of a significant impact is a 5 dB or greater increase. These two NMSs do not have noise sensitive land uses nearby. Additionally, the majority of the change in noise levels in 2026 is associated with the approved increase in commercial carrier operations provided in the 2014 JWA Settlement Agreement Amendment (i.e., there is nominal change associated with the

[5] The projected cumulative (2026) CNEL values for Alternative 2 would be similar to Alternative 1 because the number of general aviation operations would be similar and the air carrier operations would be the same. The projected cumulative (2026) CNEL values for the Baseline (2016), 2026 No Project, Proposed Project, and Alternative 1 are shown in Table 4.7-12. The change in 2026 CNEL values compared to the 2016 Baseline are shown in Table 4.7-13.

Proposed Project and Alternative 1 when compared to the No Project condition).[6] This would also be applicable to Alternative 2.

Transportation/Traffic

Similar to the Proposed Project and Alternative 1, the number of overall trips generated from Alternative 2 would decrease compared to baseline (2016) conditions. The reduction in overall trips related to general aviation is due to the reduction in the number of operations that could be accommodated with Alternative 2. The reduction in overall trips related to general aviation is shown in Table 5-10, which provides a comparison of the Proposed Project and each of the alternatives trip generation for both the baseline condition (2016) and future (2026) time frame.[7] The 2026 evaluation represents a cumulative evaluation. It incorporates not only the cumulative projects but also reflects projected regional growth. The variation between the Proposed Project and alternatives is minimal.

[6] Table 4.7-8 quantifies the noise increase directly attributable to the GAIP. The incremental noise increase for the Baseline (2016) Plus Alternative 1 would be small. Alternative 2 would be similar to Alternative 1.

[7] To facilitate comparison and minimize duplication, the values for the Proposed Project and each of the alternatives are provided in traffic tables. The discussion of Alternative 3 and the No Project will reference back to these tables. Additional detail, such as trip generation rates by alternative can be found in Appendix I to this EIR.

TABLE 5-10
GENERAL AVIATION OPERATIONS AND TRIP GENERATION FOR THE PROPOSED PROJECT AND ALL ALTERNATIVES 2016 AND 2026

Alternative	Measure	2016	2026
No-Project	*Annual Operations*	*192,800*	*201,000*
	AM Peak-Hour Trip Ends	125	137
	PM Peak-Hour Trip Ends	120	130
	Daily Trips	1,648	1,796
Proposed Project	*Annual Operations*	*192,800*	*167,900*
	AM Peak-Hour Trip Ends	125	125
	PM Peak-Hour Trip Ends	120	119
	Daily Trips	1,648	1,638
Alternative 1	*Annual Operations*	*192,800*	*168,600*
	AM Peak-Hour Trip Ends	125	125
	PM Peak-Hour Trip Ends	120	120
	Daily Trips	1,648	1,649
Alternative 2	*Annual Operations*	*192,800*	*169,400*
	AM Peak-Hour Trip Ends	125	124
	PM Peak-Hour Trip Ends	120	118
	Daily Trips	1,648	1,627
Alternative 3	*Annual Operations*	*192,800*	*197,600*
	AM Peak-Hour Trip Ends	125	132
	PM Peak-Hour Trip Ends	120	126
	Daily Trips	1,648	1,739

Annual Operations - Total annual general aviation aircraft take-offs plus landings
AM Trip Ends - Average AM peak hour weekday general aviation vehicle trips to and from JWA
PM Trip Ends – Average PM peak hour weekday general aviation vehicle trips to and from JWA
Daily Trip - Average weekday general aviation vehicle trips to and from JWA
Source: ATC 2018

Because Alternative 2 would retain the FBOs on the east side, there would be minimal change in the trip generation. The daily trip generation for Alternative 2 is less than the Baseline (2016), the No Project Alternative and the Proposed Project (1,648 trip ends for the Baseline, 1,796 trip ends are projected for the No Project, 1,638 trip ends for the Proposed Project and 1,627 trip ends for Alternative 2). However, there would be a nominal redistribution of trips to the east side of the Airport because it would provide for two adjacent full service FBOs on the east side. Currently, one of the full service FBOs maintains hangars on the west side of the Airport. However, the trip generation associated with the uses on the west side is relatively low (ATC 2018). Therefore, the number of trips on the east side of the Airport would be comparable to Alternative 1, which also proposes two full service FBOs on the east side. The analysis presented in Section 4.8, Transportation and Traffic, did not identify any significant impacts to local roadway network associated with the presence of two full service FBOs on the east side. As noted in Section 4.8, a key feature of importance to the traffic analysis for Alternative 1 is the location

of a full service FBO on the west side of the Airport. For Alternative 2, the Full Service West FBO would be replaced with box hangars on the west side, accommodating 19 aircraft. These Alternative 2 box hangars would generate less trips than the Alternative 1 Full Service West FBO. None of the study area intersections are anticipated to operate at a deficient the level of service ("LOS").

In addition to following the LOS procedures used by the adjacent jurisdictions for addressing traffic impacts, a regional vehicle miles traveled ("VMT") analysis was prepared. Measures include the absolute change in VMT and the change in VMT per capita. The latter recognizes that VMT will increase with increasing population in a region, and the analysis thereby evaluates whether any increase in VMT is higher or lower than the increase in population in the area being considered. Table 5-11 shows an average weekday VMT summary for the Proposed Project and each of the alternatives.

TABLE 5-11
SUMMARY OF AVERAGE WEEKDAY VEHICLE MILES TRAVELED

	2016		2026		*Increase*
Alternative	**ADT**	**VMT**	**ADT**	**VMT**	***2016-2026***
No Project	1,648	20,765	1,796	22,630	*9.0%*
Proposed Project	1,648	20,765	1,638	20,639	*-0.6%*
Alternative 1	1,648	20,765	1,649	20,777	*0.0%*
Alternative 2	1,648	20,765	1,627	20,500	*-1.3%*
Alternative 3	1,648	20,765	1,739	21,911	*5.5%*

ADT: Average daily traffic generated by the general aviation uses
VMT - Vehicle miles traveled for GAIP trips (Based on average distance of 12.6 miles)
Source: ATC 2018

Both the Proposed Project and Alternative 2 shows a slight decrease in VMT from 2016 to 2026. Therefore, similar to the Proposed Project, Alternative 2 would not result in a substantial increase in regional VMT.

Alternative 2 proposes the same modifications to the Campus Drive and Quail Street intersection as the Proposed Project; therefore, County of Orange Standard Conditions SC TRA-1 would apply to this alternative.

Construction work for Alternative 2 would be similar to the Proposed Project and Alternative 1, discussed in Section 4.8. It is planned to take place over slightly more than a seven-year period, commencing in 2019 and extending through 2026 and no significant construction related impacts are anticipated.

Tribal Cultural Resources

No known tribal cultural resources are present on the Airport based on the Native American Heritage Commission ("NAHC") search of the Sacred Lands File ("SLF") for the GAIP area and response from letters to tribes that have expressed an interest in being consulted regarding Native American resources for the projects being undertaken in unincorporated Orange County.

The direct and cumulative impacts of Alternative 2 would be similar to those identified for the Proposed Project and Alternative 1. The loss of tribal cultural resources over time throughout the region would be considered a cumulative impact. There is always the possibility that undiscovered intact tribal cultural resources may be present below the surface in native sediments and may be subject to direct impact during construction. Given the limited ground disturbance associated with Alternative 2 and the cumulative projects, the potential for a substantial accelerated loss of tribal cultural resources is very low. However, Alternative 2 would be required to implement MN TCR-1, which requires Native American monitoring when construction activities would disturb native soils. This would reduce potential direct and cumulative impacts to less than significant levels should buried resources of that nature be discovered as part of grading activities.

Utilities and Service Systems

The impacts of Alternative 2 would be similar to those identified for the Proposed Project and Alternative 1. The existing service providers (i.e., Mesa Water and Orange County Sanitation District ["OCSD"]) would continue to provide the same services under Alternative 2. The general aviation operations associated with Alternative 2 are estimated to result in an increase of 12 persons per day using general aviation facilities at the Airport. This represents a less than one percent increase in general aviation users. The increase in general aviation users would potentially result in an increased demand for water and in wastewater generation. However, this level of growth is less than the growth factor assumed by Mesa Water District in their Urban Water Management Plan. Additionally, consistent with the Proposed Project and Alternative 1, implementation of RR UTL-1 and RR UTL-2, would include the replacement of older plumbing fixtures and appliances at the site with water-efficient systems, which would offset the nominal increase in water demand and wastewater generation associated with 12 additional users. Thus, the wastewater generation under Alternative 2 would not affect the ability of OCSD to serve the wastewater treatment demand generated by the increase in the number of persons at the site. Additionally, Alternative 2 would not exceed the wastewater treatment requirements of the Santa Ana Regional Water Quality Control Board ("RWQCB") or result in discharges that would require the construction of new wastewater treatment facilities or the expansion of existing facilities. Therefore, Alternative 2 would not result in a significant impact pertaining to wastewater or require additional water supplies or create the need for new or expanded water treatment facilities. Similarly, the cumulative impacts would be less than significant because the anticipated increased growth at the Airport associated with the 2014 Settlement Agreement Amendment has been incorporated into the long-range planning for the service providers. Mesa Water has incorporated the demand associated with the approved 12.5 million annual passengers ("MAP") into their 2015 Urban Water Management Plan (Mesa Water 2016). Similarly, the 2005 Will Serve Letter from the OCSD establishes an assumed sewer capacity for the Airport. Utilizing the current water efficient facilities, the capacity would accommodate approximately 12.96 MAP (JWA 2014) (OCSD 2005).

Water Quality

Short-Term Construction Impacts

As with the Proposed Project and Alternative 1, Alternative 2 would result in demolition and construction activities that would generate pollutants that could enter storm water runoff.

Alternative 2 proposes a different mix and configuration of facilities than the Proposed Project and Alternative 1; however, as previously discussed, the overall nature of the improvements and subsequent use of those facilities would be similar. Alternative 2 would involve the same short-term construction impacts related to water quality as described under the Proposed Project and Alternative 1. Compliance with RR WQ-1 and RR WQ-2 would be required for all construction activities, which include preparation and implementation of a Storm Water Pollution Prevention Plan ("SWPPP") and compliance with the dewatering regulations of the Santa Ana Regional Water Quality Control Board ("RWQCB"), if applicable, to prevent and/or minimize pollutants in the storm water.

No cumulative short-term water quality impacts are anticipated because the construction schedules would not overlap. The cumulative projects are expected to be completed prior to the initiation of Alternative 2 improvements. Additionally, all the cumulative construction projects are required to comply with the regulatory requirements, such as the NPDES Construction General Permit, and the County standard conditions pertaining to water quality. This would include the implementation of Best Management Practices ("BMPs").

Long-Term Operational Impacts

As with the Proposed Project and Alternative 1, the area dedicated to general aviation would remain as general aviation under Alternative 2. Like the Proposed Project and Alternative 1, the replacement of the existing facilities with new facilities would generally result in the same storm water pollutants at the site. Additionally, Alternative 2 would not substantially increase the extent of impervious surfaces or result in substantial changes in the volume of runoff generated at the Airport. As discussed for the Proposed Project and Alternative 1, water quality BMPs are in place for petrochemical pollutants and would be applicable to Alternative 2. Therefore, consistent with the Proposed Project and Alternative 1, it is anticipated that continued implementation of National Pollutant Discharge Elimination System- ("NPDES-") related BMPs would accommodate the petrochemical pollutants and meet water quality standards. Compliance with RR WQ-3 and RR WQ-4, related to preparation and implementation of a Water Quality Management Plan ("WQMP") and the requirements of the Industrial General Permit would prevent or minimize pollutants in the storm water.

As with the Proposed Project and Alternative 1, Alternative 2 would decrease the number of general aviation aircraft accommodated at the Airport compared to existing conditions. The pollutant load generated by Alternative 2 would be similar to the Proposed Project and Alternative 1 because the projected number of based aircraft and operations is similar among these development scenarios. As with the Proposed Project and Alternative 1, all the current regulatory requirements would apply to Alternative 2; therefore, Alternative 2 would not result in violations of water quality standards or waste discharge requirements, create or contribute runoff water which would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff, or otherwise substantially degrade water quality. Impacts would be less than significant.

Cumulative long-term operational impacts with Alternative 2 would be similar to those associated with the Proposed Project and Alternative 1. The existing BMPs and other practices that are implemented at the Airport would continue to be implemented as part of the MS4 Permit regulations and the Industrial General Permit for the Airport and in compliance with pertinent County Code regulations. The Wickland Pipeline project is incorporating additional design

measures, such as installation of an oil/water separator and a containment system to protect against releases of petrochemicals into the runoff. The regulatory requirements and the Standard Conditions of Approval applicable to the Proposed Project and Alternative 1 would also be implemented with the improvements proposed under Alternative 2. The existing facilities and the design requirements would reduce pollutants in the storm water that may be generated by general and commercial aviation activities at JWA. Thus, cumulative impacts related to the violation of water quality standards would be less than significant.

5.4.2 ALTERNATIVE 3

Under Alternative 3, the following improvements and changes would be undertaken to correct existing nonstandard conditions:

- Relocate the Vehicle Service Road (also known as Perimeter Road) along Taxiway A to comply with FAA clearance standard dimensions for Group V aircraft
- Remove obstructions (two community hangars from the Full Service Southeast FBO) to comply with FAA height restrictions
- Remove 31 transient aircraft apron parking spaces from within the extended object-free area ("OFA") in the approach to Runway 2L

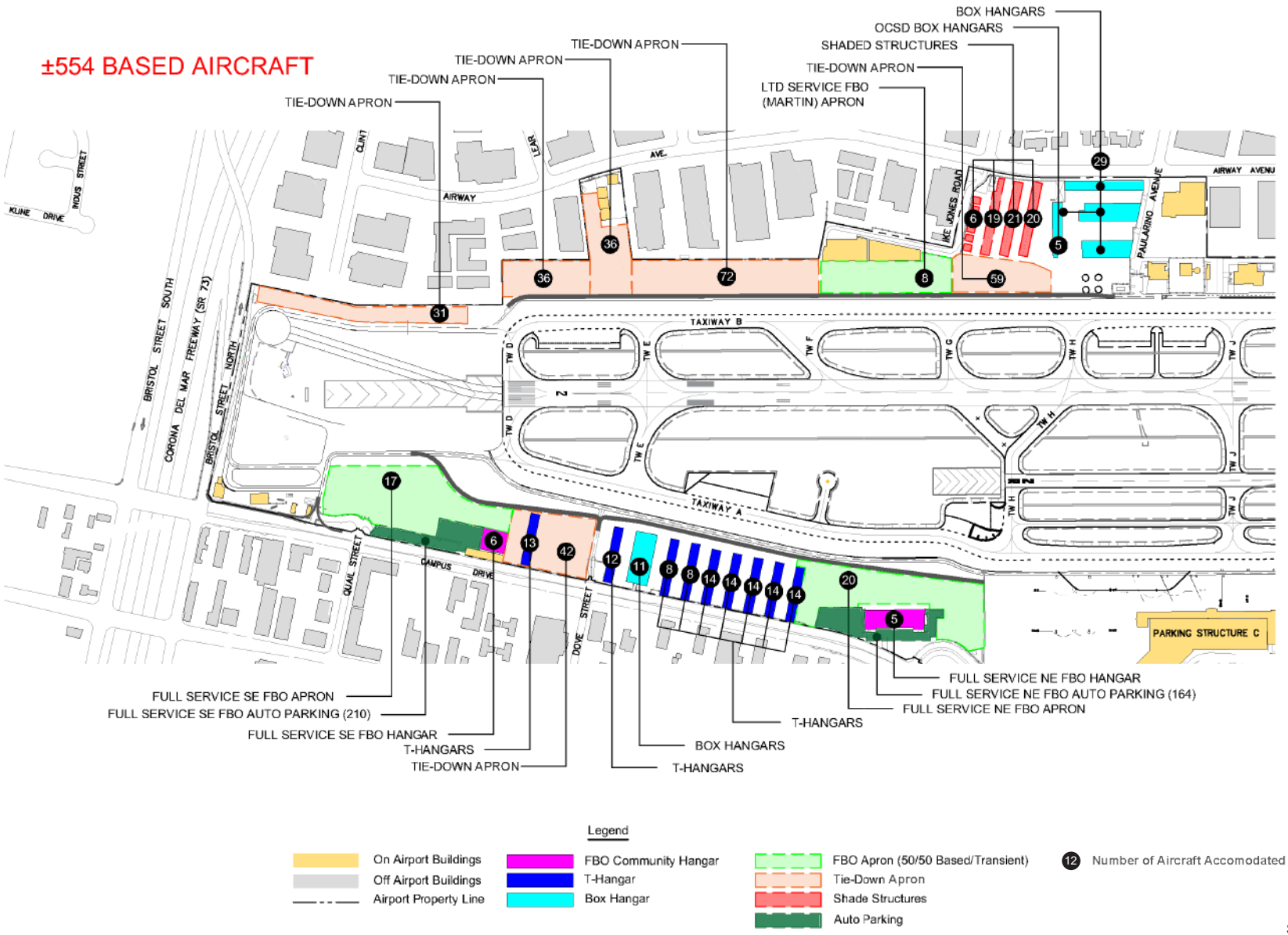
Table 5-12 provides a comparison of the type of facilities currently (2016) available at the Airport and the facilities that would be available under Alternative 3. When compared to Existing Conditions, Alternative 3 reduces aircraft storage capacity by approximately 42 spaces (slightly more than 9 percent); however, it would accommodate 72 more general aviation aircraft than currently using the Airport. Exhibit 5-3 depicts the conceptual layout of facilities for Alternative 3.

TABLE 5-12
FACILITIES COMPARISON OF EXISTING CONDITIONS (2016)
AND ALTERNATIVE 3

Facility	Aircraft Parking Spaces			Percentage Change (+/-)[a]	
	Existing Capacity	Currently Used	Alternative 3	Compared to Capacity	Compared to Currently Used
Tie-Down Apron	302	222	276	-26	54
T-Hangars	111	111	111	0	0
Box Hangars	45	45	45	0	0
FBO/Community Hangars	23	23	11	-12	-12
Shade Structures	66	66	66	0	0
FBO Apron Spaces	49	15	45	-4	30
Total	**596**	**482**	**554**	**-42**	**72**

[a] Numbers in red indicate a loss or deficiency.

Source: AECOM 2018b (Appendix D to this Program EIR)



Source: AECOM 2018

Conceptual Facilities Layout – Alternative 3

Exhibit 5-3

John Wayne Airport General Aviation Improvement Program

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Aviation Forecasts for Alternative 3

The aviation forecasts for Alternative 3 are provided in Tables 5-13 through 5-15. Table 5-13 identifies the 2016 baseline information, the theoretical capacity for Alternative 3, and the projected 2026 forecasts by type of aircraft. For Alternative 3 there would be capacity for more single-engine and multi-engine fixed wing piston aircraft than there would be demand for. Therefore, there would be capacity that would go unused for the piston aircraft. Table 5-14 identifies the number of general aviation operations based on the projected number of aircraft that would be utilizing the Airport. Table 5-15 provides the operations forecast by engine type. With this alternative, the number of based aircraft is projected to increase from 482 in 2016 to 490 in 2026. During this same period, the number of annual general aviation operations is projected to increase from 192,800 to 197,600.

Before construction commences in 2019, the number of based aircraft will have increased above existing conditions levels (2016) as reflected in the forecast levels of based aircraft operations at the Airport (AECOM 2018a). This increase in the number of based aircraft at the Airport is consistent with the increase reflected under the No Project Alternative. By opening day (i.e., 2020), the number of turboprops, turbo jet aircraft, and helicopters will be constrained by the estimated capacity. Hence, during the construction period (i.e., from 2019 to 2024), seven based turboprops, seven turbo jet aircraft, and one helicopter (total of 15 based aircraft) would be relocated to other airports due to a lack of aircraft parking (i.e., hangars or tie-down) spaces (AECOM 2018b). This alternative does not fully utilize the capacity of the facilities because of insufficient demand for fixed-wing piston aircraft. The number of turboprops, jet aircraft, and helicopters would be constrained by the capacity available for those types of aircraft.

TABLE 5-13
JWA CONSTRAINED FORECAST BASED AIRCRAFT BY TYPE – ALTERNATIVE 3

Year	Fixed Wing Piston[a]		Fixed Wing Turbine		Helicopter	Total Based Aircraft
	Single Engine	Multi-Engine	Turboprop	Turbo Jet		
2016	339	35	26	65	17	**482**
Capacity	413	48	19	58	16	**554**
2026[b]	360	37	19	58	16	**490**

Note: The fleet mix distributions may not match the sum totals due to rounding. The type and size of aircraft parked at an FBO facility may vary based on demand and can change frequently; therefore, the actual number and type of aircraft at the Airport may differ from what is shown in this table.

[a] The based aircraft totals for single engine include one glider.

[b] The theoretical capacity of Alternative 3 is based on the existing facilities, less those that would be removed to due to the modifications of non-standard conditions. For the evaluation of potential impacts the forecasts reflect the fleet mix of the aircraft that would be reasonably accommodated at the Airport based on the unconstrained demand.

Source: AECOM 2018b (Appendix D to this Program EIR)

TABLE 5-14
JWA CONSTRAINED FORECAST GENERAL AVIATION AND AIR TAXI OPERATIONS – ALTERNATIVE 3

Year	Air Taxi	General Aviation		Total Operations[a]
		Itinerant	Local	
2016	15,400	90,900	86,500	**192,800**
2026	18,000	94,400	85,200	**197,600**

[a] An operation is defined as either a takeoff or landing, each counting as one operation.
Source: AECOM 2018b (Appendix D to this Program EIR)

TABLE 5-15
JWA CONSTRAINED FORECAST OPERATIONS BY AIRCRAFT ENGINE TYPE – ALTERNATIVE 3

Year	Piston	Turbine	Jet	Helicopter/Other	Total Operations[a]
2016	147,300	9,800	31,800	3,900	**192,800**
2026	147,000	9,500	36,400	4,700	**197,600**

[a] An operation is defined as either a takeoff or landing, each counting as one operation.
Source: AECOM 2018b (Appendix D to this Program EIR)

Impact Evaluation

Aesthetics

Short-Term Construction Impacts

Alternative 3 would be limited to improvements and changes undertaken to correct existing nonstandard conditions at the Airport. Similar to the impacts of the Proposed Project and Alternative 1, Alternative 3 would include construction activities that would occur during the nighttime hours and would result in temporary lighting that would be limited to specific construction sites during each phase. However, the extent of the construction activities would be substantially less with Alternative 3 than with the Proposed Project or Alternative 1 because minimal improvements would be provided. Compliance with FAR Part 77 regulations (RR AES-1) during demolition and construction activities associated with Alternative 3 would minimize the potential for intrusive lighting during construction. Due to the lack of sensitive receptors adjacent to the Airport, lighting impacts during construction activities would be less than significant under Threshold 4.1-1. The construction elements of the cumulative projects are expected to be completed prior to the initiation of construction on GAIP improvements. Therefore, as with the Proposed Project and Alternative 1, no short-term cumulative aesthetic impacts are anticipated with Alternative 3.

Long-Term Operational Impacts

Alternative 3 would include the relocation of the Vehicle Service Road to comply with FAA clearance standard dimensions for Group V aircraft; removal of obstructions to comply with FAA height restrictions, and the removal of transient aircraft apron parking spaces from within the extended OFA. However, as compared to the Proposed Project and Alternative 1, no new facilities or buildings would be constructed under Alternative 3 that would require avoidance measures for potential glare from buildings. All work under Alternative 3 would be done in compliance with FAR Part 77 regulations, to minimize and prevent substantial light or glare that would result in significant visual impacts due to the relocation and removal of nonstandard conditions at the facilities. Therefore, the impact would be less than significant under Threshold 4.1-2.

Similar to the Proposed Project and Alternative 1, the Wickland Pipeline Project would be the only cumulative project that would alter the existing views at the Airport because it would introduce new facilities to the Airport (i.e., two new fuel tanks). As previously discussed, the other cumulative projects that include physical improvements (i.e., the Paularino Gate Relocation Project and the rehabilitation of Taxiway "B") would not substantially change views or the visual character of the Airport and no physical improvements are associated with the 2014 Settlement Agreement Amendment. Due to the limited improvements proposed under Alternative 3, there would be minimal changes to the view shed or visual character of the Airport. Both Alternative 3 improvements and the Wickland Pipeline project would be required to comply with FAA requirements pertaining to lighting and use of reflective materials, thereby minimizing the potential for light and glare impacts. Based on the industrial character of the Airport, the cumulative visual impacts associated with Alternative 3 would be less than significant.

Air Quality

Short-Term Construction Impacts

Construction impacts associated with Alternative 3 would be substantially less than either the Proposed Project or Alternative 1 because limited construction efforts are required to implement this alternative. The Air Quality Technical Report (Appendix E of this Program EIR [Table 14]), provides a detailed breakdown of construction emissions by year. The duration for the relocation of the roadways and removal of the two community hangars from the Full Service Southeast FBO (i.e., construction of the improvements associated with the Alternative 3) are very limited. Given that the construction impacts associated with the Proposed Project and Alternative 1 would be reduced to less than significant with the application of MM AQ-1, it is reasonable to assume that the construction impacts for Alternative 3 would also be less than significant. Similar to the Proposed Project and Alternative 1, MM AQ-1, which requires the architectural coatings applied to the proposed East and West Access Roads be low volatile organic compound ("VOC") coatings (less than 50 grams of VOC emissions per liter of paint), would also apply to Alternative 3. Additionally, no short-term cumulative impacts are anticipated because the cumulative projects that include physical improvements (Paularino Gate Relocation, Taxiway B rehabilitation, and the Wickland Pipeline Project) would not be under construction at the same time as the Alternative 3 improvements.

As discussed in Section 4, JWA staff coordinated with SCAQMD to ensure that construction emissions for the GAIP were accounted in the AQMP. The construction data for the GAIP provided by JWA staff to SCAQMD overstates the construction emissions associated with Alternative 3 because minimal construction is proposed. Therefore, for short-term impacts, Alternative 3 would not conflict with the AQMP and impacts would be less than significant.

Long-Term Operational Impacts

From an operational air quality perspective, Alternative 3 would be similar to the No Project Alternative. It allows slightly fewer aircraft to be based at the Airport and slightly fewer operations than the No Project Alternative (see Tables 5-1 and 5-2, respectively for a comparison of the number of aircraft and operations for each alternative). Although the emissions of criteria pollutants were not specifically quantified for Alternative 3, because the operational assumptions are similar to the No Project Alternative, it is anticipated that operational emissions would not exceed the SCAQMD thresholds for criteria pollutants and impacts would be less than significant under Thresholds 4.2-2. The emissions for the criteria pollutants associated with the No Project Alternative are provided in Section 5.4.3, below. Additionally, MN AQ-2, which includes the use of Zero Emission Vehicle ("ZEV") GSE for 90 percent or greater of the GSE operating hours, would also be applicable to Alternative 3; thereby further reducing operational emissions.

Similar to the Proposed Project and Alternative 1, Alternative 3 would be consistent with the AQMP. As discussed in Section 4.2 and above, JWA staff coordinated with SCAQMD to ensure that aircraft operation data specific to the Airport (such as the number of operations, fleet mix and taxi times) were accounted for throughout the forecasted planning period for both the RTP/SCS and AQMP. Because Alternative 3 would have similar fleet mix and fewer operations than the No Project Alternative, and the emissions associated with the No Project Alternative are less than the significance threshold established by the SCAQMD, Alternative 3 would not result in a significant impact and would be consistent with the AQMP. Impacts would be less than significant under Threshold 4.2-1.

The same cumulative projects would be applicable to all alternatives. Although significant air quality impacts were associated with the 2014 Settlement Agreement Amendment, which has been identified as a cumulative project, the GAIP (Proposed Project and Alternative 1) would not contribute to a considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard. Neither the Proposed Project, Alternative 1, nor the No Project Alternative would exceed SCAQMD's thresholds for criteria pollutants. Additionally, the GAIP (all scenarios) is consistent with the AQMP; therefore, given the operational similarities of Alternative 3 to the No Project Alternative, impacts of Alternative 3 would also be less than significant under Threshold 4.2-3.

In 2026, Alternative 3 would result in 4,800 additional aircraft operations compared to the Baseline (2016) number of operations (see Table 5-14). Utilizing the evaluation of TAC prepared for Final EIR 617, Alternative 3 would result in a substantially smaller incremental increase in air pollutant emissions than the project studied in Final EIR 617. Thus, it is estimated that the TAC emissions would be lower in a similar proportion for Alternative 3 since the TAC emissions are generally fractions of the VOC and PM emissions. Based on this analysis, although the emissions of criteria pollutants, and therefore, TAC, would be slightly greater than the Proposed Project and Alternative 1, Alternative 3 would not expose sensitive receptors to substantial

pollutant concentrations. Similar to the Proposed Project and Alternative 1, the impacts associated with Alternative 3 under Threshold 4.2-4 would be less than significant (see the discussion in Section 4.2, under Threshold 4.2-4 for additional discussion of TAC).

Cultural and Scientific Resources

Due to the limited nature of the improvements associated with Alternative 3, the potential for impacts to cultural and scientific resources is less than with the Proposed Project and Alternative 1. The modifications (relocation of a segment of the service road, removal of two community hangars, and removal of transient aircraft parking area) would not require the extent or depth of construction associated with the Proposed Project and Alternative 1 improvements. The depth of construction for Alternative 3 would generally be no greater than 5 feet. Although the impacts associated with the Proposed Project and Alternative 1 were identified as being less than significant with the applicable standard conditions of approval, the impacts would potentially be less with Alternative 3 because it is unlikely that the disturbance would be in native soil. With any of the development scenarios, the potential for discovery of human remains is low; however, the likelihood would be less with Alternative 3 due to the limited ground and subsurface disturbance. However, the regulatory requirement pertaining to discover of human remains (RR CUL-1) and the County's standard condition of approval pertaining to archaeological and paleontological resources (SC CUL-1 and SC CUL-2) would still apply to Alternative 3. Therefore, impacts to archaeological, paleontological, and human remains would be less than significant under Thresholds 4.3-1 through 4.3-3, respectively. No historic resources were identified in the GAIP APE; therefore, no impacts under Threshold 4.3-4 would occur.

As previously noted, impacts to archaeological and paleontological resources are site-specific with regard to any given resource; however, the loss of cultural resources in general over time throughout the region can be considered a cumulative impact. None of the cumulative projects involves substantial grading activities. Due to the shallow depth of excavation associated with Alternative 3 and the cumulative projects, the likelihood of disturbing unknown cultural resources is low. Each cumulative development project is subject to similar resource protection requirements as the GAIP (including Alternative 3). Therefore, cumulative impacts to archaeological and paleontological resources is less than significant.

Greenhouse Gas Emissions

GHG impacts are considered exclusively cumulative impacts. The fleet mix for Alternative 3 would be similar that of the No Project Alternative; however, there would be slightly fewer operations with Alternative 3. Therefore, the GHG emissions would be slightly less for long-term operations; although, there would be a limited construction component with Alternative 3 that is not applicable to the No Project Alternative. As discussed below in Section 5.4.3, the net GHG emissions with the No Project Alternative would be substantially below the SCAQMD threshold for industrial uses (i.e., 10,000, annual $MTCO_2e$) (refer to Table 5-23). The GHG emissions associated with the No Project Alternative would also be less than the emissions associated with the Proposed Project or Alternative 1 (the quantified net emissions for the Proposed Project and Alternative 1 are provided in Tables 4.4-5 and 4.4-8, respectively). The regulatory requirements (RR GHG-1 and RR GHG-2), MN GHG-1. MM AQ-1, MN AQ-1, and MN AQ-2, which are designed to further reduce GHG emissions would also apply to Alternative 3, to the extent applicable. However, it should be noted, Alternative 3 would not be upgrading the facilities to incorporate

the most current code requirements and design standards. While this would not change the level of GHG emissions from existing conditions the benefits associated with the facility improvements would not be realized. However, impacts of Alternative 3 would be less than significant under Threshold 4.4-1.

Similar to the Proposed Project and Alternative 1, Alternative 3 would implement applicable emissions-reducing strategies identified in CARB's Mobile Source Strategy and 2017 Scoping Plan, to the extent required by law. MN GHG-1 requires GAIP-facilitated development and uses to comply with applicable provisions in JWA's CAP. As noted, Alternative 3 does not provide for the upgrading of the existing facilities; however, this measure would still be applicable to Alternative 3 (i.e., included in lease agreements) and many of the provisions of the CAP may get implemented in conjunction with maintenance in future years. Although this approach would not ensure consistent and full implementation of the CAP, Alternative 3 would not conflict with any applicable plan, policy or regulation established for reducing GHG emissions impacts and impacts would be less than significant under Threshold 4.4-2.

Hazards and Hazardous Materials

Short-Term Construction Impacts

Alternative 3 would be limited to improvements undertaken to correct existing nonstandard conditions at JWA. As with the Proposed Project and Alternative 1, impacts associated with demolition and construction activities related to the relocation and removal of nonstandard conditions would be limited to specific demolition and construction sites during each phase. As with the Proposed Project and Alternative 1, impacts related to hazardous materials such as asbestos-containing materials, lead-based paint, and generating hazardous waste have potential to occur under Alternative 3. Consistent with the Proposed Project and Alternative 1, Alternative 3 would comply with all abatement requirements related to ACM an LBP and require that all hazardous materials used or generated on site are appropriately handled pursuant to federal, State, and local regulations. Furthermore, compliance with RR HAZ-1 and RR HAZ-2 would be required during demolition and construction activities, as applicable, to prevent potential impacts related to hazardous materials and generating hazardous waste. Consistent with the Proposed Project and Alternative 1, by adhering to regulatory requirements and application of Standard Conditions and BMPs, potential impacts associated with hazardous material use or generation due to demolition and construction of Alternative 3 would be maintained to below a level of significance. Therefore, impacts would be less than significant under Thresholds 4.5-1 and 4.5-2.

No cumulative short-term hazardous material impacts are anticipated because based on the construction schedules, the cumulative projects that include physical improvements are expected to be completed prior to the initiation of Alternative 3 improvements. Additionally, all the cumulative construction projects are required to comply with the regulatory requirements and County standard conditions pertaining to the handling and management of hazardous materials.

Long-Term Operational Impacts

Alternative 3 would incrementally reduce aircraft storage capacity while accommodating more general aviation aircraft than currently using the Airport or would be served by the Proposed

Project and Alternative 1. Alternative 3 does not propose any new facilities or buildings. As with the Proposed Project and Alternative 1, existing requirements for operation and maintenance activities currently applied to general aviation at JWA would continue under Alternative 3. Alternative 3 would maintain a comparable number and type of general aviation-based aircraft facilities, as compared to existing occupied facilities and, therefore, would not result in substantial changes to the statistical likelihood of a spill (i.e., upset and accident conditions). Consistent with the Proposed Project and Alternative 1, Alternative 3 would continue to implement the current BMPs; adopted procedures; preventative measures; and compliance with applicable codes and standards related to the generation, handling, and transport of hazardous materials and, therefore, would cause no reasonably foreseeable significant hazard to the public or environment. Therefore, impacts would be less than significant under Thresholds 4.5-1 and 4.5-2.

Alternative 3 would not modify the Campus Drive/Quail Street intersection or provide for the self-serve fueling station on the west side. As a result, the proximity of fueling operations from the nearest school would not change from existing conditions. The nearest fuel transport route on public roads would remain approximately 0.5 mile from the nearest school facility, which exceeds the 0.25-mile limit identified in the threshold of significance. Internal to the Airport, the FBO fuel trucks currently use Perimeter Road when delivering fuel to aircraft on the west side of the airfield and would continue to do so under Alternative 3. Therefore, impacts would be less than significant under Threshold 4.5-3.

From a cumulative impacts perspective, the Wickland Pipeline and Settlement Agreement Amendment projects would both increase the amount of fuel stored and/or used at the Airport. The adopted safety programs that are currently in operation at the Airport and the current regulatory requirements are applicable to all JWA projects. The potential health risks are low because the fuel spills are contained and cleaned up and do not enter the Airport drainage system. Based on the above evaluation, the risk associated with cumulative hazardous materials and hazardous waste impacts would be less than significant for Alternative 3.

Land Use and Planning

Short-Term Construction Impacts

Alternative 3, would be limited to improvements undertaken to correct existing nonstandard conditions at JWA. As with the Proposed Project and Alternative 1, the nearest sensitive land uses are located approximately 1,760 feet from the nearest proposed construction zone. Based on the limited improvements associated with Alternative 3, temporary increases in noise levels are anticipated to be minimal and would not be excepted to substantially affect ambient noise levels at the nearest sensitive land uses. Furthermore, the proximity of the closest residences to the construction area and the intervening commercial buildings would provide enough attenuation that construction noise impacts would be less than significant. Therefore, short-term, temporary impacts associated with construction activities would be less than significant under Threshold 4.6-1 for Alternative 3.

Long-Term Operational Impacts

Similar to the Proposed Project and Alternative 1, Alternative 3 would result in a reduction in overall area for general aviation uses because transient aircraft would no longer be allowed on the apron parking area located at the south end of the Airport. The correction of the current non-standard condition would result in the removal of 31 transient parking spaces in an OFA for Runway 2L. As with the Proposed Project and Alternative 1, removal of the transient parking spaces in this area would not change the number of based aircraft at the Airport because it is used for transient parking only.

Alternative 3 would result in a reduction in the number of aircraft that could be based at the Airport compared to existing capacity. However, the total number of aircraft that could be accommodated would be greater than the capacity provided with the Proposed Project and Alternative 1 and greater than the number of current users of the general aviation facilities at the Airport. Table 5-16 shows the capacity for general aviation aircraft of Alternative 3 compared to the current capacity and the number of aircraft parking spaces currently being used at the Airport.

TABLE 5-16
NUMBER OF AIRCRAFT PARKING POSITIONS LOST
FOR ALTERNATIVE 3

Facility	Change in Aircraft Parking Spaces (+/-)	
	Compared to Capacity	Compared to Current Use
Tie-Down Apron	-26	-54
T-Hangars	0	0
Box Hangars (includes OCSD)	0	0
FBO/Community Hangars	-12	-12
Shade Structures	0	0
FBO Apron Spaces	-4	30
Total	**-42**	**72**

[a] Numbers in red indicate a loss or deficiency.

Source: AECOM 2018b (Appendix D to this Program EIR)

The type of aircraft that would be most affected by the reduction in general aviation capacity would be the turboprop and turbojet aircraft. Additionally, there would be the loss of one helicopter space. For these three categories of aircraft, there would be fewer spaces available at the Airport than are currently in use. Therefore, although there would be aircraft parking spaces that would remain unused because they cannot accommodate the mix of aircraft at the Airport, seven based turboprops, seven jet aircraft, and one helicopter would need to relocate to other airports due to a lack of parking spaces. Table 5-17 shows the projected change in the number of aircraft based on the facilities proposed by Alternative 3. As with the other alternatives, this

would be considered an adverse impact but less than significant. Other airports in the region have capacity to accommodate the displaced aircraft.

TABLE 5-17
CHANGE IN NUMBER OF BASED AIRCRAFT BY TYPE
ALTERNATIVE 3

Year	Fixed Wing Piston[a]		Fixed Wing Turbine		Helicopter	Total Based Aircraft
	Single Engine	Multi-Engine	Turboprop	Turbo Jet		
2016	339	35	26	65	17	**482**
Capacity	413	48	19	58	16	**554**
2026 Forecasts[b]	360	37	19	58	16	**490**
Change in the Number of Aircraft from 2016 to Capacity	74	13	-7	-7	-1	**72**
Change in the Number of Aircraft from 2016 to Forecasts	21	2	-7	-7	-1	**8**

Note: Fleet mix distributions may not match sum totals due to rounding. . The type and size of aircraft parked at an FBO facility may vary based on demand and can change frequently; therefore, the actual number and type of aircraft at the Airport may differ from what is shown in this table.

[a] The based aircraft totals for single-engine include one glider.

[b] The theoretical capacity of Alternative 3 is based on the existing facilities, less those that would be removed to due to the modifications of non-standard conditions. For the evaluation of potential impacts the forecasts reflect the fleet mix of the aircraft that would be reasonably accommodated at the Airport.

Source: AECOM 2018b (Appendix D to this Program EIR)

Similar to the other scenarios (Proposed Project, Alternative 1, and the No Project Alternative), it is anticipated Alternative 3 would result in a similar increase in exposure of noise levels in excess of 65 CNEL. Because Alternative 3 is similar to the No Project Alternative, it is estimated approximately 10 additional residences would be included in the 65 CNEL; however, avigation easements are recorded for 7 of these units. As with the other scenarios, there would be three additional residential units being exposed to noise levels in excess of 65 CNEL that have not received sound attenuation and no avigation easement is recorded. These residences are located within the policy implementation line used in the JWA AELUP for establishing the Airport Noise Impact Zones. Final EIR 508 certified in conjunction with the 1985 Master Plan included the AIP, which offered sound attenuation for noise sensitive uses within the 1985 Master Plan 65 CNEL contour. These residences were included in the area covered by this program; however, one owner declined the offer and the remaining two did not respond after a genuine effort was made to offer insulation. Additionally, these residences were identified Final EIR 617 as being potentially impacted in 2026. In conjunction with the adoption of the 2014 Settlement Agreement Amendment and certification of Final EIR 617, significant unavoidable land use compatibility impacts were identified because noise-sensitive uses would be located in an area exposed to future noise levels of 65 CNEL or greater. Although a mitigation measure was proposed, the Board of Supervisors made a finding addressing this issue because it could not be

certain that the residences in question would qualify or implement the offered improvements. Exposure of these residences to noise levels in excess of 65 CNEL would result in incompatible land uses, which would be a significant, unavoidable land use compatibility impact under Threshold 4.6-1.

The noise contours for the 2026 cumulative scenarios are dominated by the commercial carrier operations, and these will occur independently of the GAIP. The GAIP would make no changes to the commercial operations approved as part of the 2014 Settlement Agreement Amendment. The cumulative land use impacts for Alternative 3 would also be similar to those of the No Project Alternative.

As shown in Table 4.6-11, in the cumulative scenario, the No Project Alternative would result in 26 additional residential units in the 65 CNEL contour when compared to the Baseline (2016) (i.e., 271 units compared to 247 units)[8]; therefore, the cumulative impacts associated with Alternative 3 are expected to be similar. The increase in the number of units in the greater than 65 CNEL contour is substantially associated with the increased commercial carrier operations (2014 Settlement Agreement Amendment). For the units in the AIP that have received sound attenuation and an avigation easement has been recorded, the land use impacts would be less than significant. For those residential units where the homeowner has been offered sound attenuation, but it has not been implemented for various reasons, the noise exposure would potentially result in interior and exterior noise levels in excess of policies adopted to avoid or mitigate an environmental effect.

As discussed in Section 4.6,8, the significant cumulative land use impact has been identified in previous studies done for the Airport so it is not a new land use compatibility impact and noise attenuation programs (i.e., AIP and SIP) have been adopted. However, when the Board of Supervisors certified Final EIR 617 for the 2014 Settlement Agreement Amendment a significant unavoidable land use compatibility impact was identified because noise-sensitive uses would be located in an area exposed to future noise levels of 65 CNEL or greater. This significant cumulative impact would also be applicable to Alternative 3.

Noise

Short-Term Construction Impacts

Alternative 3 would result in minimal construction activities. As discussed in Section 4.7, the nearest sensitive land uses to the GAIP construction is a new multi-story residential building on the south corner of Baker Street and SR-55. These residences are located about 1,760 feet from the nearest section of the construction zone. Existing commercial buildings are located between the Airport and the residential buildings, which provides attenuation of the construction noise. Based on this distance and the height of the intervening buildings, the worst-case mitigated peak (L_{max}) construction noise levels would be in the 44- to 59-dBA range at those residences on the east side of SR-55 for very short periods. Impacts for Alternative 3 would be less than the

[8] As with the other cumulative scenarios, all but two of these units are located within the AIP Area from the 1985 Master Plan. These two were not included in the AIP because the livable areas (i.e., the houses and backyards) were not in the 65 CNEL contour. This condition remains unchanged and there would be no land use incompatibility.

Proposed Project and Alternative 1 because there would be fewer improvements. Similar to those alternatives, construction noise impacts would be less than significant.

Long-Term Operational Impacts

From a noise perspective, the location of the facilities has limited implications. The noise is associated with number of operations and the general aviation fleet mix. A review of Tables 5-2 shows that Alternative 3 would have incrementally more annual operations than the Proposed Project and Alternative 1 (167,900 for the Proposed Project compared to 168,600 for Alternative 1 and 197,600 for Alternative 3). This is an increase of approximately 2.5 percent when compared to the Baseline (2016), a 17.7 percent compared to the Proposed Project, and a 17.2 percent increase when compared to Alternative 1. As shown in Table 5-3, the difference in the number of operations would predominately be associated with piston engine aircraft. There is a slight decrease in the number of turbine and jet operations with Alternative 3 compared to both the Proposed Project and Alternative 1 and there would be a slight decrease in the number of turbine operations and an increase in jet operations when compared to the Baseline (2016) operations.

Table 4.7-7, provided in Section 4.7, Noise, presents an assessment of the change in noise values compared to baseline conditions that would be attributable to the Proposed Project and Alternative 1 assuming the implementation of the GAIP improvements and change in fleet mix and operations. This analysis shows that none of the increases at the NMS would result in a significant impact. See Section 4.7 for a full discussion of the noise standards used for identifying a significant noise impact; however, the most relevant standard is a noise increase of 1.5 CNEL or more at a sensitive receptor where the existing exposure is 65 CNEL or above. Only the close-in NMS 1S, 2S, 3S located in the Santa Ana Heights community in the City of Newport Beach and NMS 8N located in the City of Irvine show noise levels above 65 CNEL for any case. However, it should be noted that NMS 8N is located in a commercial area with no nearby residences. Neither the Proposed Project, Alternative 1, nor the No Project Alternative would result in an increase near 1.5 CNEL. Given the similarity in fleet mix and number of operations of Alternative 3 to the No Project Alternative, noise impacts associated with Alternative 3 are expected to be similar and impacts would also be less than significant.

Since Alternative 3 does not provide for construction of new office space and the flight school, SC NOI-1 would not be applicable to this alternative. SC NOI-1 pertains to verifying the interior noise criteria as specified in the Noise Element and Land Use/Noise Compatibility Manual would be achieved.

Similar to the aviation noise, the changes in automobile traffic patterns caused by Alternative 3 would be limited. Given the nominal changes in traffic noise levels on the adjacent roadways, changes in noise levels would not meet the 1.5 CNEL increase along any roadway with Alternative 3. As shown in Tables 4.7-9 and 4.7-10 (provided in Section 4.7, Noise), no roadways with existing adjacent noise-sensitive uses are projected to experience a traffic noise level increase greater than 0.5 dB for either the Proposed Project or Alternative 1. Given how substantially below the threshold the increased noise levels are for the Proposed Project and Alternative 1, Alternative 3 would not be expected to result in a significant traffic noise impact.

The cumulative noise impacts associated with Alternative 3 would be comparable to those of the No Project Alternative. Impacts would be less than significant because none of the NMSs that

exceed 65 CNEL in the baseline would experience an increase equal to or greater than 1.5 dB.[9] As discussed in Section 4.7.8, although an increase of greater than 1.5 dB is projected for NMSs 9N and 10N, the existing and projected noise levels would be below 60 CNEL; therefore, the threshold for the identification of a significant impact is a 5 dB or greater increase. These two NMSs do not have noise sensitive land uses nearby. No significant cumulative noise impacts would result with Alternative 3.

Transportation/Traffic

In 2026, Alternative 3 would result in an incremental increase in the number of vehicle trips compared to the Baseline (2016), whereas the number of overall trips generated from the Proposed Project and Alternative 1 would decrease compared to Baseline (2016) conditions. However, Alternative 3 would generate fewer trips than the No Project Alternative. The trip generation values are presented in Table 5-10, above. The 2026 evaluation represents a cumulative evaluation. It incorporates not only the cumulative projects but also reflects projected regional growth.

For Alternative 3, there is only a slight change in aircraft mix over time; however, this alternative allows for more general aviation operations. As shown in Table 5-15 above, there is some increase in operations by jet aircraft but minimal decrease for piston aircraft. This results in a slightly higher trip rate (from 1,648 daily trip ends in the Baseline [2016] to 1,739 daily trip ends by 2026). This alternative would not result in modifications to aircraft placement (i.e., location of FBOs) other than the removal of 31 transient aircraft apron parking spaces from within the extended OFA in the approach to Runway 2L. Therefore, there would not be a redistribution of trips to the west side of the Airport.

As shown in Table 5-11, Alternative 3 would result in an increase of 5.5 percent in the VMT when compared to the Baseline (2016). This is greater than the Proposed Project, which would reduce VMT by approximately 0.6 percent; however, this would still be less than the projected No Project VMT. The future (2026) traffic projections reflect the long-range growth in the region. As noted in Section 4.8, the long-range cumulative condition or "future volumes" reflect the build-out conditions for each of the local jurisdictions. For the Irvine Transportation Analysis Model ("ITAM") volumes, they reflect the post-2035, while the City of Costa Mesa forecasts are referred to as 2035. Therefore, the future traffic volumes actually include this growth and it would not be additive in 2026. None of the study area intersections were identified as operating at a deficient LOS in 2026; therefore, Alternative 3 would not result in a significant traffic impact.

Alternative 3 would have limited construction activities and the number of construction trips would be limited. Additionally, it should be noted that the peak hour for construction-related trips usually differs from the peak hour of the adjacent streets' trips (i.e., construction workers tend to be earlier than those of the adjacent streets). Therefore, impacts would be less than significant. Alternative 3 does not propose any modifications to the Campus Drive and Quail Street intersection; therefore, County of Orange Standard Conditions SC TRA-1 would not apply to this alternative.

[9] The projected cumulative (2026) CNEL values for the Baseline (2016) and the 2026 No Project, Proposed Project, and Alternative 1 are shown in Table 4.7-12. The change in 2026 CNEL values compared to the 2016 Baseline are shown in Table 4.7-13.

Tribal Cultural Resources

No known tribal cultural resources are present on the Airport. The potential impacts of Alternative 3 would be less than those identified for the Proposed Project and Alternative 1 because there would be substantially less ground disturbance. This would reduce the likelihood of discovering buried resources. Although there is always the possibility that undiscovered intact tribal cultural resources may be present below the surface in native sediments, the depth of construction and demolition for Alternative 3 would be very limited; and impact to native soils is not anticipated. The loss of tribal cultural resources over time throughout the region would be considered a cumulative impact. The limited ground disturbance associated with the cumulative projects is expected to be very low. Therefore, the potential for a substantial accelerated loss of tribal cultural resources is very low. Additionally, Alternative 3 would be required to implement MN TCR-1, which requires Native American monitoring when construction activities would disturb native soils. This would reduce potential direct and cumulative impacts to less than significant levels should buried resources of that nature be discovered as part of grading activities.

Utilities and Service Systems

Alternative 3, would be limited to improvements undertaken to correct existing nonstandard conditions at JWA. As with the Proposed Project and Alternative 1, the existing service providers (i.e., Mesa Water and Orange County Sanitation District) would continue to provide the same services under Alternative 3. Alternative 3 would result in a slightly greater increase in general aviation users when compared to the Proposed Project and Alternative 1. Under Alternative 3, the number of persons using general aviation facilities would increase by an estimated 115 persons per day, compared to increases of 28 persons per day for the Proposed Project, 42 persons per day for Alternative 1, and 185 persons per day for the No Project Alternative. Although Alternative 3 would not require new connections to water or wastewater systems, the increased number of users at the existing facilities would potentially result in an increased demand for water and in wastewater generation. Assuming the demand is directly associated with the number of users, Alternative 3 would result in a 6.1 percent increase in water demand associated with general aviation activities. However, general aviation only represents a small portion of Airport users. This increase represents approximately 0.003 percent of the total number of commercial passengers projected to use the Airport in 2026 based on the passenger cap approved as part of the 2014 Settlement Agreement.[10] As discussed in Section 4.10, based on Final EIR 617 prepared for the 2014 Settlement Agreement Amendment, this incremental increase would be within the water and wastewater planning parameters for the Airport. Therefore, Alternative 3 would not exceed the wastewater treatment requirements of the Santa Ana RWQCB or result in discharges that would require the construction of new wastewater treatment facilities or the expansion of existing facilities. Alternative 3 would not result in a significant impact pertaining to wastewater or require additional water supplies or create the need for new or expanded water treatment facilities. Similarly, the cumulative impacts would be less than significant because the anticipated increased growth at the Airport associated with the 2014 Settlement Agreement Amendment has been incorporated into the long-range planning for the service providers.

[10] The background on the 1985 Settlement Agreement Amendment and subsequent amendments is discussed in Section 2.6.3 of this Program EIR.

Water Quality

Short-Term Construction Impacts

As previously described, Alternative 3 would be limited to improvements and changes undertaken to correct existing nonstandard conditions at JWA. As with the Proposed Project and Alternative 1, impacts associated with demolition and construction activities related to the relocation and removal of nonstandard conditions would be limited to specific demolition and construction sites. As with the Proposed Project and Alternative 1, demolition and construction activities associated with the relocation and removal of nonstandard conditions under Alternative 3 have the potential to generate pollutants that may enter storm water runoff. However, Alternative 3 would involve substantially less construction activity, and the potential for short-term construction impacts related to water quality would be reduced compared to the Proposed Project and Alternative 1. Alternative 3 would be required to comply with RR WQ-1 and RR WQ-2 for all demolition and construction activities to prevent and/or minimize pollutants in the storm water.

No cumulative short-term water quality impacts are anticipated because the construction schedules would not overlap. The cumulative projects that include physical improvements are expected to be completed prior to the initiation of Alternative 3 improvements. Additionally, all the cumulative construction projects are required to comply with the regulatory requirements, such as the NPDES Construction General Permit, and the County standard conditions pertaining to water quality. This would include the implementation of BMPs.

Long-Term Operational Impacts

As with the Proposed Project and Alternative 1, general aviation areas and activities under Alternative 3 would continue consistent with the existing operational procedures at JWA. Additionally, relocation and removal of nonstandard conditions encompassed under Alternative 3 would not substantially change the extent of impervious surfaces and would not involve changes in the volume of runoff generated at the Airport. As discussed for the Proposed Project and Alternative 1, water quality BMPs are in place for petrochemical pollutants, and no substantial increase in the volume of runoff would be generated at JWA due to construction and operation of Alternative 3. Therefore, consistent with the Proposed Project and Alternative 1, it is anticipated that continued implementation of NPDES-related BMPs would accommodate the petrochemical pollutants within the existing runoff flows. Based on the historic effectiveness of water quality BMPs, compliance with RR WQ-3 and RR WQ-4 would prevent or minimize pollutants in the storm water. Additionally, Alternative 3 would not violate water quality standards, would not contribute substantial additional sources of polluted runoff, and would not otherwise substantially degrade water quality and would result in a less than significant impact.

Cumulative long-term operational impacts with Alternative 3 would be similar to those associated with the No Project Alternative because limited improvements would be provided. The existing BMPs and other practices that are implemented at the Airport would continue to be implemented as part of the MS4 Permit regulations and the Industrial General Permit for the Airport and in compliance with pertinent County Code regulations. The Wickland Pipeline project is incorporating additional design measures, such as installation of an oil/water separator and a containment system to protect against releases of petrochemicals into the runoff. The existing facilities and Airport practices would reduce pollutants in the storm water that may

be generated by general and commercial aviation activities at JWA. Thus, cumulative water quality impacts would be less than significant.

5.4.3 NO PROJECT ALTERNATIVE

The No Project Alternative would not implement any improvements or modifications to the general aviation facilities at the Airport. This alternative assumes no change would occur in the current (2016) aircraft fleet mix; therefore, estimated capacity of the existing facilities is approximately 596 based aircraft at the Airport. With the No Project Alternative, the capacity would remain at 596 based aircraft. Table 5-18 provides a comparison of the types of facilities available at the Airport and the current use of those facilities. The excess capacity for tie-down area (FBO and County) is also projected to remain. Exhibit 5-4 depicts the distribution of facilities on the Airport, which would remain unchanged for the No Project Alternative.

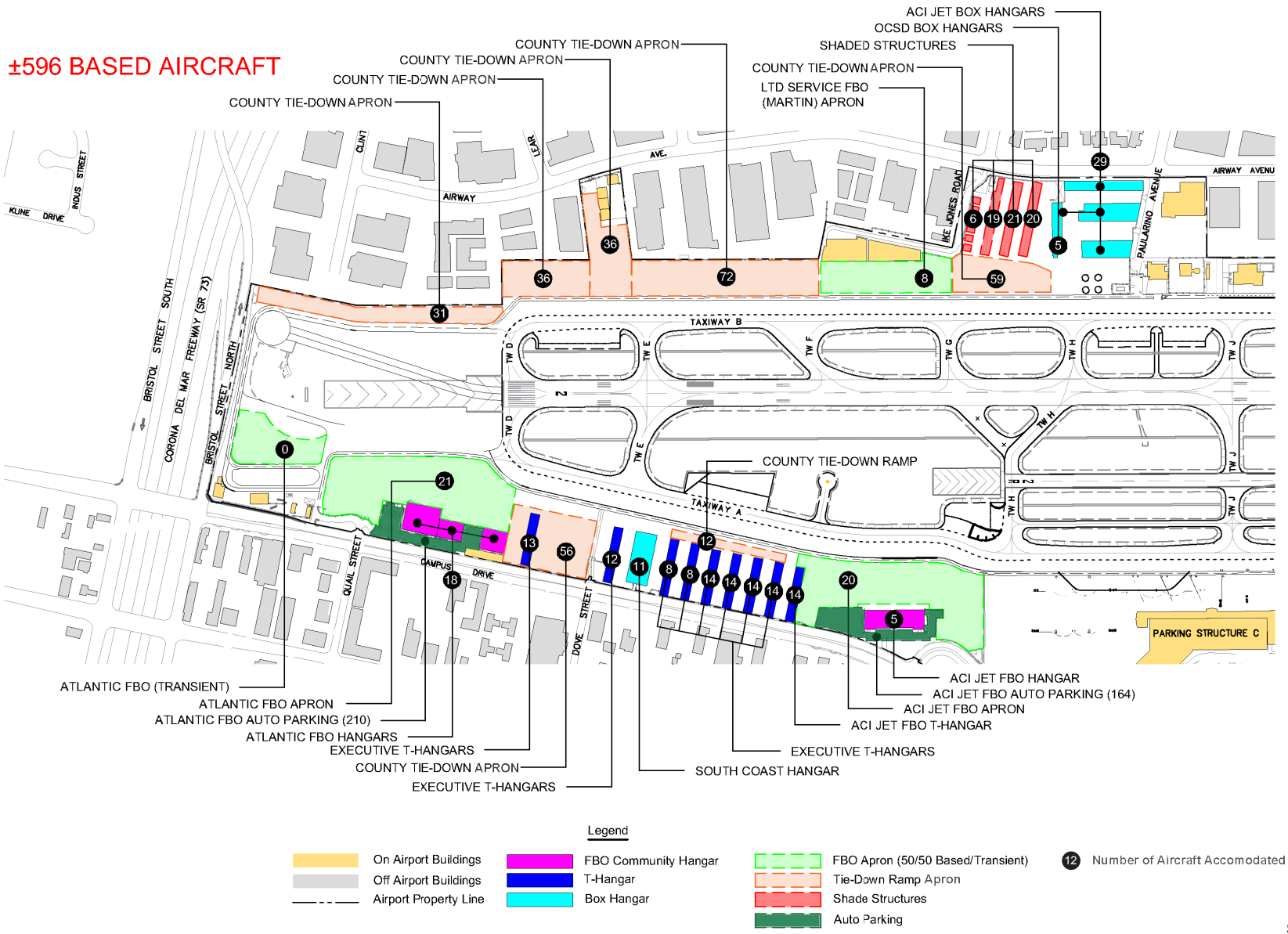
TABLE 5-18
FACILITIES COMPARISON OF EXISTING CONDITIONS (2016)
AND NO PROJECT ALTERNATIVE

Facility	Aircraft Parking Spaces			Change (+/-)[a]	
	Existing Capacity	Currently Used	No Project Alternative	Compared to Capacity	Compared to Currently Used
Tie-Down Apron	302	222	302	0	80
T-Hangars	111	111	111	0	0
Box Hangars	45	45	45	0	0
FBO/Community Hangars	23	23	23	0	0
Shade Structures	66	66	66	0	0
FBO Apron Spaces	49	15	49	0	34
Total	**596**	**482**	**596**	0	**114**
Source: AECOM 2018b (Appendix D to this Program EIR)					

Aviation Forecasts for the No Project Alternative

The aviation forecasts for the No Project Alternative are provided in Tables 5-19 through 5-21. The number of based aircraft for each type of aircraft increases following the growth estimated from the unconstrained forecast until it reaches the maximum capacity identified under the capacity analysis.[11] Once the number of based aircraft demand for each type of aircraft reaches the maximum capacity, the growth for the corresponding type of aircraft is constrained. Table 5-19 identifies the 2016 baseline information and the projected 2026 forecasts by type of aircraft; Table 5-20 identifies the number of general aviation operations; and Table 5-21 provides the operations forecast by engine type. As shown in Table 5-19, the capacity of the

[11] The unconstrained aviation forecast reflects trends in the aviation community and are discussed in Section 3.5 of this Program EIR.



Source: AECOM 2018

Conceptual Facilities Layout – No Project Alternative

Exhibit 5-4

John Wayne Airport General Aviation Improvement Program

JOHN WAYNE AIRPORT ORANGE COUNTY

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Airport would remain at 596 aircraft; however, because the types of facilities do not fully align with the demand, in 2026 the total number of based aircraft is projected to be 505 aircraft.

TABLE 5-19
JWA CONSTRAINED FORECAST BASED AIRCRAFT BY TYPE
NO PROJECT ALTERNATIVE

Year	Fixed Wing Piston[a]		Fixed Wing Turbine		Helicopter	Total Based Aircraft
	Single Engine	Multi-Engine	Turboprop	Turbo Jet		
Capacity	440	48	26	65	17	**596**
2016	339	35	26	65	17	**482**
2026[b]	360	37	26	65	17	**505**

Note: Fleet mix distributions may not match sum totals due to rounding. The type and size of aircraft parked at an FBO facility may vary based on demand and can change frequently; therefore, the actual number and type of aircraft at the Airport may differ from what is shown in this table.

[a] The based aircraft totals for single engine include one glider.

[b] The theoretical capacity of the No Project Alternative would be the same as the Baseline (2016); however, for the evaluation of potential impacts the 2026 forecasts reflect the fleet mix of the aircraft that would be reasonably accommodated at the Airport.

Source: AECOM 2018b (Appendix D to this Program EIR)

TABLE 5-20
JWA CONSTRAINED FORECAST GENERAL AVIATION AND
AIR TAXI OPERATIONS – NO PROJECT ALTERNATIVE

Year	Air Taxi	General Aviation		Total Operations[a]
		Itinerant	Local	
2016	15,400	90,900	86,500	**192,800**
2026	18,600	95,000	87,400	**201,000**

[a] An operation is defined as either a takeoff or landing, each counting as one operation.

Source: AECOM 2018b (Appendix D to this Program EIR)

TABLE 5-21
JWA CONSTRAINED FORECAST OPERATIONS
BY AIRCRAFT ENGINE TYPE – NO PROJECT ALTERNATIVE

Year	Piston	Turbine	Jet	Helicopter/Other	Total Operations[a]
2016	147,300	9,800	31,800	3,900	192,800
2026	147,000	10,900	38,300	4,800	**201,000**

[a] An operation is defined as either a takeoff or landing, each counting as one operation.

Source: AECOM 2018b (Appendix D to this Program EIR)

Impact Evaluation[12]

Aesthetics

The No Project Alternative would result in the continued use of existing general aviation facilities at JWA. Accordingly, the sources of light and glare at the site would not change. Compared to the Proposed Project and Alternative 1, the potential for nighttime lighting impacts would be less because construction activities would not occur. However, this alternative would not provide for new facilities. As noted in the *Facilities Condition Assessment Report John Wayne Airport (SNA)-General Aviation Areas* (AECOM 2017b), many of the buildings are older and in need of repair. If improvements are not made, these facilities would continue to deteriorate. The No Project Alternative does not provide for the visual enhancement that would be derived from the Proposed Project and Alternative 1; however, the No Project Alternative would not preclude continued maintenance of the existing buildings. Therefore, the No Project Alternative would have less impact in the short-term (i.e., no construction impacts) than the Proposed Project and Alternative 1. However, in the long-term the No Project Alternative would not be as beneficial as the scenarios with improvements because the older buildings, which have been assessed as needing substantial upgrades (AECOM 2017b), would not be replaced with new facilities. With time, the visual quality of the Airport would deteriorate; however, the overall visual character of the site would remain similar to existing conditions. Impacts associated with substantial degrading of visual quality would be less than significant under Threshold 4.1-1. Additionally, no new sources of light and glare would occur; therefore, the impact would be less than significant under Threshold 4.1-2. Since the No Project Alternative would not include any construction activities, it would not contribute to short-term cumulative aesthetic impacts. Additionally, as noted above, long-term aesthetic impacts (both direct and cumulative) for the No Project Alternative are also less than significant.

Air Quality

Short-Term Construction Impacts

The No Project Alternative would not involve any construction so there would be no construction air quality impacts and it would not contribute to cumulative short-term air quality impacts. The construction data for the GAIP provided by JWA staff to SCAQMD would have overstated the construction emissions associated with the No Project Alternative because no construction is proposed. Therefore, for short-term impacts, the No Project Alternative would not conflict with the AQMP and impacts would be less than significant.

Long-Term Operational Impacts

Air emissions are most directly related to the type of aircraft (and associated GSE and APU) and the number of operations at the Airport. The No Project Alternative allows more aircraft to be based at the Airport and would have more operations. Tables 5-1 and 5-2 provide a comparison of each alternative for these key aspects.

[12] None of the minimization or mitigation measures recommended for the Proposed Project and Alternative 1 would be applicable to the No Project.

The FAA's Aviation Environmental Design Tool ("AEDT") version 2d was used to model operational air quality emissions for the No Project Alternative. The AEDT was used to model general aviation aircraft only operations at the Airport, along with GSE and APU usage for the No Project General Aviation Only (2026) scenario. Table 5-22 provides the difference between the model estimates of existing criteria pollutant emissions for general aviation aircraft and the projected emissions associated with the No Project Alternative (i.e., net emissions associated with the No Project Alternative) in pounds per day. As shown, none of the criteria pollutants associated with the No Project Alternative would exceed SCAQMD thresholds. Therefore, the impacts would be less than significant under Thresholds 4.2-2.

TABLE 5-22
EMISSIONS INCREASES BETWEEN BASELINE AND THE NO PROJECT ALTERNATIVE FOR GENERAL AVIATION OPERATIONS (2026)

Source	Daily Emissions (pounds per day)					
	CO	**VOC**	**NO_x**	**SO_x**	**PM_{10}**	**$PM_{2.5}$**
Net No Project Emissions	244.1	48.3	39.3	7.3	1.3	1.3
SCAQMD Mass Daily Significance Threshold	*550*	*55*	55	*150*	*150*	*55*
SCAQMD Localized Significance Threshold	*3,888*	*N/A*	223	*N/A*	*21*	*9*
Exceedance of the SCAQMD Significant Threshold	**No**	**No**	**No**	**No**	**No**	**No**

Numbers may not sum to subtotals as shown, due to rounding.
Source: Landrum & Brown 2018

Similar to the Proposed Project and Alternative 1, the No Project Alternative would be consistent with the AQMP. As discussed in Section 4.2 and above, JWA staff coordinated with SCAQMD to ensure that aircraft operation data specific to the Airport were accounted for throughout the forecasted planning period for both the RTP/SCS and AQMP. Although some of the operations data would be slightly different, the overall impacts would be generally consistent as they pertain to air quality issues. As shown in Table 5-22, the emissions associated with the No Project Alternative are less than the significance threshold established by the SCAQMD. Therefore, the No Project Alternative would not result in a significant impact and would be consistent with the AQMP. Impacts would be less than significant under Threshold 4.2-1.

As previously noted, the same cumulative projects would be applicable to all scenarios. Although significant air quality impacts were associated with the 2014 Settlement Agreement Amendment, which has been identified as a cumulative project, the No Project Alternative would not contribute to a considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard. Neither the Proposed Project, Alternative 1, nor the No Project Alternative would exceed SCAQMD's thresholds for criteria pollutants. Although the No Project Alternative would generate slightly greater levels of criteria pollutants than the Proposed Project (comparison of Table 4.2-9 and Table 5-22), the No Project Alternative is consistent with the AQMP; therefore, the impacts of the No Project Alternative would also be less than significant under Threshold 4.2-3.

In 2026, the No Project Alternative would result in 8,200 additional aircraft operations compared to the Baseline (2016) number of operations (see Table 5-20). The associated increase in emissions of criteria pollutants (see Table 5-22) would result in a substantially smaller incremental increase in air pollutant emissions than the project studied in Final EIR 617. Thus, it is estimated that the TAC emissions would be lower in a similar proportion for the No Project Alternative since the TAC emissions are generally fractions of the VOC and PM emissions. Based on this analysis, the No Project Alternative would not expose sensitive receptors to substantial pollutant concentrations. Although the emissions of criteria pollutants, and therefore, TAC, would be slightly greater than the Proposed Project and Alternative 1, the No Project Alternative would not expose sensitive receptors to substantial pollutant concentrations. Similar to the Proposed Project and Alternative 1, the impacts associated with the No Project Alternative under Threshold 4.2-4 would be less than significant (see the discussion in Section 4.2, under Threshold 4.2-4 for additional discussion of TAC). Similar to the Proposed Project and Alternative 1, cumulative impacts with the No Project Alternative would be less than significant. Based on the guidance provided by the SCAQMD, projects that do not exceed the project-specific thresholds are not considered cumulatively significant.

Cultural and Scientific Resources

The No Project Alternative would not result in any construction activities; therefore, there would be no potential for impacts on unknown buried resources (i.e., archaeological and paleontological resources). This alternative would have no impacts to archaeological, paleontological, human remains, and historic resources under Thresholds 4.3-1 through 4.3-4, respectively. Although the impacts were identified as less than significant for the Proposed Project and Alternative 1, the potential for impacts would be less for the No Project Alternative. Since there would be no impacts, the No Project Alternative would not contribute to cumulative impacts.

Greenhouse Gas Emissions

The No Project Alternative does not propose any improvements so there would be no GHG emissions associated with construction activities. GHG impacts are considered exclusively cumulative impacts because climate change is a global phenomenon. As a result of the projected increase in operations between 2016 and 2026, the No Project Alternative would increase GHG emissions compared to Baseline (2016). As shown in Table 5-23, the net GHG emissions for the No Project Alternative would be substantially below the SCAQMD threshold for industrial uses (i.e., 10,000, annual $MTCO_2e$). The GHG emissions associated with the No Project Alternative would also be less than the emissions associated with the Proposed Project or Alternative 1 (the quantified net emissions for the Proposed Project and Alternative 1 are provided in Tables 4.4-5 and 4.4-8, respectively).

TABLE 5-23
GENERAL AVIATION OPERATIONAL EMISSIONS
BASELINE (2016) AND THE NO PROJECT ALTERNATIVE (2026)

Source	Annual Operational Emissions ($MTCO_2e$)
Incremental Increase in Operational Emissions	2,273
SCAQMD Threshold	**10,000**
Baseline Plus Proposed Project Exceed SCAQMD Threshold?	***No***
$MTCO_2e$: metric tons of carbon dioxide equivalent Source: Landrum & Brown 2018 (Appendix G).	

Although regulatory requirements (RR GHG-1 and RR GHG-2) would be applicable to the No Project Alternative because they are regulations, the No Project Alternative assumes no improvements. Therefore, the benefits associated with stricter building codes would not be realized. It is assumed that the application of mitigation and or minimization measures would be evaluated on a case by case basis if future improvements were to be implemented as part of routine maintenance. There would be no assurance that all the provisions applicable to the GAIP (Proposed Project and Alternative 1) would be implemented. However, based on emissions associated with the No Project Alternative, impacts would be less than significant under Threshold 4.4-1.

The No Project Alternative would implement applicable emissions-reducing strategies identified in CARB's Mobile Source Strategy and 2017 Scoping Plan, to the extent required by law. However, because no improvements are proposed, there would not be a mechanism to require modifications to existing facilities and practices (i.e., operational procedures). Although the No Project Alternative would not have "GAIP-facilitated development and uses", the provisions of MN GHG-1 (compliance with applicable provisions in JWA's CAP) could be included in future lease agreements. Some provisions of the CAP may get implemented in conjunction with maintenance in future years. Although, this approach would not ensure consistent and full implementation of the CAP, the No Project Alternative would not conflict with any applicable plan, policy or regulation established for reducing GHG emissions impacts and impacts would be less than significant under Threshold 4.4-2.

Hazards and Hazardous Materials

The No Project Alternative would result in the continued use of existing general aviation facilities at JWA. This would result in less potential for impact associated with LBP and ACM than the Proposed Project and Alternative 1, which would both involve the removal of buildings with small amounts of hazardous materials (i.e., LBP and ACM). Complying with regulatory requirements would reduce the potential of impact for the Proposed Project and Alternative 1. Since there would be no demolition or construction activities, the No Project Alternative would not contribute to direct or cumulative short-term impacts.

For the No Project Alternative, proper maintenance would be required to ensure hazardous materials onsite are not allowed to deteriorate. The potential impact is low with all alternatives. As with the Proposed Project and Alternative 1, the operational procedures associated with the handling, use, and transport of hazardous materials at the Airport would not change. Therefore, both direct and cumulative impacts would be less than significant under Thresholds 4.5-1 through 4.5-3.

Land Use and Planning

Short-Term Construction Impacts

The No Project Alternative would not lead to any changes or improvements to general aviation facilities at JWA. As a result, no construction activities are proposed under the No Project Alternative. Thus, there would be no short-term, temporary impacts to sensitive land uses due to construction activities.

Long-Term Operational Impacts

Unlike the Proposed Project and Alternative 1, the No Project Alternative would not result in the displacement of general aviation aircraft currently based at the Airport. The 114 aircraft parking spaces that are currently unused would be retained. As discussed above under the Aviation Forecasts for the No Project Alternative, the number of based aircraft would not utilize the full capacity because the types of facilities do not fully align with the demand. This is an inefficient use of the limited space at the Airport but would not result in a significant environmental impact under Threshold 4.6-1.

Similar to the Proposed Project and Alternative 1, the No Project Alternative would result in a similar increase in exposure of sensitive receptors to noise levels in excess of 65 CNEL. With the No Project Alternative, it is estimated approximately 10 additional residences would be included in the 65 CNEL; however, avigation easements are recorded for 7 of these units. As with the Proposed Project and Alternative 1, there would be three additional residential units being exposed to noise levels in excess of 65 CNEL that have not received sound attenuation and no avigation easement is recorded. These residences are located within the policy implementation line used in the JWA AELUP for establishing the Airport Noise Impact Zones. Final EIR 508 certified in conjunction with the 1985 Master Plan included an AIP, which offered sound attenuation for noise sensitive uses within the 1985 Master Plan 65 CNEL contour. These residences were included in the area covered by this program; however, one owner declined the offer and the remaining two did not respond after a genuine effort was made to offer insulation. Additionally, these units may be eligible for the mitigation project adopted in conjunction with Final EIR 617. Similar to the Proposed Project and Alternative 1, exposure of these residences to noise levels in excess of 65 CNEL would result in incompatible land uses, which would be a significant, unavoidable land use compatibility impact under Threshold 4.6-1.

Section 4.6.8 provides a discussion of the No Project Alternative cumulative land use impacts because it allows the future impacts associated with the GAIP (Proposed Project and Alternative 1) to be more easily understood because, unlike the Baseline (2016), it also includes the increased commercial carrier activities approved as part of the 2014 JWA Settlement Agreement Amendment. The noise contours for the 2026 cumulative scenarios are dominated by the

commercial carrier operations, and these will occur independently of the GAIP. The GAIP would make no changes to the commercial operations approved as part of the 2014 Settlement Agreement Amendment.

As shown in Table 4.6-11, in the cumulative scenario, the No Project Alternative would have a slightly greater number of residential units in the 65 CNEL contour when compared to the Baseline (2016) (i.e., 271 units compared to 247 units). As with all the cumulative scenarios, the increase in the number of units in the greater than 65 CNEL contour is substantially associated with the increased commercial carrier operations (2014 Settlement Agreement Amendment). For the units in the AIP that have received sound attenuation, the land use impacts would be less than significant. For those residential units where the homeowner has been offered sound attenuation, but it has not been implemented, the noise exposure would potentially result in interior and exterior noise levels in excess of policies adopted to avoid or mitigate an environmental effect. As discussed in Section 4.6,8, the significant cumulative land use impact has been identified in previous studies done for the Airport so it is not a new land use compatibility impact and noise attenuation programs (i.e., AIP and SIP) have been adopted. However, when the Board of Supervisors certified Final EIR 617 for the 2014 Settlement Agreement Amendment significant unavoidable land use compatibility impacts were identified because noise-sensitive uses would be located in an area exposed to future noise levels of 65 CNEL or greater. This significant cumulative impact would also be applicable to the No Project Alternative.

Noise

Short-Term Construction Impacts

The No Project Alternative would not involve any construction activities. Therefore, there would be no construction related noise impacts.

Long-Term Operational Impacts

Noise impacts are associated with the number of aircraft operations and the general aviation fleet mix. A review of Table 5-2 shows that the No Project Alternative would have incrementally more annual operations than the Baseline (2016), the Proposed Project, and Alternative 1 (192,800 for the Baseline, 167,900 for the Proposed Project, and 168,600 for Alternative 1 compared to 201,000 for the No Project Alternative). As shown in Table 5-3, there would be a decrease in piston engine aircraft operations. Additionally, there is a slight decrease in the number of turbine and jet operations compared with the Proposed Project and Alternative 1. However, there is an increase in the number of turbine and jet operations with the No Project Alternative compared to the existing conditions.

Table 4.7-7, provided in Section 4.7, Noise, presents an assessment of the change in noise values compared to baseline conditions that would be attributable to the Proposed Project, Alternative 1, and the No Project Alternative assuming the implementation of the GAIP improvements and projected changes in fleet mix and operations. This analysis shows that none of the increases at the NMS would result in a significant impact. See Section 4.7 for a full discussion of the noise standards used for identifying a significant noise impact; however, the most relevant standard is a noise increase of 1.5 CNEL or more at a sensitive receptor where the existing exposure is 65 CNEL or above. Only the close-in NMS 1S, 2S, 3S located in the Santa Ana Heights community in

the City of Newport Beach and NMST 8N located in the City of Irvine show noise levels above 65 CNEL for any case. However, it should be noted that NMST 8N is located in a commercial area with no nearby residences. Neither the Proposed Project, Alternative 1, nor the No Project Alternative would result in an increase near 1.5 CNEL. As discussed in Section 4.7, the change in general aviation operations from the Proposed Project, Alternative 1, and the No Project Alternative would have a negligible impact on the CNEL noise contours. Noise impacts associated with the No Project Alternative would also be less than significant.

Since the No Project Alternative does not provide for construction of new office space and the flight school, SC NOI-1 would not be applicable to this alternative. SC NOI-1 pertains to verifying the interior noise criteria as specified in the Noise Element and Land Use/Noise Compatibility Manual would be achieved.

Similar to the aviation noise, the changes in automobile traffic patterns caused by the No Project Alternative would be limited. Given the nominal changes in traffic noise levels on the adjacent roadways, changes in noise levels would not exceed the 1.5 CNEL increase along any roadway with the No Project Alternative. As shown in Tables 4.7-9 and 4.7-10 (provided in Section 4.7, Noise), no roadways with existing adjacent noise-sensitive uses are projected to experience a traffic noise level increase greater than 0.5 dB for either the Proposed Project or Alternative 1. Given how substantially below the threshold the increased noise levels are for the Proposed Project and Alternative 1, the No Project Alternative would not be expected to result in a significant traffic noise impact.

Section 4.7.8 provides a discussion of the cumulative noise impacts associated with the No Project Alternative. The cumulative (2026) noise contours are dominated by the commercial carrier operations, which will occur independently of the GAIP. The GAIP would make no changes to the commercial operations approved as part of the 2014 Settlement Agreement Amendment. With the No Project Alternative, cumulative noise impacts would be less than significant because none of the NMSs that exceed 65 CNEL in the baseline would experience an increase equal to or greater than 1.5 dB.[13] As discussed in Section 4.7.8, although an increase of greater than 1.5 dB is projected for NMSs 9N and 10N, the existing and projected noise levels would be below 60 CNEL; therefore, the threshold for the identification of a significant impact is a 5 dB or greater increase. These two NMSs do not have noise sensitive land uses nearby. No significant cumulative noise impacts would result with the No Project Alternative.

Transportation/Traffic

In 2026, the No Project Alternative would result in an incremental increase in the number of vehicle trips compared to the Baseline (2016), whereas the number of overall trips generated from the Proposed Project and Alternative 1 would decrease compared to Baseline (2016) conditions. The trip generations values are presented in Table 5-10, above. As shown, in the table, the No Project Alternative reflects an increase in operations and would result in 1,739 average daily trips by 2026 compared to 1,648 daily trip ends in the Baseline (2016) and 1,638 daily trips for the Proposed Project.

[13] The projected cumulative (2026) CNEL values for the Baseline (2016) and the 2026 No Project, Proposed Project, and Alternative 1 are shown in Table 4.7-12. The change in 2026 CNEL values compared to the 2016 Baseline are shown in Table 4.7-13.

As shown in Table 5-11, the No Project Alternative would result in an increase of 9.0 percent in the VMT when compared to the Baseline (2016). This is greater than the Proposed Project, which would reduce VMT by approximately 0.6 percent. However, as noted under the discussion of Alternative 3, the future (2026) traffic projections reflect the long-range growth in the region. Therefore, the future traffic volumes already include this growth and it would not be additive in 2026. None of the study area intersections were identified as operating at a deficient LOS in 2026; therefore, the No Project Alternative would not result in a significant traffic impact. The No Project Alternative does not propose any modifications to the Campus Drive and Quail Street intersection; therefore, County of Orange Standard Conditions SC TRA-1 would not apply to this alternative. As previously noted, the 2026 evaluation represents a cumulative evaluation. The No Project Alternative would not result in construction-related trips. Therefore, impacts for the No Project Alternative would be less than significant.

Tribal Cultural Resources

The No Project Alternative would not result in any construction activities; therefore, there would be no potential for direct or cumulative impacts on unknown buried tribal resources. This alternative would have less potential for impact than the Proposed Project and Alternative 1.

Utilities and Service Systems

The No Project Alternative would not lead to any changes or improvements to general aviation facilities at JWA. The existing service providers (i.e., Mesa Water and Orange County Sanitation District) would continue to provide the same services under the No Project Alternative. The No Project Alternative would result in a greater number of general aviation users when compared to the Proposed Project or Alternative 1. Under the No Project Alternative, the number of persons using general aviation facilities would increase by an estimated 185 persons per day, compared to increases of 28 persons per day for the Proposed Project and 42 persons per day for Alternative 1.

Although the No Project Alternative would not require new connections to water or wastewater systems, the increased number of users at the existing facilities would potentially result in an increase demand for water and in wastewater generation. Assuming the demand is directly associated with the number of users, the No Project Alternative would result in a 9.8 percent increase in water demand associated with general aviation activities. However, general aviation only represents a small portion of Airport users. This increase represents approximately 0.005 percent of the total number of commercial passengers projected to use the Airport in 2026 based on the passenger cap approved as part of the 2014 Settlement Agreement. As discussed in Section 4.10, based on Final EIR 617 prepared for the 2014 Settlement Agreement Amendment, this incremental increase would be within the water and wastewater planning parameters for the Airport. Therefore, the No Project Alternative would not exceed the wastewater treatment requirements of the Santa Ana RWQCB or result in discharges that would require the construction of new wastewater treatment facilities or the expansion of existing facilities. The No Project Alternative would not result in a significant impact pertaining to wastewater or require additional water supplies or create the need for new or expanded water treatment facilities.

As previously noted, the cumulative impacts would be less than significant because the anticipated increased growth at the Airport associated with the 2014 Settlement Agreement Amendment has been incorporated into the long-range planning for the service providers.

Water Quality

The No Project Alternative would result in the continued use of existing general aviation facilities at JWA. Accordingly, there would be no change in the concentration of petrochemicals associated with the operation of general aviation aircraft and automobiles and collected in the storm water runoff from JWA. JWA would continue to implement, monitor, and report on the effectiveness of all NPDES-related BMPs in compliance with the Industrial General Permit requirements. Impact to water quality compared to the existing conditions would not change; no mitigation is required.

Therefore, an increase in Airport operations under the No Project Alternative would not violate water quality standards, would not contribute substantial additional sources of polluted runoff, and would not otherwise substantially degrade water quality. The No Project Alternative would result in a less than significant impact, and no mitigation is required.

No contribution to cumulative short-term water quality impacts would occur because the No Project Alternative impact does not propose any construction activities. Additionally, all the cumulative construction projects are required to comply with the regulatory requirements, such as the NPDES Construction General Permit, and the County standard conditions pertaining to water quality. This would include the implementation of BMPs. Similarly, cumulative long-term operations would not be substantially changed from existing conditions because the BMPs and maintenance activities have been developed to ensure water quality impacts associated with the Airport operations do not result in significant impacts.

5.5 ENVIRONMENTALLY SUPERIOR ALTERNATIVE

CEQA requires the identification of an environmentally superior alternative. Section 15126.6(e)(2) of the State CEQA Guidelines states that, if the No Project Alternative is the environmentally superior alternative, then the EIR shall also identify an environmentally superior alternative among the other alternatives. The only significant, unavoidable impact associated with the GAIP (Proposed Project and Alternative 1) is the land use compatibility issue. A direct land use compatibility impact was identified because three residential units, without an avigation easement, that are not currently in the 65 CNEL contour would be included in the 65 to 70 CNEL contour with the GAIP. Although alternatives were evaluated that contained different fleet mix and number of general aviation operations, this impact is common to all alternatives, including the No Project Alternative. Additionally, a cumulative land use compatibility impact was identified for all alternatives, including the No Project Alternative. However, it should be noted, the residences identified as having both direct and cumulative land use compatibility impacts are included in the 65 CNEL contour from the 1985 Master Plan, which has been used in the AELUP for establishing the Airport Noise Impact Zones. Residences in this area were previously offered sound attenuation as part of the AIP, which was implemented in conjunction with the 1985 Master Plan. Additionally, in conjunction with the adoption of the 2014 Settlement Agreement Amendment and certification of Final EIR 617, significant unavoidable land use compatibility impacts were identified because noise-sensitive uses would be located in an area exposed to future (2026) noise levels of 65 CNEL or greater. Although a mitigation measure for

sound attenuation was approved, the Board of Supervisors made a finding of significant unavoidable impact addressing this issue because it could not be certain that the residences in question would be located in an area exposed to future (2026) noise levels of 65 CNEL or greater, would qualify for sound attenuation, and/or would accept the offered improvements. Development of an alternative that avoided the impact to the residences without mitigation including sound attenuation and the provision of avigation easements was not feasible. As discussed above, to the extent the residences qualify for sound attenuation and are offered attenuation, but decline sound attenuation, an avigation easement is not available absent payment for the easement. However, for purposes of determination of conformity with the State variance requirements, these residences would arguably be deemed in conformance with the noise guidelines (21 CCR 5014)[14] if a genuine effort is made to acoustically treat the residences, but the property owners refuse to take part in the program. The impact to the residences that have been offered sound attenuation, but have declined to take part in the program, and residences without avigation easements, has been a known impact associated with the long-term operation of the Airport and is associated even with the No Project Alternative. Therefore, it is an impact common to all alternatives.

Table 5-24 provides a summary comparison of the level of impacts for each alternative to the Proposed Project. The table provides a very brief statement on the level of impact for the Proposed Project for each threshold and then states if an alternative has "less than," the "same/similar," or "greater than" level of impact compared to the Proposed Project. The analysis is based on the level of impact after mitigation. Based on the evaluation contained in this EIR, the Proposed Project is the environmentally superior alternative because it incrementally reduces the impacts such as the quantity of criteria pollutant and GHG emissions, although these impacts were not identified as significant and unavoidable.

The level of environmental impact and ability to meet Project Objectives also needs to be considered by the decision-makers as part of the alternative selection process. A summary of the ability of the Proposed Project and the alternatives to meet the Project Objectives is presented in Table 5-25. The alternative that most fully met the Project Objectives is Alternative 1. The following gives a brief explanation of the rating for each of the objectives.

To enhance safe and secure operations

The Proposed Project and Alternatives 1 through 3 all provide improvements to enhance the safe and secure operations at the Airport. Each of these scenarios would eliminate current non-standard features. The No Project Alternative was identified as not meeting this objective because it does not correct any existing non-standard features. This is not to say that the No Project Alternative would lead to safety concerns, rather it does not provide any improvements.

[14] 21 CCR 5014 is part of the California Airport Noise Standards, which pertains to incompatible land uses within the airport noise boundary. This section of the regulations identifies when residences in an airport noise impact area can be found to be compatible. The following are two provision in the regulation that would be applicable to JWA:

> (a)(1) an avigation easement for aircraft noise has been acquired by the airport proprietor; and
>
> (a)(4) if the airport proprietor has made a genuine effort as determined by the department in accordance with adopted land use compatibility plans and appropriate laws and regulations to acoustically treat residences exposed to an exterior CNEL less than 80 dB (75 dB if the residence has an exterior normally occupiable private habitable area such as a backyard, patio, or balcony) or acquire avigation easements, or both, for the residences involved, but the property owners have refused to take part in the program.

To utilize limited land area efficiently and economically

The limited size of the Airport is a continual constraint on the meeting all the demands for air travel in Orange County. The Proposed Project and Alternatives 1 and 2 would fully meet this objective because the sizing of the facilities would be responsive to market trends and would fully utilize the facilities at the Airport. Both Alternative 3 and the No Project Alternative only partially fulfill this objective because both of these scenarios would result in facilities going unused because they are not responsive to the type of facilities required (i.e., tie-down area for more small aircraft than there is demand for).

To enhance compatibility between general and commercial aviation operations

None of the scenarios are able to fully meet the objective of compatibility between general and commercial aviation operations. Alternative 3 and the No Project Alternative would maintain the current operations with a portion of a full service FBO on the west side of the Airport. This necessitates the need to tow aircraft across the airfield and cross Runway 20R/2L, which is used by commercial carriers. Additionally, these two alternatives would retain the non-standard features at the Airport. The Proposed Project and Alternatives 1 and 2 would eliminate the non-standard features and would minimize the need to tow aircraft across the runway because the FBO sites would be consolidated. These three scenarios would provide the self-serve fueling station on the west side, which would require aircraft from the east side to cross over to the west side of the Airport. However, aircraft on the east side, that choose not to use the west side self-service fueling station, would still have access to fuel through the east side FBOs.

To embrace flexibility to allow for technological advances and market trends

One of the distinguishing features of Alternative 1 is the inclusion of a greater number of common hangars. This allows greater flexibility to respond to market trends should the general aviation fleet mix change in future years. This allows Alternative 1 to fully meet this objective. The Proposed Project and Alternative 2 enhance the ability to meet market trends compared to existing conditions but would potentially not be as flexible in the future. Alternative 3 and the No Project Alternative would not meet this objective because they do not provide improvements to respond to the current market trend.

To maximize economic, self-sustaining, revenue-producing facilities

The Proposed Project and Alternatives 1 and 2 fully meet this objective because the sizing of the facilities would be responsive to market trends and would fully utilize the facilities at the Airport. This would allow the County the ability to maximize the area that would support revenue-producing facilities. Both Alternative 3 and the No Project Alternative only partially fulfill this objective because both of these scenarios would result in area dedicated to general aviation going unused because the development is not responsive to the type of facilities required (i.e., tie-down area for more small aircraft than there is demand for).

To assess the ability of existing infrastructure to support general aviation facilities

As discussed in Section 4.10, Utilities and the NOP (provided in Appendix A), the infrastructure is in place to support the general aviation activities at the Airport. Therefore, all of the scenarios fully meet this objective.

TABLE 5-24
SUMMARY COMPARISON OF POTENTIAL IMPACTS BY ALTERNATIVE

Threshold	Proposed Project	Alternative 1	Alternative 2	Alternative 3	No Project
AESTHETICS (Section 4.1)					
4.1-1 Would the project substantially degrade the existing visual character or quality of the site and its surroundings?	There would be short-term visual impacts associated with construction; however, given the industrial nature of the site, these impacts would be less than significant. Although new buildings would provide a visual benefit by replacing the older buildings, the overall visual character of the site would not be substantially altered. Impacts would be less than significant.	Impacts, both short-term and long-term would be similar to the Proposed Project. Development on the east side would be slightly more intense due to the third full service FBO; however, impacts would be less than significant.	Impacts, both short-term and long-term would be similar to the Proposed Project. Development on the east side would be slightly more intense due to the two full service FBO; however, there would be less development on the west side Impacts would be less than significant.	Slightly greater than the Proposed Project. Minimal short-term construction impacts. Very little visual change from the existing condition. Does not provide for upgrading of old buildings provided by the Proposed Project. However, it would not substantially degrade visual quality and impacts would be less than significant.	Slightly greater than the Proposed Project. No short-term visual construction impacts. Long-term, no change from the existing condition. Does not provide for upgrading of old buildings provided by the Proposed Project However, it would not substantially degrade visual quality and impacts would be less than significant.
4.1-2 Would the project create a new source of substantial light or glare, which would adversely affect day or nighttime views in the area?	Any new lighting would be required to comply with regulatory requirements for light and glare for uses at an airport. Impacts would be less than significant.	The same as the Proposed Project. Impacts would be less than significant.	The same as the Proposed Project. Impacts would be less than significant.	Similar to the Proposed Project with minimal changes from existing conditions. Impacts would be less than significant.	Similar to the Proposed Project with no changes from existing conditions. Impacts would be less than significant.
AIR QUALITY (Section 4.2)					
4.2-1: Would the project conflict with or obstruct implementation of the applicable air quality plan?	GAIP construction emissions and operational emissions were accounted for in the AQMP. Impacts would be less than significant	The same as the Proposed Project. Alternative 1 would be consistent with the AQMP. Impacts would be less than significant.	The same as the Proposed Project. Alternative 2 would be consistent with the AQMP. Impacts would be less than significant.	The same as the Proposed Project, Alternative 3 would be consistent with the AQMP. Impacts would be less than significant.	The same as the Proposed Project, the No Project Alternative would be consistent with the AQMP. Impacts would be less than significant.

TABLE 5-24
SUMMARY COMPARISON OF POTENTIAL IMPACTS BY ALTERNATIVE

Threshold	Proposed Project	Alternative 1	Alternative 2	Alternative 3	No Project
4.2-2: Would the project violate any air quality standard or contribute substantially to an existing or projected air quality violation?	Construction emissions—Impacts would be less than significant with implementation of mitigation (use of Tier 4 construction equipment) Operational emissions of criteria pollutants would be below thresholds established by the SCAQMD for the South Coast Air Basin (SoCAB) and less than significant.	Slightly greater than the Proposed Project. However, similar to the Proposed Project impacts would be less than significant with mitigation for construction emissions. Operational emissions of criteria pollutants would be below thresholds established by the SCAQMD for the SoCAB and less than significant.	Slightly greater than the Proposed Project. However, similar to the Proposed Project impacts would be less than significant with mitigation for construction emissions. Operational emissions of criteria pollutants would be below thresholds established by the SCAQMD for the SoCAB and less than significant.	Less than the Proposed Project for construction emissions. No mitigation required. Operational emissions would be greater than the Proposed Project but would also be below SCAQMD threshold and less than significant.	Less than the Proposed Project for construction emissions because no construction is proposed (i.e., no impact). Operational emissions would be greater than the Proposed Project but would also be below SCAQMD thresholds and less than significant.
4.2-3: Would the project result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or State Ambient Air Quality Standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?	The Proposed Project would not exceed the project-specific thresholds with mitigation; therefore, it would not result in cumulatively considerable net increase of any criteria pollutant. Impacts would be less than significant, with mitigation for construction emissions.	Similar to the Proposed Project, it would not result in cumulatively considerable net increase of any criteria pollutant. Impacts would be less than significant, with mitigation for construction emissions.	Similar to the Proposed Project, it would not result in cumulatively considerable net increase of any criteria pollutant. Impacts would be less than significant, with mitigation for construction emissions.	Similar to the Proposed Project, it would not result in cumulatively considerable net increase of any criteria pollutant. Impacts would be less than significant; however, the contribution from construction emissions is less than the Proposed Project and no mitigation is required.	Similar to the Proposed Project, it would not result in cumulatively considerable net increase of any criteria pollutant from operational emissions. Impacts would be less than significant. There would be no contribution from construction emissions; therefore, the impact is less than the Proposed Project.

TABLE 5-24
SUMMARY COMPARISON OF POTENTIAL IMPACTS BY ALTERNATIVE

Threshold	Proposed Project	Alternative 1	Alternative 2	Alternative 3	No Project
4.2-4: Would the project expose sensitive receptors to substantial pollutant concentrations?	Emissions would be less than the SCAQMD thresholds of significance for all criteria pollutants. Further, the Proposed Project would not result in substantial concentrations of toxic air contaminants. Impacts would be less than significant.	Slightly greater than the Proposed Project. However, similar to the Proposed Project, emissions would be less than the SCAQMD thresholds of significance for all criteria pollutants. Further, Alternative 1 would not result in substantial concentrations of toxic air contaminants. Impacts would be less than significant	Slightly greater than the Proposed Project. However, similar to the Proposed Project. Impacts would be less than significant.	Slightly greater than the Proposed Project. However, similar to the Proposed Project. Impacts would be less than significant.	Slightly greater than the Proposed Project. However, similar to the Proposed Project. Impacts would be less than significant.
CULTURAL/SCIENTIFIC RESOURCES (Section 4.3)					
4.3-1: Would the Project cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?	Implementation of SC CULT-1 would be archaeological monitoring during grading activities to avoid potential impacts to archaeological resource. Impacts would be less than significant.	The same as the Proposed Project. Impacts would be less than significant.	The same as the Proposed Project. Impacts would be less than significant.	Less than the Proposed Project due to the limited nature of the improvements and low probability of disturbing native soil. Impacts would be less than significant.	Less than the Proposed Project. No construction activities are proposed. No impacts would occur.
4.3-2: Would the Project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	Implementation of SC CULT-2 would require paleontological monitoring during grading activities to avoid potential impacts to a unique paleontological resource or site. No impacts to unique geologic features would occur and no mitigation is required. Impacts would be less than significant.	The same as the Proposed Project. Impacts would be less than significant.	The same as the Proposed Project. Impacts would be less than significant.	Less than the Proposed Project due to the limited nature of the improvements and low probability of disturbing native soil. Impacts would be less than significant.	Less than the proposed project. No construction activities are proposed. No impacts would occur.

TABLE 5-24
SUMMARY COMPARISON OF POTENTIAL IMPACTS BY ALTERNATIVE

Threshold	Proposed Project	Alternative 1	Alternative 2	Alternative 3	No Project
4.3-3: Would the Project disturb any human remains, including those interred outside of dedicated cemeteries?	Implementation of RR CULT-1 would be required during grading activities to minimize potential impacts to human remains. Impacts would be less than significant.	The same as the Proposed Project. Impacts would be less than significant.	The same as the Proposed Project. Impacts would be less than significant.	Less than the Proposed Project due to the limited nature of the improvements and low probability of disturbing native soil. Impacts would be less than significant.	Less than the proposed project. No construction activities are proposed. No impacts would occur.
4.3-4: Would the Project cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?	No impacts to historical resources would occur due to the Proposed Project.	The same as the Proposed Project. No impacts would occur.	The same as the Proposed Project. No impacts would occur.	The same as the Proposed Project. No impacts would occur.	The same as the Proposed Project. No construction activities are proposed. No impacts would occur.
GREENHOUSE GAS EMISSIONS (Section 4.4)					
4.4-1: Would the project generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	The Proposed Project (2026) would generate greenhouse gas emissions beyond those identified for the Baseline (2016). However, the net emissions would be substantially below the SCAQMD threshold for industrial uses. Impacts would be less than significant.	Slightly greater than the Proposed Project. However, similar to the Proposed Project, emissions would be substantially below the SCAQMD threshold for industrial uses. Impacts would be less than significant.	Slightly greater than the Proposed Project. However, similar to the Proposed Project, emissions would be substantially below the SCAQMD threshold for industrial uses. Impacts would be less than significant.	Slightly less than the Proposed Project. However, similar to the Proposed Project, emissions would be substantially below the SCAQMD threshold for industrial uses. Impacts would be less than significant.	Slightly less than the Proposed Project. However, similar to the Proposed Project, emissions would be substantially below the SCAQMD threshold for industrial uses. Impacts would be less than significant.
4.4-2: Would the project conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	The Proposed Project would implement applicable emissions-reducing strategies identified in CARB's Mobile Source Strategy and 2017 Scoping Plan. GAIP-facilitated development and uses would be required to	Same as the Proposed Project. Impacts would be less than significant.	Same as the Proposed Project. Impacts would be less than significant.	Slightly greater than the Proposed Project because there would not be a mechanism to fully implement the provisions of the CAP; however, impacts would be less than significant.	Slightly greater than the Proposed Project because there would not be a mechanism to fully implement the provisions of the CAP; however, impacts would be less than significant.

TABLE 5-24
SUMMARY COMPARISON OF POTENTIAL IMPACTS BY ALTERNATIVE

Threshold	Proposed Project	Alternative 1	Alternative 2	Alternative 3	No Project
	comply with applicable provisions in JWA's CAP. There would be no conflicts with any applicable plan, policy or regulation established for reducing GHG emissions impacts and impacts would be less than significant.				
HAZARDS AND HAZARDOUS MATERIALS (Section 4.5)					
4.5-1: Would the project create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials? **4.5-2:** Would the project create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	There would be short-term use, storage, and handling of hazardous materials related to construction; however, by adhering to existing federal, State, and local regulatory requirements and through compliance with the County's SC, impacts would be less than significant. Operation and maintenance activities would be consistent with the existing conditions at the Airport and continue adherence to safety protocols and compliance with applicable regulations. Impacts would be less than significant.	The same as the Proposed Project. Impacts would be less than significant.	The same as the Proposed Project. Impacts would be less than significant.	Less than the Proposed Project due to the limited nature of the improvements. Impacts would be less than significant.	Less than the proposed project. No construction activities are proposed; however, proper maintenance would be required to avoid potential deterioration of hazardous materials (i.e., LBP and ACM). Impacts would be less than significant.

TABLE 5-24
SUMMARY COMPARISON OF POTENTIAL IMPACTS BY ALTERNATIVE

Threshold	Proposed Project	Alternative 1	Alternative 2	Alternative 3	No Project
4.5-3 Would the project emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or wastes within one-quarter mile of an existing or proposed school?	Delivery routes would not be altered or require substantially greater quantities of fuel being delivered to the Airport. All handling of hazardous materials would continue in full compliance with applicable codes and adopted safety programs currently in operation to reduce potential health risks related to handling of hazardous materials and continue to reduce the potential for risk of exposure to schools in proximity to the Airport. Impacts would be less than significant.	The same as the Proposed Project. Impacts would be less than significant.	The same as the Proposed Project. Impacts would be less than significant.	Less than the Proposed Project. Impacts would be less than significant.	Less than the proposed project. No construction activities are proposed. No impacts would occur.
LAND USE AND PLANNING (Section 4.6)					
4.6-1: Would the project conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	The Proposed Project would result in three residential units without avigation easement being exposed to noise levels in excess of 65 CNEL. This would be a significant land use compatibility impact.	Similar to the Proposed Project. Significant Impact.	Similar to the Proposed Project. Significant Impact.	Similar to the Proposed Project. Significant Impact.	Similar to the Proposed Project. Significant Impact.

TABLE 5-24
SUMMARY COMPARISON OF POTENTIAL IMPACTS BY ALTERNATIVE

Threshold	Proposed Project	Alternative 1	Alternative 2	Alternative 3	No Project
NOISE (Section 4.7)					
4.7-1: Would the project expose persons to or generate noise levels in excess of standards established in a local general plan or noise ordinance or applicable standards of other agencies? **4.7-2:** Would the project cause substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project? **4.7-4:** Would the project expose people residing or working within an airport land use plan area to excessive noise levels?	The Proposed Project would result in minor increases in aviation noise levels compared to Baseline (2016); however, noise thresholds are not exceeded. Impacts would be less than significant. Redistribution in traffic would result in increased traffic on the west side of the Airport, which would result in an incremental increase in traffic noise levels. Increases would not exceed thresholds and would be less than significant.	The same as the Proposed Project. Impacts would be less than significant.	Aviation noise would be similar to the Proposed Project. Traffic volumes would incrementally increase on the east side of the Airport and be reduced on the west side of the Airport. Aviation and traffic noise impacts would be less than significant.	Aviation noise would be similar to the Proposed Project. Impacts would be less than significant. Traffic volumes and associated noise would not change substantially from the Baseline (2016) and impacts would be less than significant.	Aviation noise would be similar to the Proposed Project. Impacts would be less than significant. Traffic volumes and associated noise would not change substantially from the Baseline (2016) and impacts would be less than significant.
4.7-3: Would the project cause a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	Nighttime construction activities may be required. However, the proximity of the closest residences to the construction area and the intervening commercial buildings would provide enough attenuation that construction noise impacts would be less than significant.	The same as the Proposed Project. Impacts would be less than significant.	The same as the Proposed Project. Impacts would be less than significant.	Less than the Proposed Project because substantially less construction would be required reducing potential for nighttime construction. However, similar to the Proposed Project, impacts would be less than significant.	With no construction activities, there would be no temporary noise impacts.

TABLE 5-24
SUMMARY COMPARISON OF POTENTIAL IMPACTS BY ALTERNATIVE

Threshold	Proposed Project	Alternative 1	Alternative 2	Alternative 3	No Project
TRANSPORTATION/TRAFFIC (Section 4.8)					
4.8-1: Would the project conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?	The Proposed Project would generate overall fewer trips than the Baseline (2016), would not conflict with adopted plans, ordinances, or policies establishing measures of effectiveness for the circulation system, and would not cause any change in LOS at the study area intersections. No conflicts with alternative modes of transportation would result. Impacts would be less than significant.	Slightly greater than the Proposed Project. Incremental increase in the number of trips compared to the Proposed Project. Impacts would be less than significant.	Similar to the Proposed Project. Impacts would be less than significant.	Slightly greater than the Proposed Project. Incremental increase in the number of trips compared to the Proposed Project. Impacts would be less than significant.	Slightly greater than the Proposed Project. Incremental increase in the number of trips compared to the Proposed Project. Impacts would be less than significant.
4.8-2: Would the project conflict with an applicable congestion management program, including, but not limited to level of service standard and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?	None of the six study area intersections fall within the jurisdiction of the OCTA CMP 2017. The Proposed Project would conflict with the OCTA CMP. No impacts.	The same as the Proposed Project. No impacts.	The same as the Proposed Project. No impacts.	The same as the Proposed Project. No impacts.	The same as the Proposed Project. No impacts.

TABLE 5-24
SUMMARY COMPARISON OF POTENTIAL IMPACTS BY ALTERNATIVE

Threshold	Proposed Project	Alternative 1	Alternative 2	Alternative 3	No Project
TRIBAL CULTURAL RESOURCES (Section 4.9)					
4.9-1: Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is: i. Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or ii. A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource	The Proposed Project has a low potential to cause substantial adverse impacts to tribal cultural resources. Implementation of MN TCR-1 would further minimize the potential for impacts should buried tribal cultural resources be discovered as part of grading activities. Impacts would be less than significant.	The same as the Proposed Project. Impacts would be less than significant.	The same as the Proposed Project. Impacts would be less than significant.	Less than the Proposed Project due to the limited nature of the improvements and low probability of disturbing native soil. Impacts would be less than significant.	Less than the Proposed Project. No construction activities are proposed. No impacts would occur.

TABLE 5-24
SUMMARY COMPARISON OF POTENTIAL IMPACTS BY ALTERNATIVE

Threshold	Proposed Project	Alternative 1	Alternative 2	Alternative 3	No Project
to a California Native American tribe.					
UTILITIES AND SERVICE SYSTEMS (Section 4.10)					
4.10-1: Would the project exceed the wastewater treatment requirements of the applicable Regional Water Quality Control Board ("RWQCB"). **4.10-2:** Would the project require or result in the construction of new water or wastewater treatment facilities or the expansion of existing facilities, the construction of which could cause significant environmental impacts. **4.10-4:** Would the project result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments.	The Proposed Project would serve incrementally more people than the Baseline (2016) condition. However, water-efficient plumbing fixtures and appliances that would be installed in new general aviation facilities would help offset the minor increase in wastewater generation. However, the amount is within the parameters of long-range planning and would not exceed the wastewater treatment requirements of the Santa Ana RWQCB or result in discharges that would require the construction of new wastewater treatment facilities or the expansion of existing facilities. Impacts would be less than significant.	Slightly greater than the Proposed Project. Incrementally more people would be served when compared to the Proposed Project. Therefore, more wastewater would be generated compared to the Proposed Project. However, as with the Proposed Project, impacts would be less than significant.	Slightly less than the Proposed Project. Incrementally fewer people would be served when compared to the Proposed Project. Therefore, less wastewater would be generated compared to the Proposed Project. However, as with the Proposed Project, impacts would be less than significant.	Slightly greater than the Proposed Project. Incrementally more people would be served when compared to the Proposed Project. Therefore, more wastewater would be generated compared to the Proposed Project. However, as with the Proposed Project, impacts would be less than significant.	Slightly greater than the Proposed Project. Incrementally more people would be served when compared to the Proposed Project. Therefore, more wastewater would be generated compared to the Proposed Project. However, as with the Proposed Project, impacts would be less than significant.

TABLE 5-24
SUMMARY COMPARISON OF POTENTIAL IMPACTS BY ALTERNATIVE

Threshold	Proposed Project	Alternative 1	Alternative 2	Alternative 3	No Project
4.10-2: Would the project require or result in the construction of new water or wastewater treatment facilities or the expansion of existing facilities, the construction of which could cause significant environmental impacts[15] **4.10-3:** Would the project have sufficient water supplies available to serve the project from existing entitlements and resources, or new or expanded entitlements would be needed.	The Proposed Project would potentially result in an incremental increase in water usage due to an increase in persons using general aviation facilities when compared to Baseline (2016) conditions. However, water-efficient plumbing fixtures and appliances that would be installed in new facilities would help offset the minor increase in water demand under the Proposed Project. Thus, the Proposed Project would not require additional water supplies or create the need for new or expanded water treatment facilities. Impacts would be less than significant.	Slightly greater than the Proposed Project. Incrementally more people would be served when compared to the Proposed Project. Therefore, there would be potentially greater water usage compared to the Proposed Project. However, as with the Proposed Project, impacts would be less than significant.	Slightly less than the Proposed Project. Incrementally fewer people would be served when compared to the Proposed Project. Therefore, less demand for water would be expected compared to the Proposed Project. However, as with the Proposed Project, impacts would be less than significant.	Slightly greater than the Proposed Project. Incrementally more people would be served when compared to the Proposed Project. Therefore, there would be potentially greater water usage compared to the Proposed Project. However, as with the Proposed Project, impacts would be less than significant.	Slightly greater than the Proposed Project. Incrementally more people would be served when compared to the Proposed Project. Therefore, there would be potentially greater water usage compared to the Proposed Project. However, as with the Proposed Project, impacts would be less than significant.

[15] The following analysis addresses potable water supply only. The analysis of wastewater treatment facilities under this threshold is addressed above in this section.

TABLE 5-24
SUMMARY COMPARISON OF POTENTIAL IMPACTS BY ALTERNATIVE

Threshold	Proposed Project	Alternative 1	Alternative 2	Alternative 3	No Project
WATER QUALITY (Section 4.11)					
4.11-1: Would the project violate any water quality standards or waste discharge requirements? **4.11-2:** Would the project create or contribute runoff water which would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff? **4.11-3:** Would the project otherwise substantially degrade water quality?	JWA has an extensive list of BMPs to address runoff leaving the Airport to comply with all water quality standards. The Proposed Project would require additional BMPs under the priority redevelopment program improving storm water quality before discharging from the Airport. The Proposed Project would also reduce the number of based aircraft and the number of general aviation operations. Therefore, an incremental decrease in the amount of pollutants is anticipated and impacts would be less than significant.	Similar to the Proposed Project. Impacts would be less than significant.	Similar to the Proposed Project. Impacts would be less than significant.	Less than the Proposed Project as it pertains to construction activity; however, there would be additional flights under Alternative 3. However, similar to the Proposed Project impacts would be less than significant.	Less than the Proposed Project as it pertains to construction activity; however, there would be additional flights under the No Project Alternative. However, similar to the Proposed Project impacts would be less than significant

TABLE 5-25
COMPATIBILITY COMPARISON OF ALTERNATIVES WITH PROJECT OBJECTIVES

Project Objective	Proposed Project	Alternatives			
		1	2	3	No Project
1. To enhance safe and secure operations	●	●	●	●	○
2. To utilize limited land area efficiently and economically	●	●	●	◒	◒
3. To enhance compatibility between general and commercial aviation operations	●	●	●	◒	◒
4. To embrace flexibility to allow for technological advances and market trends	◒	●	◒	○	○
5. To maximize economic, self-sustaining, revenue-producing facilities	●	●	●	◒	◒
6. To assess the ability of existing infrastructure to support general aviation facilities	●	●	●	●	●

Proposed Project—Redevelopment of the general aviation facilities, including the provision of two full service FBOs and one limited service FBO
Alternative 1—Redevelopment of the general aviation facilities, including the provision of three full service FBOs and one limited service FBO
Alternative 2—Redevelopment of the general aviation facilities, including the provision of two full service FBOs, both located on the east side of the Airport, and one limited service FBO
Alternative 3—Only minor modifications to existing facilities needed to comply with FAA standards for airport design.
No Project Alternative—No modifications or updating of facilities are proposed.

Legend:

● = Fully Implements
◒ = Partially Implements
○ = Does Not Implement

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