

## **3.0 PROJECT DESCRIPTION**

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### **3.1 PURPOSE OF THE PROJECT DESCRIPTION**

The purpose of the Project Description is to describe a proposed project in a way that allows for meaningful review by the public, reviewing agencies, and decision makers. Section 15124 of the California Environmental Quality Act (“CEQA”) Guidelines requires that the project description for an environmental impact report (“EIR”) contain: (1) the precise location and boundaries of a proposed project; (2) a statement of objectives sought by the proposed project including the underlying purpose of the project; (3) a general description of the proposed project’s technical, economic, and environmental characteristics; and (4) a statement briefly describing the intended uses of the EIR, including a list of the agencies that are expected to use the EIR in their decision-making, a list of the permits and other approvals required to implement the project, and a list of related environmental review and consultation requirements required by federal, State, or local laws, regulations, or policies. An adequate project description need not be exhaustive, but should supply the detail necessary for project evaluation.

An EIR is the most comprehensive form of environmental documentation identified in CEQA and the State CEQA Guidelines. The following project description provides the information needed to assess the environmental effects associated with the development, construction, and operation of the John Wayne Airport General Aviation Improvement Program (“GAIP” or “the Project”).

### **3.2 PROJECT LOCATION**

The GAIP would be implemented at John Wayne Airport (“JWA” or “the Airport”) primarily within an unincorporated area of Orange County (“County”) and a portion within the City of Costa Mesa boundary. Although the Airport encompasses approximately 504 acres, the aviation activities at JWA are located on approximately 400 acres. The site is south of Interstate (“I”) 405, north of State Route (“SR”) 73, west of MacArthur Boulevard, and east of Red Hill Avenue. The Airport property, owned by the County of Orange, includes the airfield; the terminal; maintenance buildings; surface level and parking structures; the administrative building; property leased for aviation support uses; and a portion of the Newport Beach Golf Course. The Airport area is surrounded by the cities of Newport Beach, Irvine, and Costa Mesa, as well as several unincorporated County islands. The regional location and local vicinity are provided in Section 1 on Exhibits 1-1 and 1-2, respectively. Exhibit 2-1 depicts the portion of the Airport currently supporting general aviation activities, as well as the proposed locations for construction staging/laydown areas. The environmental setting, which includes a discussion of the general setting and specifics to the Airport, is provided in Section 2.5, Environmental Setting.

### **3.3 PROJECT OBJECTIVES**

Section 15124(b) of the State CEQA Guidelines requires “[a] statement of objectives sought by the proposed project. A clearly written statement of objectives will help the lead agency develop a reasonable range of alternatives to evaluate in the EIR and would aid the decision makers in preparing findings or a statement of overriding considerations, if necessary. The statement of

objectives should include the underlying purpose of the project.” Not only is a project analyzed in light of its objectives, compatibility with project objectives is one of the criteria used in selecting and evaluating a reasonable range of project alternatives. Clear project objectives simplify the selection process by providing a standard against which to measure project alternatives.

The objectives for the proposed 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

### **3.4 LEAD AND RESPONSIBLE AGENCIES FOR THE PROJECT**

Pursuant to Section 15121 of the State CEQA Guidelines, an EIR is primarily an informational document intended to inform the public agency decision-makers and the general public of the potentially significant environmental effects of a project. Prior to taking action on the proposed GAIP, the County, as the lead agency, must consider the information in this Program EIR and certify the Final Program EIR.

As owner and operator of JWA, the County of Orange is the Lead Agency for the proposed GAIP. The County, as the Lead Agency, is responsible for the adequacy of its environmental documents. Section 15367 of the State CEQA Guidelines defines Lead Agency as follows:

“Lead Agency” means the public agency which has the principal responsibility for carrying out or approving a project. The Lead Agency will decide whether an EIR or Negative Declaration will be required for the project and will cause the document to be prepared.

The cities of Costa Mesa and Newport Beach would be Responsible Agencies for implementation of components of the GAIP. The CEQA Guidelines, Section 15381, defines Responsible Agency as follows:

“Responsible Agency” means a public agency which proposes to carry out or approve a project, for which a Lead Agency is preparing or has prepared an EIR or Negative Declaration. For the purposes of CEQA, the term “Responsible Agency” includes all public agencies other than the Lead Agency which have discretionary approval power over the project.

The Lead Agency is responsible for the adequacy of its environmental documents and has broader authority to disapprove a project than does a Responsible Agency. As elements of the GAIP improvements are constructed, the cities of Costa Mesa and Newport Beach would be

required to grant approvals and permits or coordinate with the County. The anticipated approvals are discussed in Section 3.7 below.

### 3.5 AVIATION FORECASTS BASELINE INFORMATION

Under existing conditions, the current facilities at the Airport can accommodate approximately 596 based aircraft;<sup>1</sup> however, in 2016, only 482 based aircraft were parked at Airport. Facilities supporting general aviation include apron area spaces, tie-downs, box hangars, community hangars, T-hangars, and shade structures (see Table 2-2 in Section 2.5.2 for the distribution of these facilities on the Airport)<sup>2</sup>. Although the hangars are occupied, there is additional capacity at the Airport for additional aircraft in the tie-down areas. There are approximately 80 County tie-downs available for single-engine and light twin-engine airplanes. The remaining approximately 34 tie-down spaces occur within the apron areas<sup>3</sup> associated with the two existing full service Fixed Base Operator (“FBO”) facilities<sup>4</sup> (AECOM 2018b).

Historical data for the Airport have shown a consistent decline in piston engine aircraft since 1980 at the Airport. Although activity by small general aviation aircraft at the Airport has decreased, growth in business aircraft activity remains strong. Turbine powered aircraft have been on a generally positive increase at the Airport. The Airport has recognized this trend and incorporated it into its long-term planning efforts. In 2014, as part of the Settlement Agreement Amendment<sup>5</sup>, forecasts projected 367 general aviation aircraft would be based at JWA in the 2021 to 2025 time frame. In the 2026 to 2030 time frame that number was reduced to 322 based aircraft. These projections reflected a reduction in the number of single-engine and multi-engine aircraft and a modest growth in turbine aircraft (JWA 2014).

As part of the planning effort for the GAIP, an unconstrained forecast for general aviation activity at the Airport was developed. This analysis, which is contained in the *General Aviation Forecasting and Analysis Technical Report* prepared by AECOM (AECOM 2018a) (Appendix C of this Program EIR), takes 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. Consistent with trends in California, the pilot population in Orange County has declined since 2001; however, student pilot population is seeing some rebound in California. In recent years, the introduction of new business models for corporate and business aviation has resulted in business and corporate flying becoming a growing share of general aviation activities.

As part of the *General Aviation Forecasting and Analysis Technical Report*, unconstrained forecasts were prepared for general aviation based aircraft and annual operations. Tables 3-1

<sup>1</sup> The total number of aircraft that can be accommodated at the Airport may vary by plus or minus ( $\pm$ ) 5 to 10 percent depending on the mix of different aircraft types and sizes at any given time.

<sup>2</sup> Brief descriptions of the various types of hangar facilities is provided below in Section 3.6.1.

<sup>3</sup> The apron area is the defined area on an airport intended to accommodate aircraft for purposes of loading or unloading passengers or cargo, refueling, parking, or maintenance.

<sup>4</sup> An FBO is “a business granted the right by the airport sponsor to operate on an airport and provide aeronautical services such as fueling, hangaring, tie-down and parking, aircraft rental, aircraft maintenance, and flight instruction.” (FAA 2007).

<sup>5</sup> Section 2.6.3 provides an overview of the Settlement Agreement Amendment.

through 3-3 provide a baseline for the “unconstrained” forecasts for general aviation based aircraft and annual operations. These tables identify the 2016 baseline information; the projected 2026 unconstrained forecasts by type of aircraft on the Airport (Table 3-1); the number of unconstrained general aviation operations (Table 3-2); and the unconstrained operations forecast (Table 3-3).

**TABLE 3-1  
JWA UNCONSTRAINED FORECAST BASED AIRCRAFT BY TYPE**

Year	Fixed Wing Piston			Fixed Wing Turbine			Helicopter			Other	Total Based Aircraft
	Single Engine	Multi-Engine	Total	Turbo Prop	Turbo Jet	Total	Piston	Turbine	Total	Glider	
Oct 2016	338	35	<b>373</b>	26	65	<b>91</b>	6	11	<b>17</b>	<b>1</b>	<b>482</b>
<b>Baseline Scenario</b>											
2026	359	37	<b>396</b>	32	89	<b>121</b>	7	15	<b>22</b>	<b>1</b>	<b>540</b>
Source: AECOM 2018b											

**TABLE 3-2  
JWA UNCONSTRAINED FORECAST GENERAL AVIATION AND AIR TAXI OPERATIONS**

Year	Air Taxi	General Aviation		Total Operations <sup>a</sup>
		Itinerant	Local	
Estimated 2016	15,400	90,900	86,500	<b>192,800</b>
2026 Unconstrained Forecast	20,200	96,100	91,500	<b>207,800</b>
Note: Numbers may not add up due to rounding.				
<sup>a</sup> An operation is defined as either a takeoff or landing, each counting as one operation.				
Source: AECOM 2018b.				

**TABLE 3-3  
JWA UNCONSTRAINED FORECAST OPERATIONS  
BY AIRCRAFT ENGINE TYPE**

Year	Piston	Turbine	Jet	Helicopter/Other	Total Operations <sup>a</sup>
Estimated 2016	147,300	9,800	31,800	3,900	<b>192,800</b>
2026 Unconstrained Forecast	147,100	12,000	43,600	5,100	<b>207,800</b>
Note: Numbers may not add up due to rounding.					
<sup>a</sup> An operation is defined as either a takeoff or landing, each counting as one operation.					
Source: AECOM 2018b.					

The GAIP alternatives would provide fewer aircraft parking spaces than the existing conditions. Therefore, the based aircraft forecast would be limited, or constrained, to the design capacity of

the selected alternative on or about opening day in 2026. As a result, the total number of general aviation flights would vary slightly dependent on the alternative selected.

The annual operations projected for each alternative includes operations generated by based aircraft and transient aircraft. These forecasts, which reflect the design capacity, are identified as constrained forecasts. The number of based aircraft for each type of aircraft follows the growth estimated from the unconstrained forecast (discussed above and included in Tables 3-1 through 3-3) until it reaches the maximum capacity for the available facilities. Once the number of based aircraft demand for each type of aircraft reaches the maximum capacity, the growth for that type of aircraft is constrained. Operations generated by based aircraft would be constrained because of limited parking spaces for different types of aircraft. Operations generated by transient aircraft reference the unconstrained forecast model (AECOM 2018b). The forecasted operations for the Proposed Project and Alternative 1 are presented in Sections 3.6.2 and 3.6.3, respectively.

## 3.6 PROJECT DESCRIPTION

The GAIP has been developed in an effort to balance the environmental, social, and economic demands regarding general operations at JWA. Based on the limited physical space, not all of Orange County's aviation demands can be met at the Airport. As part of the GAIP, historical data, both for JWA and nationally, has been evaluated to provide the best balance of facilities to meet the demand for various types of aircraft based at the Airport. As noted above, achieving this operational efficiency and economic balance has been incorporated into the GAIP objectives (see Section 3.3 for the Project Objectives).

The GAIP will provide the framework for general aviation improvements at the Airport by conducting a comprehensive evaluation of the general aviation facilities. By providing a concept that maximizes the efficiency and safety of facilities, the Airport will be able to prioritize future improvements, and the GAIP can be the basis for the review of potential future improvements proposed either by the County or by FBOs and other tenants as part of the leases at the Airport.

This Program EIR evaluates two development alternatives at an equal level of consideration. The alternatives have been identified as the Proposed Project and Alternative 1. Specific development plans would be prepared at the time improvements are proposed for implementation; therefore, the project description in the Program EIR has been developed based on the *General Aviation Facility Requirements Technical Report* prepared by AECOM in 2017 (AECOM 2017) and concepts for implementing improvements within the space constraints at the Airport. This report was prepared to determine the facilities needed to accommodate current and future general aviation demand. AECOM then developed conceptual alternatives of how these generalized facility requirements could be implemented at the Airport within the space constraints. Given the programmatic nature of this EIR, the Proposed Project and Alternative 1 are concepts used to provide realistic development scenarios for what could be implemented and provide the parameters for evaluation in the Draft Program EIR. The precise size and configuration of the improvements will be determined at the implementation phase of the GAIP and further project specific environmental review may be required. To provide for an environmental worst-case assessment, the concepts generally represent the maximum amount of development for the various leaseholds.

The *General Aviation Facility Requirements Technical Report* provides a demand/capacity analysis based on established guidelines and methodologies for airport planning and design and utilizes information obtained from the Airport and the general aviation users/tenants to the extent possible. This allows the Airport to have an understanding of the basic parameters required for future facilities to function effectively. Among other things, the *General Aviation Facility Requirements Technical Report* identifies the following:

- Aircraft parking and storage facility requirements for aircraft based at the Airport, as well as space for some transient aircraft
- Passenger, office, and commercial space requirements to serve the general aviation needs
- General Aviation Facility (“GAF”) space requirements to permit international arrivals and for processing international passengers in accordance with federal guidelines
- Fuel storage requirements needed to accommodate projected volumes of different types of aviation fuel
- Hazardous material and chemical storage requirements for use by the general aviation users

For the purpose of estimating the storage capacity of the different types of facilities, the following assumptions, which are included in *Orange County/John Wayne Airport (JWA) General Aviation Improvement Program (GAIP) Based Aircraft Parking—Capacity Analysis and General Aviation Constrained Forecasts*, apply to the Proposed Project and Alternative 1 (AECOM 2018b)(included as Appendix D to this Program EIR).

- The full service FBO community hangars are assumed to have capacity for five aircraft each. Actual storage capacity would vary depending on the type and size of aircraft stored in the hangar at any given time.
- The Limited Service Southwest FBO community hangars are assumed to have capacity for 17 aircraft because the access taxiway would be limited to aircraft with smaller wingspans.
- T-hangars provide capacity for one single-engine or one light twin-engine aircraft per unit.
- Box hangars provide capacity for one turbine aircraft per unit. It is assumed that a box hangar would be used to store the largest turboprop or business/private jet that fits inside the hangar, even though some hangars may be used to store two or more smaller aircraft.
- FBO aprons provide additional capacity for storing based aircraft. Fifty percent of each FBO’s apron space is allocated for based aircraft parking; the remaining 50 percent is allocated for transient aircraft parking. Actual storage capacity would vary depending on the type and size of aircraft parked on the apron at any given time.
- Tie-downs provide capacity for one single-engine or one light twin-engine aircraft per unit.

- Auto parking is depicted in the illustrations for preliminary information. The capacity of each parking lot is subject to change based on the detailed layout and design of each alternative.

The facilities planning recognizes the trend that fewer small single-engine and light twin-engine airplanes and more turboprops and business/private jets are based at the Airport. Because one large business/private jet requires the same parking space as four small airplanes, it can be concluded that changes in the aircraft fleet mix have also had a reducing effect on the overall storage capacity of the Airport (AECOM 2018b).

This Program EIR has developed a project description for the Proposed Project and Alternative 1 using the alternative concepts presented in a memorandum prepared by AECOM to the County providing a capacity analysis and general aviation constrained forecasts (AECOM 2018b), the facilities requirements outlined in *General Aviation Facility Requirements Technical Report*, and the *General Aviation Opportunities Facilities Layout Report*.<sup>6</sup> These development parameters are intended as a concept of the type and size of the facilities that would be developed under the GAIP; however, they are not the only concepts that could be deemed to be consistent with the GAIP and this Program EIR. At the time design plans are developed for each of the facilities at the Airport, consistency with the GAIP and this Program EIR would be evaluated to determine whether additional environmental review will be required.

### **3.6.1 FACILITY IMPROVEMENTS COMMON TO BOTH THE PROPOSED PROJECT AND ALTERNATIVE 1**

The type of improvements associated with both the Proposed Project and Alternative 1 would be the same. To provide an understanding of what these improvements are and to minimize repetition, the following provides an overview of the improvements that would be common to both the Proposed Project and Alternative 1. This discussion provides more of a conceptual description of each type of facility based upon GAIP design concepts and the facilities descriptions provided in the *General Aviation Facility Requirements Technical Report* and the *General Aviation Opportunities Facilities Layout Report* (Appendix B of this Program EIR). Specific design characteristics of the improvements would be subject to review as part of the approval of development construction plans and issuance of building permits. The facilities sizes have been developed at a conceptual level for planning purposes. Modifications may occur as the facilities are designed. Additionally, type and size of aircraft parked at an FBO facility may vary based on demand and can change frequently, sometimes several times a day. Therefore, standardized planning factors were developed and applied to estimate the capacity of the FBO hangars and aprons based on the space available, with the understanding that the actual storage capacity for each facility is dependent on the mix of parked aircraft at any given time. The number of aircraft accommodated and size of facilities is based on the *General Aviation Opportunities Facilities Layout Report*.

For purposes of this Program EIR, it is assumed that the County's standard construction practices would be implemented. The depth of construction is expected to be up to 25 feet below ground surface in those locations where footings for new buildings are required. Roadway modifications would reasonably require disturbance of no greater than five feet below ground surface.

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<sup>6</sup> This same approach has been used for the development of the alternatives addressed in Section 5 of the Program EIR.

Features such as light poles and hangars are expected to result in disturbance up to 10 feet below surface level. Due to the proximity of facilities to the airfield, it is anticipated that some night construction would be required. The majority of construction for building pads would require disturbance of no greater than five feet below ground surface.

Sections 3.6.2 and 3.6.3 provide a brief discussion of the Proposed Project and Alternative 1, respectively, including exhibits of the conceptual layouts of the proposed facilities.

## **Fixed Based Operator**

Both the Proposed Project and Alternative 1 provide for full service and limited service FBOs. The intent of the GAIP is not to eliminate any of the FBO services currently provided at the Airport, but rather to evaluate the location and facility requirements to function most efficiently. A distinction between the Proposed Project and Alternative 1 that is being evaluated in this Program EIR is the number and location of FBOs at the Airport.

### ***Full Service Fixed Base Operator***

A full service FBO provides a greater range of services for the general aviation community. At JWA, this includes, but may not be limited to, aircraft storage, aircraft fueling services, air charter services, aircraft rental, aircraft maintenance, flying lessons, and sale of aircraft and aviation-related supplies. Other services may include ground transportation and catering. FBOs also provide office space for aviation-related companies and terminal space for passengers and crew of general aviation aircraft.<sup>7</sup> Facilities required at a full service FBO include aircraft storage facilities of all sizes (see discussion below), office space, terminal area and fueling services.

Based on the *General Aviation Opportunities Facilities Layout Report*, the terminal area and office space for a full service FBO is expected to be approximately 28,000 square feet. The facilities concept identifies an estimated 21,653 square feet allocated for the FBO terminal area, 3,953 square feet for a general aviation terminal, and 1,952 square feet for a GAF (AECOM 2018c). Although each of the full service FBOs may not include all the services, it is anticipated the FBO terminal area may include:

- FBO-Related
  - reception area
  - line service area
  - FBO administration offices and conference rooms
  - Ground Service Equipment (“GSE”) parking/service area
  - rental car booth/counter/office
- Passenger-Related
  - passenger lounge

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<sup>7</sup> Currently, and presumably in the future, other businesses are located in full service FBOs. An example is OC Helicopters, currently co-housed with Atlantic Aviation. This allows them to use FBO facilities rather than duplicating facilities.



- VIP areas or sports team areas
- Pilot- and Crew-Related
  - crew lounge
  - pilot briefing room (also known as the flight planning and weather room)
  - rooms for pilots to rest
  - restroom with shower(s)
  - pilot shop
- Rental Offices (for aviation businesses or businesses with based aircraft)
- Shared Areas
  - conference room(s)
  - kitchenette for catering functions, for passengers/crew in the FBO and supplying the aircraft for flights
  - restrooms
  - restaurant<sup>8</sup>

The full service FBOs would each include multiple aircraft hangars.<sup>9</sup> It is anticipated these would be large community hangars (see description of aircraft storage facilities below). The facilities descriptions provided in the *General Aviation Opportunities Facilities Layout Report* identifies the full service FBOs having approximately 99,000 square feet of hangar space. Aircraft parking, both fixed wing and helicopters, would also occur on the FBO aircraft apron area. The apron area is expected to be range from 237,866 square feet to 282,757 square feet. Vehicle parking would be provided to support the FBO operations. This would include employees, service providers, and users of the FBO facilities. Vehicle parking for each of the full service FBOs would accommodate between 206 vehicles to 355 vehicles.<sup>10</sup>

### Optional Improvements Associated with a Full Service Fixed Base Operator

Two new facilities being evaluated as part of the GAIP are a General Aviation Terminal and an international General Aviation Facility (“GAF”). The Full Service FBOs have been sized such that the GAF and General Aviation Terminal could be accommodated at any of the Full Service FBOs. However, it is assumed that these facilities would be part of one of the full service FBOs. The other FBOs would be able to utilize the facilities. By allowing sharing of the GAF and General

<sup>8</sup> The restaurant, if provided, would not be open to the public but would be for patrons of the FBO. It is anticipated it would be a small salad and deli-type facility serving the FBO with room sufficient for approximately 20 people. The square footage for the restaurant is included in the conceptual sizing for the FBO terminal building.

<sup>9</sup> The hangars would incorporate subfloor design measures to mitigate fuel and oil spillage. Hangars used for light or heavy maintenance/repairs and overhauls of aircraft engines would be required to install oil, water, and fuel separation systems. Design elements, such as special ventilation systems, are incorporated to mitigate any fuel or hazardous fumes from accumulating in high concentrations inside a hangar.

<sup>10</sup> Alternative 1 proposes two full service FBOs on the east side, which would have shared parking. The total number of parking spaces are estimated to be 413. In this general discussion of the amount of parking for each of the full service FBOs, the 413 spaces is divided by 2 to derive an allocation for each of the full service FBOs on the east side. The 355 vehicle parking spaces is associated with the full service FBO on the west side. In this situation the average amount allocated to each full service FBO would be the lower number shown. More detailed discussion of each alternative is provided in Sections 3.6.2 and 3.6.3.

Aviation Terminal, the services at the Airport would be maximized on the very limited acreage at the Airport. The GAIP does not identify which full service FBO location would provide these services.<sup>11</sup> Rather, space would be available at all full service FBOs, and the ultimate location would be determined as part of the lease and final design process. The identified improvements would be in addition to those identified above for the full service FBO. The nature of these improvements is discussed below. The facilities descriptions are based on the *General Aviation Opportunities Facilities Layout Report* (Appendix B of this Program EIR).

### **General Aviation Terminal**

Regularly scheduled commercial charter operators have approached the County, expressing their interest in initiating regularly scheduled air service at the Airport. Regularly scheduled commercial charter operations require an allocation of passenger capacity prior to the initiation of service consistent with the provisions of the JWA Phase 2 Commercial Airline Access Plan (“Access Plan”). The County approved an allocation of capacity for the proposed initiation of service for JetSuiteX in late 2017 for its operations beginning in mid-2018.

Because aircraft typically used by commuter carriers are relatively small in size, and because the demand for commuter carrier remain overnight (“RON”) positions may exceed the space available to accommodate such aircraft, the County may permit (in its sole and exclusive discretion), in individual cases, commuter aircraft, such as regularly scheduled commercial charter operations, to RON at locations other than the air carrier ramp. Although the Access Plan provides the Airport Director with the discretion to authorize scheduled charter operators to operate out of FBOs, any such operations are not as a matter of right, are subject to the discretionary approval of the Airport Director, and must comply with any conditions imposed on the operations by the Airport Director, including written authorization from the Airport Director specifying the exact location of the authorized RON position and the duration of the authorization, which cannot be greater than one Plan Year. Access Plan, Section 5.12.

To accommodate possible regularly scheduled commercial charter flights in the future, provisions for a General Aviation Terminal have been included in the GAIP. Though co-located at a Full-Service FBO, the optional General Aviation Terminal would be designed to function independently of the adjoining FBO.<sup>12</sup>

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<sup>11</sup> As a government office, the optional GAF must be designed to function as a “public-use” facility. Even though the GAF may be physically co-located with one FBO, it will be staffed by CBP personnel and operated separately.

<sup>12</sup> It is anticipated that the charter airline/aircraft operator would staff the General Aviation Terminal as needed to serve the aircraft and passengers. It is not anticipated that the FBO would provide these services; though it is possible the charter operator could negotiate/contract with an FBO to provide personnel and resources to support charter aircraft operations. However, this would not alter the access to or use of the General Aviation Terminal or change the environmental impacts.

### **General Aviation Facility**

The rapid growth of foreign air travel has resulted in a substantial increase in international general aviation traffic. To provide for more efficient U.S. Customs and Border Protection (“CBP”) processing for general aviation international arrivals<sup>13</sup>, the GAIP provides the opportunity for a dedicated screening facility, known as a GAF. CBP defines GAF as facilities provided at airports for specialized functions such as processing of corporate and private aircraft, cargo planes with passengers, and charter aircraft. GAF facilities are normally located at small, low volume airports and provide U.S. CBP with the ability to process up to 20 passengers and their baggage at one time.

The facility would be designated and operated by CBP and is assumed to initially be a user fee based facility<sup>14</sup>. An aircraft arriving from an international location would taxi to the GAF and park in a dedicated area separated from the rest of the FBO parking. After the outside of the aircraft is checked by a CBP officer, passengers followed by the crew exit the aircraft and proceed directly to the CBP facility. While the passengers and crew are being processed, the interior of the airplane and any baggage is inspected. Because the GAF would likely be incorporated as part of an FBO secondary support area, it would not be necessary to include a search room, an interview room, and a hold room. Crew members or passengers that need additional processing would be held at the CBP GAF and subsequently transported by CBP to the Thomas F. Riley Terminal for this processing. It is anticipated that the GAF would be servicing aircraft with 20 or fewer passengers. Should the arriving aircraft be based at a different FBO, once the inspection process is completed, the aircraft would then taxi to the other FBO.

The *Forecasting and Analysis Report* has estimated potential international general aviation departures/arrivals if CBP inspection services were to be provided at JWA. Facilities would be designed in compliance with the CBP Airport Technical Design Standards (“ATDS”) and would comply with all applicable Department of Homeland Security requirements. Based on the *General Aviation Facility Requirements Technical Report*, the space requirements for the GAF are anticipated to be approximately 17,250 square feet (for building, aircraft apron, and vehicle parking). CBP has not yet provided input on the facilities requirements. The coordination with CBP would occur when the improvements are proposed.

### ***Limited Service Fixed Base Operator***

Currently, two limited service FBOs are located on the Airport. One of these is Martin Aviation. As noted in Section 2.4, the Limited Service FBO Martin Aviation lease, which includes the Lyon Air Museum, is a long-term lease that extends through year 2036; therefore, this area is not part

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<sup>13</sup> Since April 2012, JWA has offered international service with CBP services for commercial carriers. However, the Airport does not have direct international general aviation arrivals due to the lack of CBP facilities for general aviation arrivals. This has necessitated international general aviation arrivals to stop at another airport that offers general aviation CBP services.

<sup>14</sup> A user fee airport is one that has been approved by the Commissioner of CBP to receive, for a fee, the services of a CBP officer for the processing of aircraft entering the United States and their passengers and cargo. Generally, a user fee airport is one that does not support the workload to be identified as a port of entry, which are locations where the U.S. Secretary of Treasury assigns CBP officers for these functions rather than having it on a fee basis. Based on the volume of international travel by commercial carriers at the Airport associated with the commercial carriers, JWA would qualify as a port of entry. Though the Airport has petitioned to be classified as a port of entry for commercial carriers, CBP has not yet granted the Airport that status.

of the GAIP.<sup>15</sup> The other limited service FBO, which is being evaluated as part of the GAIP, is the area currently occupied by Jay's Aircraft Maintenance. This location is identified as the Limited Service Southwest FBO in this Program EIR. Due to space constraints at the Airport, the facilities at the Limited Service Southwest FBO do not meet the facility parameters outlined in the *General Aviation Facility Requirements Technical Report* (AECOM 2017).<sup>16</sup> Rather than having hangar space for 30 aircraft, the Limited Service FBO community hangars are assumed to have capacity for 17 aircraft (estimated as 44,741 square feet). This is due to the access taxilane requirements, which limit aircraft to those with smaller wingspans. This facility would also have space for 62 vehicle parking spaces. This is reflected in the *General Aviation Opportunities Facilities Layout Report*.

## **Aviation Leases on John Wayne Airport**

In addition to the full service and limited service FBOs at the Airport, a number of other aviation-related leases support general aviation activities. Currently, these leases include three flight schools and the Orange County Sherriff's Department ("OCSD"). Additionally, a number of leaseholders provide hangars for aircraft storage facilities on the Airport. Since the facilities associated with aircraft storage are the same for specialized leaseholders and the FBOs (both full service and limited service), the characteristics of the aircraft storage facilities are discussed below. The following provides an overview of the facilities identified in the *General Aviation Facility Requirements Technical Report* to accommodate the flight schools and the OCSD and the concepts presented in the *General Aviation Opportunities Facilities Layout Report*.

### ***Flight School Facility***

The evaluation of facilities required to service flight schools included consolidation of schools into one location resulting in some efficiencies because the flight schools could share classroom space and other common use areas, such as the pilot shop and testing center, restrooms, and a break room. However, it was recognized that mixing fixed-wing and rotor wing (helicopter) training has some disadvantages.<sup>17</sup>

The *General Aviation Facility Requirements Technical Report* identified the space requirements assuming combined fixed-wing and rotor wing facilities. This included having a flight school with a flight simulator room and testing room, a second flight school with a flight simulator room and no testing room, and a third flight school without a flight simulator room or testing room. Based on the *General Aviation Opportunities Facilities Layout Report* the combined office space, which includes the classrooms, flight simulator rooms, and testing room, for the three schools would

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<sup>15</sup> Martin Aviation is a limited service FBO. However, as previously noted, because of the current long-term lease modifications to the Martin Aviation facilities are not being addressed in the GAIP. Martin Aviation has a 65,000 square foot hangar and can accommodate 8 aircraft on the apron. Table 1-1, which provides a comparison of the alternatives and includes the facilities for each use, includes Martin Aviation. The assumptions for Martin Aviation are the same for all alternatives.

<sup>16</sup> The *General Aviation Facility Requirements Technical Report* (AECOM 2017) conducted an evaluation of the facilities needed to provide small aircraft maintenance. The facilities requirements were identified as the need for sufficient hangar space to accommodate up to 30 aircraft (approximately 21,600 square feet); approximately 43,200 square feet for aircraft apron area; approximately 2,000 square feet of office space, which could be located in one of the hangars; and vehicle parking area.

<sup>17</sup> Disadvantages include helicopters are noisier than airplanes and generate wind conditions (rotor wash) that is strong enough to cause flying debris.

be an estimated 9,342 square feet. The combined apron area would be approximately 142,566 square feet, which would accommodate 47 tie-down spaces.<sup>18</sup> Additionally, there would be space to accommodate approximately 52 vehicle parking spaces.

### ***Orange County Sherriff's Department***

The OCSD Air Support Unit has a facility for operating helicopters at the Airport. They currently have five helicopters (and a sixth aircraft is expected in the near future) on the west side of the Airport. The OCSD currently leases two box hangars from ACI Jet. The GAIP assumes the OCSD may lease space either directly from the County or from the west side FBO. Therefore, this use is shown as a separate facility with space allocations to accommodate the five helicopters and required office space. A sixth helicopter would be located on the apron area. The *General Aviation Opportunities Facilities Layout Report* identifies the following approximate facilities to accommodate the needs of the OCSD:

- 11,429 square feet of hangar space
- 31,039 square feet of aircraft apron area
- 15,000 square feet of office space
- 21 vehicle parking spaces

### **Aircraft Storage Facilities**

Various types of aircraft storage facilities would be provided at the Airport with both the Proposed Project and Alternative 1, including a mix of box hangars, T-hangars, and tie-down areas. A number of design considerations have been evaluated as part of the development of the conceptual layouts shown for the Proposed Project and Alternative 1. To the extent feasible, box hangars and T-hangars should be located in different locations, with box hangars being located close to the general apron area or FBOs and T-hangars away from the general apron area or FBOs. Since box hangars are typically used to store larger aircraft than T-hangars, and larger aircraft require more FBO support (line services) than smaller aircraft, to enhance operational efficiency, it is desirable to locate box hangars closer to FBOs.

A general description of assumptions used for each of these types of facilities is provided below with more detailed information in the *General Aviation Facility Requirements Technical Report* (AECOM 2017):

- **Box Hangars**—Box hangars are high-bay, clear span, rectangular structures often capable of accommodating two or more aircraft. They can vary in size. The key dimensions of a box hangar bay are clear door opening width and height and bay depth. Box hangars are generally separated from other hangars, but sometimes they are joined side by side in groups of four to six bays in one building. A hangar would incorporate subfloor design measures to mitigate fuel and oil spillage. These hangars are generally

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<sup>18</sup> The *General Aviation Facility Requirements Technical Report* identified a desire for aircraft parking at the flight school to be provided through a combination of box hangars, tie-downs, shade structures, and apron area. However, due to the limited size of the Airport and the need to meet FAA design requirements, only tie-down area can be provided.

used for storage of business aircraft, including small jets. Shared bathrooms would be considered at the end of every hangar row.<sup>19</sup>

The size of the box hangar varies by the size of the aircraft. Additionally, to allow for maintenance, an additional 100 square feet per aircraft was added to the size of the large box hangars. This is consistent with planning standards. The *General Aviation Facility Requirements Technical Report* used the following general standards for estimating the size of box hangars:

- 1,100 square feet per single-engine airplane and helicopter
  - 1,525 square feet per multi-engine piston airplane
  - 2,500 square feet per small fixed-wing turbine powered aircraft, assuming a 5-foot clearance all around the aircraft.
- **Community Hangars**—Community hangars would be provided by the FBOs (both full and limited service). These hangars can vary in size and are able to accommodate several aircraft, from small single-engine aircraft to mid-size jets, and helicopters. These are distinguished from box hangars because they are open-space facilities with no interior supporting structure. Often, other airport services, such as storage of transient aircraft<sup>20</sup> or aircraft maintenance, are offered from community hangars. The space requirements per aircraft for piston airplanes and helicopters are the same as those identified above for the box hangars. A standard of 3,725 square feet per fixed-wing turbine aircraft was used. The anticipated size range for the community hangars is between 30,000 and 44,000 square feet.

Similar to the box hangars, since portions of the hangars are known to be used for aircraft maintenance and servicing, space requirements for maintenance/service were added using a planning standard of 100 square feet per based aircraft when establishing the sizing requirements.

- **T-Hangars**—T-hangars are covered structures (made out of wood, steel, concrete, corrugated metal, or aluminum) for individual aircraft. They typically have common walls, are part of a long building (4 to 12 bays), and often offer a tight fit. There is normally one aircraft per T-hangar. At the end of the T-hangar rows, area for some maintenance/storage area and restrooms would be provided. Due to the space constraints at the Airport, a single taxiway arrangement is provided between the T-hangars.

T-hangars are generally designed to accommodate aircraft wingspans of up to 55 feet; however, the largest aircraft being used for this analysis is a Piper Malibu with a wingspan of 44.49 feet. The following general standards were used for estimating the size of T-hangars:

- 1,200 square feet per T-hangar per single-engine airplane
- 1,965 square feet per T-hangar per multi-engine airplane

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<sup>19</sup> Box hangars often feature attached offices, lounges, and bathrooms. However, at JWA, due to space constraints, box hangars will not have offices or lounges.

<sup>20</sup> Transient aircraft are aircraft that are temporarily on the ground and not being used but are not based out of the Airport. Transient aircraft may be at the Airport anywhere from a few hours to a few days.

- **Tie-Downs**—A tie-down is an uncovered parking area equipped with anchors in the pavement and using ropes or cables to secure an aircraft to the ground. There is one aircraft per tie-down position. Currently, tie-down areas are offered in a range of sizes from 40-foot to 50-foot tie-downs. The precise configuration of the tie-down areas would be determined as the improvements are proposed; however, configurations are expected to be similar to existing. Only fixed-wing piston aircraft (both single and multi-engine) would park on tie-downs. The critical aircraft dimensions for single-engine aircraft are 36.33-foot wingspan by 28.25 feet long by 9.33 feet high. The critical aircraft dimensions for multi-engine aircraft are 44.49-foot wingspan by 36.38 feet long by 11.5 feet high. Generally, to allow sufficient wingtip and tail clearance, wingtip spacing should be spaced at least 10 feet, and tail spacing should be at least 6 feet.<sup>21</sup>

## **Other Improvements**

### ***Fuel Storage***

Aviation fuel is a specialized type of petroleum-based fuel used to power and propel aircraft. There are two types of aviation fuel: (1) aviation gasoline (better known as avgas), or 100 low lead (better known as 100LL), used to power piston or reciprocating engines; and (2) Jet A, or unleaded kerosene, used to power jet turbine or diesel engines. Both types of fuels can be purchased at the Airport.<sup>22</sup>

General aviation fuel requirements were analyzed as part of the *General Aviation Forecasting and Analysis Technical Report* (AECOM 2018a). This was based on historical and projected fuel flowages rates for general aviation aircraft using the Airport. In 2016, approximately 96 percent of the total fuel sales (by volume) for general aviation activities at Airport was Jet A. The volume of avgas sold at the Airport has decreased from over 6 percent of the total fuel flowage in 2006 to only 3.3 percent in 2016.<sup>23</sup> The continuous decline in avgas demand is generally in line with the decrease in based piston aircraft. However, the drop in fuel price since late 2014 has ceased the decline, and the demand for avgas has remained steady.

General aviation aircraft are currently fueled by the FBOs through the use of trucks. Each of the current full service FBOs have underground fuel storage tanks for avgas, which are located in the general aviation fuel farm located at the southeast side of the Airport in the vicinity of Campus Drive and the southern boundary of the Airport (the location of the fuel farm is shown on Exhibit 1-3). Fuel would continue to be delivered to the general aviation fuel farm through the gate at Campus Drive and Quail Street.

In response to requests by the general aviation community at the Airport, the GAIP is incorporating provisions for a self-serve fueling station, which would serve avgas. This facility is conceptually shown on the west side of the Airport. The size of the aviation fuel tanks for the

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<sup>21</sup> The design aircraft for tie-downs is a combination of the Cirrus SR22 and the Cessna 206 Stationair for single-engine airplanes and a combination of the Cessna 421 and the Piper Malibu for multi-engine airplanes, as explained in the critical aircraft section. Additional detail is provided in the *General Aviation Facility Requirements Technical Report* (AECOM 2017)

<sup>22</sup> Some aircraft also utilize automobile gasoline (better known as mogas); however, this fuel is rarely found at airports and is not sold at JWA.

<sup>23</sup> An estimated total of 7,604,000 gallons of fuel was used at the Airport in 2016 (AECOM 2018b).

self-service fueling station has not been determined. However, a typical tank size ranges from 5,000 to 20,000 gallons for each fuel type. At JWA, an above ground system would be installed because they are easier to install, inspect for leaks, and can be easily accessed for repairs. Self-service fueling stations at airports generally include either a concrete masonry containment wall or utilize a dual wall storage tank which does not require an external, secondary containment device. Other supporting improvements would include a fuel dispenser, a power supply, voice-grade telephone line, and concrete pad. Self-service fuel-dispensaries are often sold as a unit.

Another potential future improvement evaluated in this Draft Program EIR would be to connect the Full Service East FBO(s) to the hydrant fueling system for Jet A fuel. Currently, the commercial carriers receive fuel on the commercial apron via an underground hydrant system connected to the fuel farms located on the west side of the Airport. The hydrant fueling system currently extends to the “remain overnight” (“RON”) parking apron for commercial aircraft located south of the passenger terminal building. A future connection of the Full Service East FBO(s) to the underground hydrant fueling system would require the extension of the pipeline for a short distance and construction of a fueling station. This would allow an FBO to pump Jet A fuel from the commercial fuel farm directly to the FBO refueling trucks.

### ***Correction of Non-Standard Conditions***

Currently, four non-standard conditions (i.e., existing facilities do not comply with current Federal Aviation Administration (“FAA”) design standards) are present at the Airport. These improvements pertain to modifications to facilities because they are within an object-free area (“OFA”) of the Airport. The GAIP proposes the following improvements to correct existing non-standard conditions:

- An approximately 3,420-foot-long segment of the perimeter road on the west side of the airfield would need to be relocated because it is within the OFA of Taxiway B. The 24-foot-wide roadway between Taxiway H and Taxiway D would be relocated 10 feet to the west side of the existing road to clear the OFA and conform to the FAA Advisory Circular AC 150/5300-13A “Airport Design” that requires all airport vehicular service roads to be located entirely outside the taxiway OFA.
- An approximately 3,511-foot-long segment of the perimeter road on the east side of the airfield would need to be relocated because it is within the OFA of Taxiway A. The 24-foot-wide roadway between Taxiway H and Taxiway D would be relocated to the east side of the existing road to clear the OFA and conform to the FAA Advisory Circular AC 150/5300-13A.
- Two community hangars from the Full Service Southeast FBO would be removed to comply with FAA height restrictions pursuant to Federal Aviation Regulations (“FAR”) Part 77.
- Thirty-one transient aircraft apron parking spaces located at the southeast portion of the Airport (in the vicinity of the general aviation fuel farm) would be removed to comply with the extended OFA for the approach to Runway 2L.



## 3.6.2 PROPOSED PROJECT

The Proposed Project proposes a Full Service West FBO and a Full Service East FBO, for a total of two full service FBOs. The total aircraft storage capacity under this alternative would be approximately 354 based aircraft. Table 3-4 provides a comparison of the type of facilities currently (2016) available at the Airport and the facilities that would be available under the Proposed Project. When compared to Existing Conditions, the Proposed Project reduces aircraft storage capacity by approximately 242 spaces (nearly 41 percent) and would accommodate 128 fewer (nearly 27 percent) general aviation aircraft than currently using the Airport.<sup>24</sup>

**TABLE 3-4  
FACILITIES COMPARISON OF EXISTING CONDITIONS  
AND THE PROPOSED PROJECT**

Facility	Aircraft Parking Spaces			Change (+/-) <sup>a</sup>	
	Existing Capacity	Currently Used	Proposed Project	Compared to Capacity	Compared to Currently Used
Tie-Down Apron	302	222	135	-167	-87
T-Hangars	111	111	96	-15	-15
Box Hangars (includes OCSD)	45	45	35	-10	-10
FBO/Community Hangars	23	23	47	24	24
Shade Structures	66	66	0	-66	-66
FBO Apron Spaces <sup>b</sup>	49	15	41	-8	26
<b>Total</b>	<b>596</b>	<b>482</b>	<b>354</b>	<b>-242</b>	<b>-128</b>

Note: 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.

<sup>a</sup> Numbers in red indicate a loss or deficiency.

<sup>b</sup> Includes eight tie-down spaces at Martin Aviation and one tie-down space for the OCSD.

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

Exhibit 3-1 depicts the conceptual layout of facilities for the Proposed Project. The nature of the improvements has been identified in Section 3.6.1, above. In addition to the relocation of the Vehicle Service Road (also known as Perimeter Road) along Taxiway A to comply with FAA clearance standard dimensions, the facilities included with the Proposed Project include:

- Two full service FBOs, which are shown on the conceptual layout as a Full Service Northwest FBO and a Full Service Northeast FBO. As noted in Section 3.6.1, one of the full service FBOs could incorporate a general aviation terminal and GAF.
  - The Full Service Northwest FBO would be located immediately south of Paularino Avenue. This facility would include three community hangars with a combined capacity to accommodate 15 aircraft (approximately 99,000 square feet). The

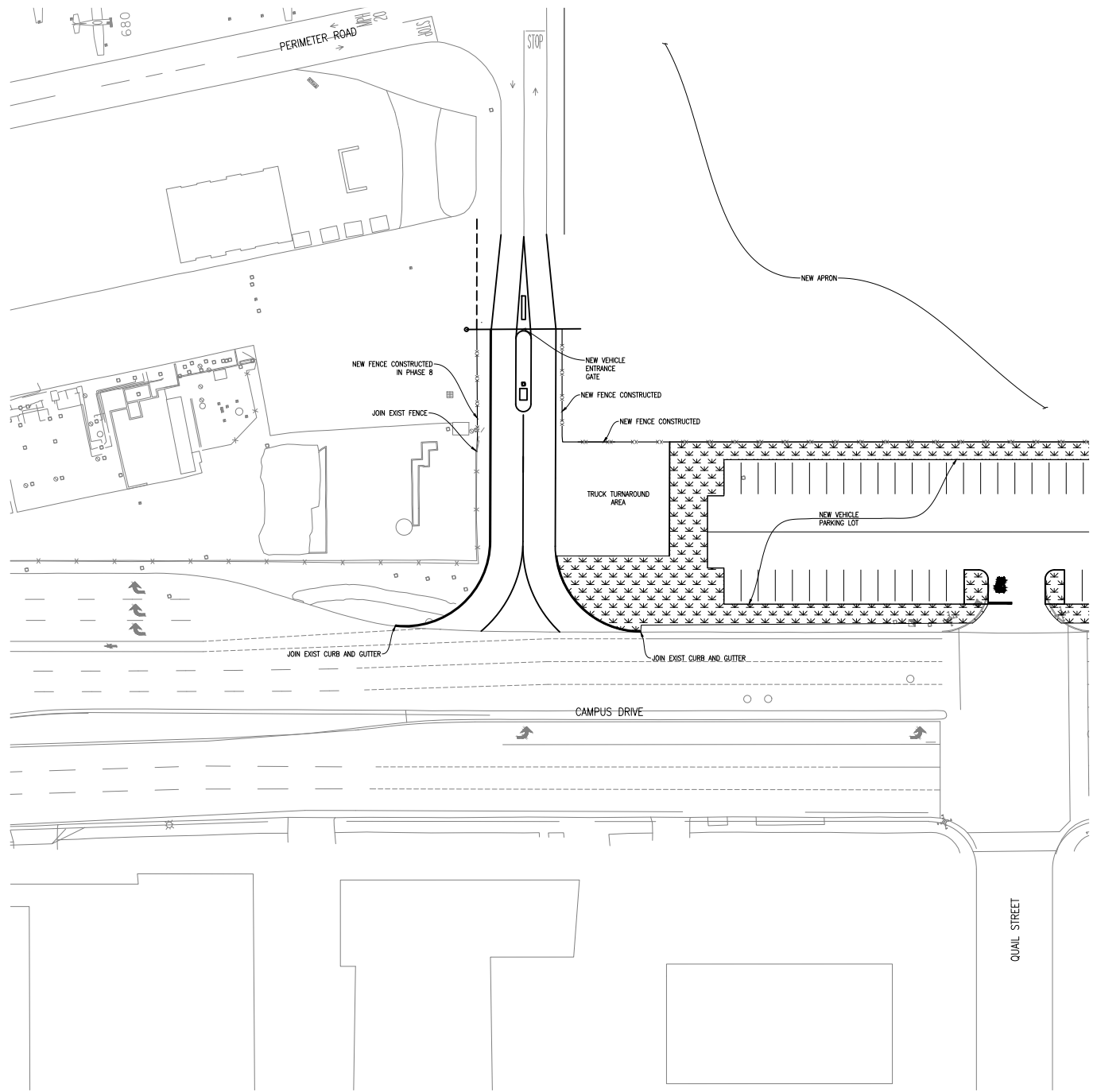
<sup>24</sup> Transient aircraft parking areas are excluded from the capacity analysis, which is based aircraft parking spaces. The number shown for each FBO Apron area includes based aircraft only. For example, the Full-Service NE FBO apron has capacity for 30 total aircraft. Assuming an even split between based and transient aircraft, there are 15 spaces allocated for based aircraft.



apron area would accommodate 17 based aircraft (estimated 282,757 square feet). Space for parking would accommodate approximately 355 vehicles. This area is currently used for a full service FBO.

- The Full Service Northeast FBO would be located immediately south of the Campus Drive and Airport Way intersection. This facility would include three community hangars with a combined capacity to accommodate 15 aircraft (approximately 100,320 square feet). The apron area would accommodate 15 based aircraft (estimated 237,866 square feet). Space for parking would accommodate approximately 246 vehicles. As noted previously, there may be the opportunity to connect this FBO 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. This area is currently used for a full service FBO.
- Three rows of box hangars with a combined capacity to accommodate 30 aircraft would be located immediately south of the Full Service Northeast FBO. Access to these facilities would be through the secured Dove Street entrance off Campus Drive. No modifications to the Dove Street entrance, which is currently used to access existing general aviation aircraft parking areas would be required. This area is currently used for T-hangars.
- Seven rows of T-hangars with a combined capacity to accommodate 72 aircraft would be located immediately south of the box hangars along Campus Drive. Access to these facilities would be through the secured Dove Street entrance off Campus Drive. This area is currently used as 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, which is comparable to the aircraft facilities currently provided to the flight schools. This area is currently used for flight schools and is part of one of the full service FBO's lease areas.
- There would be minor modifications to the existing Campus Drive and Quail Street entrance to the Airport. The signalized intersection at the Campus Drive and Quail Street would provide access to the flight school parking area. However, the curved entrance through the 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 further from the Campus Drive. The curb line would remain the same as existing conditions. Exhibit 3-2 depicts the proposed realigned Campus Drive and Quail Street intersection.
- Tie-down facilities would be located along the southwestern perimeter of the Airport. Approximately 31 tie-downs would be located west of Perimeter Road (the on-Airport service vehicle road). An additional 29 tie-downs are proposed south of the limited service FBO. These areas are currently used as tie-down areas.
- The self-service fueling station would be located on the west side immediately adjacent to the tie-down area and the area currently being used for a limited service FBO.

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**LEGEND**

- x — x — EXISTING FENCE
- o — o — EXISTING WALL-FENCE
- - - - - LIMIT OF WORK
- x — PEDESTRIAN SECURITY GATE
- — — PROPERTY LINE
- == xx == NEW AOA WALL FENCE
- xx — AOA SECURITY CHAIN LINK FENCE
- [x-hatch] LANDSCAPING AREA

Source: AECOM 2017

**Conceptual Improvements to the Campus Drive/Quail Street Intersection** Exhibit 3-2  
*John Wayne Airport General Aviation Improvement Program*



- 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.
- Four rows of T-hangars, which would accommodate 24 aircraft, would be located north of the Limited Service Southwest FBO.
- A tie-down area would be located north of the T-hangars and south of the existing Limited Service FBO Martin Aviation. This tie-down area would accommodate 28 aircraft.
- A box hangar facility designated for the OCSD is proposed south of the Full Service Northwest FBO. The hangar would accommodate five aircraft, with 31,039 square feet of apron area, which would be sufficient to accommodate an additional aircraft, if necessary. Accommodations for 21 vehicle parking spaces would be provided.

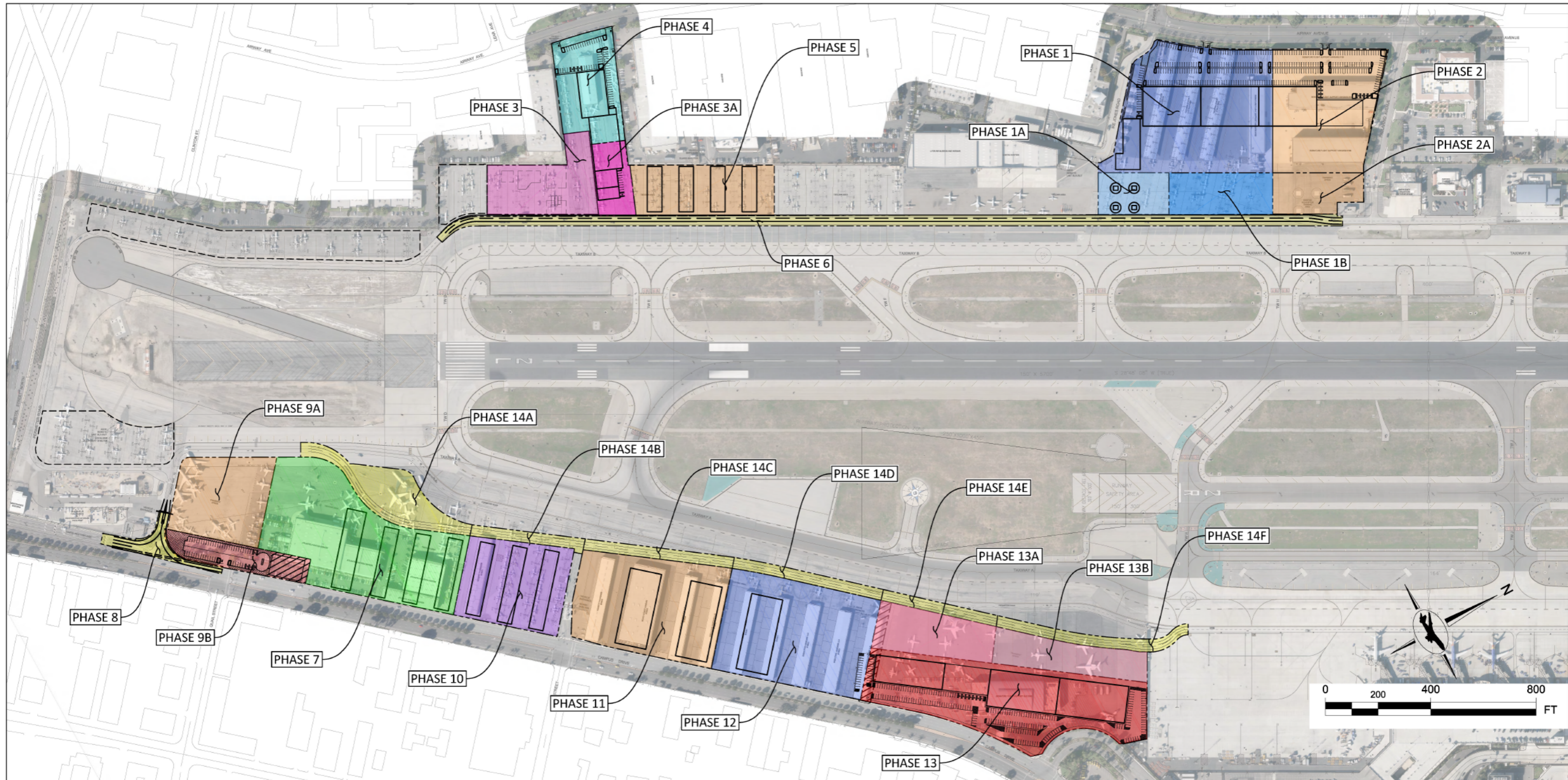
## **Phasing**

Implementation of the improvements associated with the GAIP would be phased to minimize disruption to Airport operations and reduce the need to temporarily relocate based aircraft to other airports in the region. The phasing would require temporary relocation of uses while each area on the Airport is under construction. Given the space limitations on the Airport, small segments of work would need to be conducted at a single time. A phasing concept has been developed for the Proposed Project, which identifies 14 primary construction phases and is depicted on Exhibit 3-3a. Exhibit 3-3b provides a corresponding listing of the improvements identified for each task. Overall, the construction phase 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 Airport would experience a gradual reduction in the total general aviation capacity (i.e., the reduction from the 482 aircraft currently based at the Airport to the 354 positions identified with the Proposed Project), and aircraft would need to relocate to other airports.

## **Aviation Forecasts for the Proposed Project**

As noted, the total number of general aviation flights would vary slightly dependent on the alternative selected. Tables 3-5 through 3-7 provide the constrained aviation forecast data for the Proposed Project. The constrained forecast data addresses the maximum projected general aviation facilities and operations that can be accommodated by JWA's limited footprint. Table 3-5 identifies the 2016 baseline information and the projected 2026 forecasts by type of aircraft; Table 3-6 identifies the number of general aviation operations; and Table 3-7 provides the operations forecast by engine type. As shown in the tables, the growth of turboprops and jet aircraft would reach capacity in the near term, and there would be no growth for helicopters. Although multi-engine piston aircraft would have capacity to grow in the long term under the Proposed Project based on the capacity analysis, the four vacant spaces (in 2026) for multi-engine piston aircraft would likely be occupied by existing single-engine based aircraft. It is anticipated that all of the 354 based aircraft parking spaces would be fully occupied by GAIP completion (AECOM 2018b).

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### Phasing Concept – Proposed Project

John Wayne Airport General Aviation Improvement Program

Source: AECOM 2018

Exhibit 3-3a



## PHASING SCHEDULE – PROPOSED PROJECT

Phase	Description
1	Demolish tie downs, shade structures, and one Full Service Northwest FBO box hangar, construct new Orange County Sheriff's Department (OCSD) facilities, two new hangars for the Full Service Northwest FBO, adjacent section of Full Service Northwest FBO apron and portion of landside improvements.
2	Demolish 3 remaining hangars at the Full Service Northwest FBO, transient apron and helicopter parking. Construct FBO offices, one hangar, remaining apron section, and remainder of landside improvements for the Full Service Northwest FBO.
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	Demolish west side tie downs and construct four T-hangars
6	Remove existing perimeter road on the west side and construct new perimeter road.
7	Demolish Full Service Southeast FBO hangars/offices, and portion of landside parking. Construct 4 new T-hangars and portion of new flight school apron, located on the east side.
8	Construct new Quail Street entry road improvement
9	Demolish remainder of Full Service Southeast FBO landside parking. Construct remaining portion of new flight school apron, new flight school building and new landside auto parking.
10	Demolish tie downs and one T-hangar. Construct 3 new T-hangars.
11	Demolish 4 T-hangers hangars on the east side and adjacent tie downs. Construct 2 new box hangars
12	Demolish 5 T-hangars on the east side and adjacent tie downs. Construct 1 box hangar and portion of new Full Service Northeast FBO apron and landside improvements.
13	Demolish Full Service Northeast FBO hangar, apron, and landside auto parking. Construct hangars, remainder of FBO apron, and auto parking for the Full Service Northeast FBO. Add signalized entrance to Full Service Northeast FBO.
14	Demolish tie downs. Remove and reconstruct the perimeter road on the east side.

### Phasing Schedule – Proposed Project

*John Wayne Airport General Aviation Improvement Program*

Exhibit 3-3b



**TABLE 3-5  
JWA CONSTRAINED FORECAST BASED AIRCRAFT BY TYPE - PROPOSED PROJECT**

Year	Fixed Wing Piston <sup>a</sup>		Fixed Wing Turbine		Helicopter	Total Based Aircraft
	Single Engine	Multi-Engine	Turboprop	Turbo Jet		
Capacity	194	41	30	72	17	<b>354</b>
2016	339	35	26	65	17	<b>482</b>
2026 <sup>b</sup>	198	37	30	72	17	<b>354</b>

Note: The fleet mix distributions may not match the sum totals due to rounding.  
<sup>a</sup> The based aircraft totals for single-engine include one glider.  
<sup>b</sup> 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.

**TABLE 3-6  
JWA CONSTRAINED FORECAST GENERAL AVIATION AND  
AIR TAXI OPERATIONS - PROPOSED PROJECT**

Year	Air Taxi	General Aviation		Total Operations <sup>a</sup>
		Itinerant	Local	
2016	15,400	90,900	86,500	<b>192,800</b>
2026	19,100	87,500	61,300	<b>167,900</b>

Note: Numbers may not add up due to rounding.  
<sup>a</sup> An operation is defined as either a takeoff or landing, each counting as one operation.  
 Source: AECOM 2018b.

**TABLE 3-7  
JWA CONSTRAINED FORECAST OPERATIONS BY  
AIRCRAFT ENGINE TYPE - PROPOSED PROJECT**

Year	Piston	Turbine	Jet	Helicopter/Other	Total Operations <sup>a</sup>
2016	147,300	9,800	31,800	3,900	<b>192,800</b>
2026	111,000	11,700	40,400	4,800	<b>167,900</b>

Note: Numbers may not add up due to rounding.  
<sup>a</sup> An operation is defined as either a takeoff or landing, each counting as one operation.  
 Source: AECOM 2018b.



### 3.6.3 ALTERNATIVE 1

As previously noted, the type of improvements associated with Alternative 1 would be the same as the Proposed Project. A key distinction is that Alternative 1 would provide for a third full service FBO. Alternative 1 proposes a Full Service West FBO, a Full Service Northeast FBO, and a Full Service Southeast FBO. The total aircraft storage capacity under this alternative would be approximately 356 based aircraft. Table 3-8 provides a comparison of the type of facilities currently (2016) available at the Airport and the facilities that would be available under Alternative 1. When compared to Existing Conditions, Alternative 1 reduces aircraft storage capacity by approximately 240 spaces (about 40 percent) and would accommodate 126 fewer (about 26 percent) general aviation aircraft than currently using the Airport.

**TABLE 3-8  
FACILITIES COMPARISON OF EXISTING CONDITIONS  
AND ALTERNATIVE 1**

Facility	Aircraft Parking Spaces			Change (+/-) <sup>a</sup>	
	Existing Capacity	Currently Used	Alternative 1	Compared to Capacity	Compared to Currently Used
Tie-Down Apron	302	222	119	-183	-103
T-Hangars	111	111	114	3	3
Box Hangars <sup>b</sup>	45	45	5	-40	-40
FBO/Community Hangars	23	23	62	39	39
Shade Structures	66	66	0	-66	-66
FBO Apron Spaces <sup>c</sup>	49	15	56	7	41
<b>Total</b>	<b>596</b>	<b>482</b>	<b>356</b>	<b>-240</b>	<b>-126</b>

Note: 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.

<sup>a</sup> Numbers in red indicate a loss or deficiency.

<sup>b</sup> Alternative 1 box hangar would only serve OCSD.

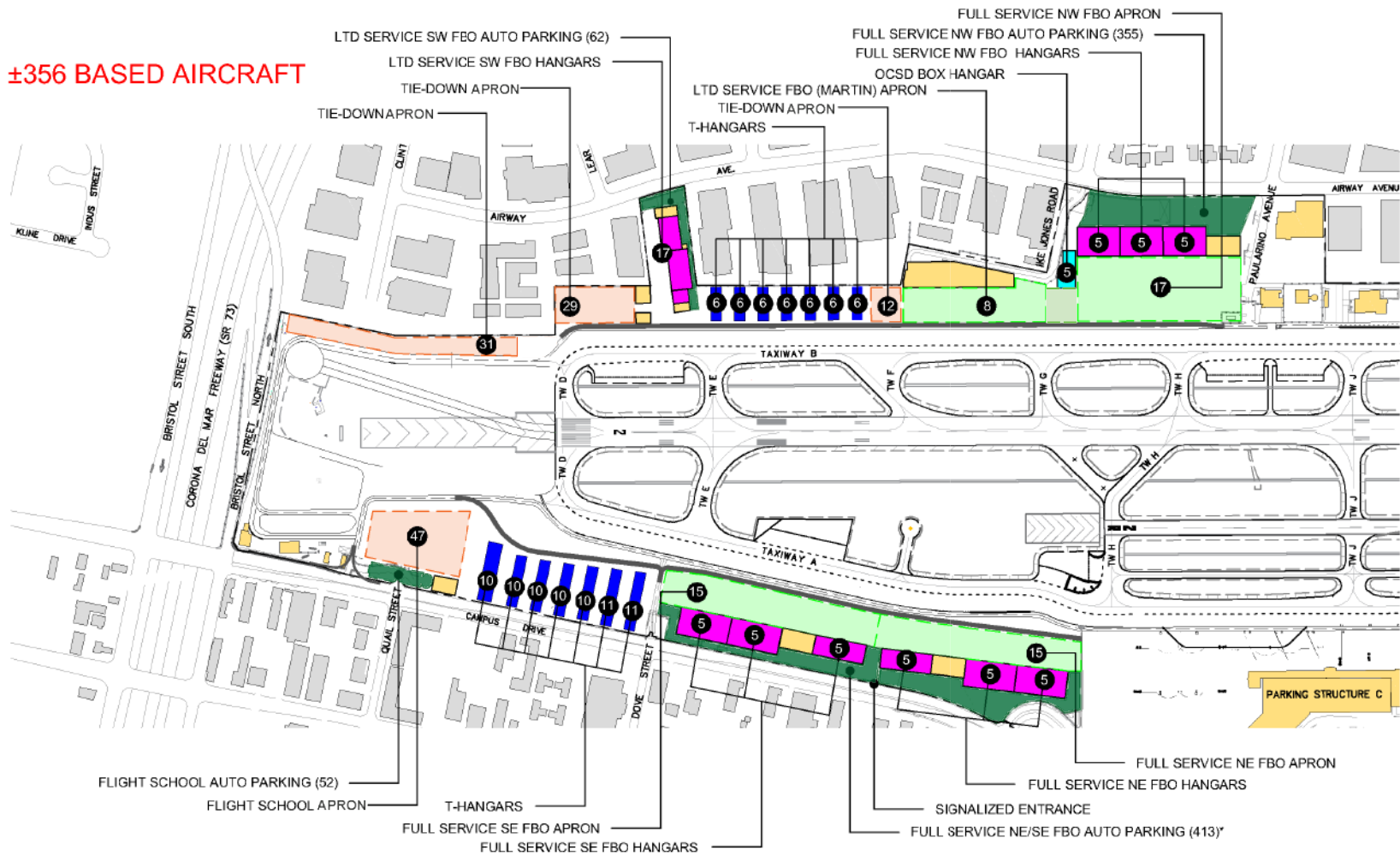
<sup>c</sup> Includes eight tie-down spaces at Martin Aviation and one tie-down space for the OCSD.

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

Exhibit 3-4 depicts the conceptual layout of facilities for Alternative 1. The nature of the improvements have been identified in Section 3.6.1, above. In addition to the relocation of the Perimeter Road along Taxiway A to comply with FAA clearance standard dimensions, the facilities proposed with this alternative include:

- Three full service FBOs, which are shown on the conceptual layout as Full Service Northwest FBO, Full Service Northeast FBO, and Full Service Southeast FBO. As noted in Section 3.6.1, one of the full service FBOs could incorporate a general aviation terminal and GAF.
  - The Full Service Northwest FBO would be located immediately south of Paularino Avenue. This facility would include three community hangars with a combined capacity to accommodate 15 aircraft (approximately 99,000 square feet). The

**±356 BASED AIRCRAFT**



\*Supplemental parking facilities may be required to achieve desired capacity.

Legend	
<span style="display:inline-block; width:15px; height:10px; background-color:yellow; border:1px solid black;"></span> On Airport Buildings	<span style="display:inline-block; width:15px; height:10px; background-color:blue; border:1px solid black;"></span> FBO Community Hangar
<span style="display:inline-block; width:15px; height:10px; background-color:grey; border:1px solid black;"></span> Off Airport Buildings	<span style="display:inline-block; width:15px; height:10px; background-color:cyan; border:1px solid black;"></span> T-Hanger
<span style="display:inline-block; width:15px; border-bottom:1px dashed black;"></span> Airport Property Line	<span style="display:inline-block; width:15px; height:10px; background-color:lightgreen; border:1px solid black;"></span> FBO Apron (50/50 Based/Transient)
	<span style="display:inline-block; width:15px; height:10px; background-color:orange; border:1px solid black;"></span> Tie-Down Apron
	<span style="display:inline-block; width:15px; height:10px; background-color:green; border:1px solid black;"></span> Auto Parking
	<span style="display:inline-block; width:15px; height:15px; border:1px solid black; border-radius:50%; text-align:center; line-height:15px;">12</span> Number of Aircraft Accomodated

Source: AECOM 2018

# Conceptual Facilities Layout - Alternative 1

# Exhibit 3-4

John Wayne Airport General Aviation Improvement Program



apron area would accommodate 17 aircraft (estimated at 282,757 square feet). Space for parking would accommodate approximately 355 vehicles. This area is currently used for a full service FBO.

- Both the Full Service Northeast FBO and the Full Service Southeast FBO would be located immediately south of the 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 (approximately 100,320 square feet for each FBO). The apron area at each FBO would also accommodate 15 aircraft for a total of 30 aircraft (estimated at 242,209 square feet for each FBO). An up to three level parking structure may be constructed, which would provide approximately 413 shared parking ( surface and structure). As noted, there may be the opportunity to connect the full service FBOs on the east side to the hydrant fueling system, which would reduce the number of truck trips internal to the Airport. The point of entry to the east side FBOs 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. This area is currently used for a full service FBO and T-hangars.
- 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.
- There would be minor modifications to the existing Campus Drive and Quail Street entrance to the Airport. The signalized intersection at the Campus Drive and Quail Street would provide access to the flight school parking area. However, the curved entrance through the 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 further from the Campus Drive. The curb line would remain the same as existing conditions (see Exhibit 3-2).
- The addition of the third full service FBO would require modifying the current fuel management procedures. Currently, each of the full service FBOs have fuel tanks at the general aviation fuel farm. With the addition of a third full service FBO, the existing facilities would need to service all three of the full service FBOs. This would require fuel management procedures, such as metering, but would not require substantial physical modifications to the existing general aviation fuel farm. The third FBO could be accommodated by utilizing 3 additional Jet A trucks with the capacity of 5,000 gallons each and two additional avgas trucks, each with 1,000 gallons of capacity, to transport fuel from the fuel farm to the third full service FBO location. Jet A fuel for the west side

FBO could also be obtained from the commercial fuel farm through an agreement with the commercial carrier fuel consortium, SNA Fuel.

- Tie-down facilities would be located along the southwestern perimeter of the Airport. Approximately 31 tie-downs would be located west of Perimeter Road (the on-Airport service vehicle road). An additional 29 tie-downs are proposed south of the limited service FBO. 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 FBO.
- The Limited Service Southwest FBO would be located on the west side of the Airport, 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.
- Seven rows of T-hangars would be located north of the Limited Service Southwest FBO, which would accommodate 42 based aircraft.
- A tie-down area would be located north of the T-hangars and south of the existing Limited Service FBO. This tie-down area would accommodate 12 based aircraft.
- A box hangar facility designated for the OCSA is proposed south of the Full Service West FBO. The hangar would accommodate five aircraft, with 31,039 square feet of apron area, which would be sufficient to accommodate an additional aircraft, if necessary. Accommodations for 21 vehicle parking spaces would be provided.

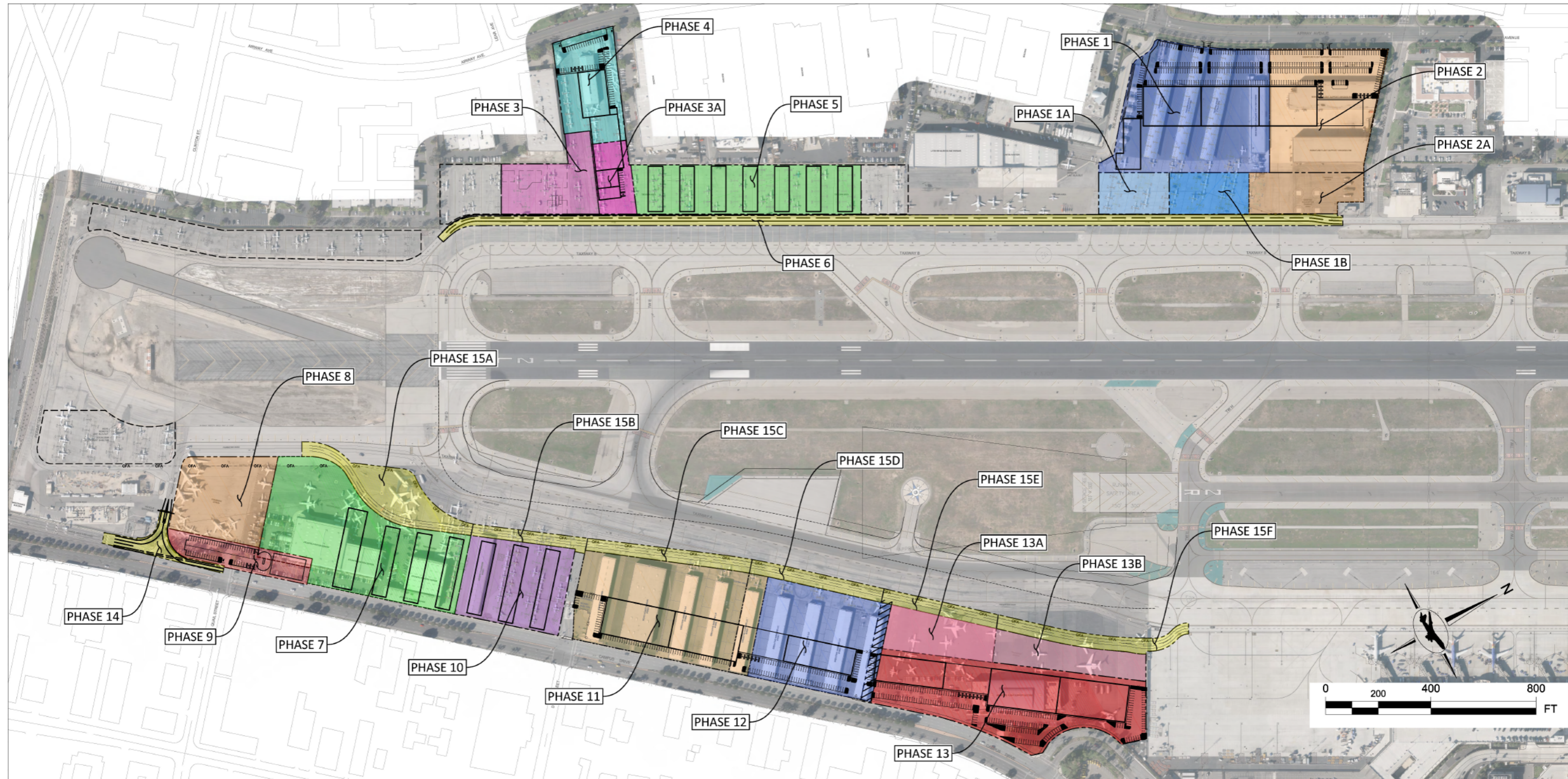
## **Phasing**

As with the Proposed Project, construction phasing would require temporary relocation of uses at the Airport. A phasing concept has been developed for Alternative 1 which identifies 15 primary construction phases and is depicted in Exhibit 3-5a. Exhibit 3-5b provides a corresponding listing of the improvements identified for each task. The construction phase 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 356 positions identified with Alternative 1), and aircraft would need to relocate to other airports.

## **Aviation Forecasts for Alternative 1**

The aviation forecasts for Alternative 1 are provided in Tables 3-9 through 3-11. Table 3-9 identifies the 2016 baseline information and the projected 2026 constrained forecasts by type of aircraft. The constrained forecast data addresses the maximum projected general aviation facilities and operations that can be accommodated by JWA's limited footprint. Table 3-10 identifies the number of general aviation operations; and Table 3-11 provides the operations forecast by aircraft engine type. As shown in the tables, the growth of turboprops and jet aircraft would reach capacity in the near term, and there would be no growth for helicopters. Although multi-engine piston aircraft would have capacity to grow in the long term under Alternative 1 based on the capacity analysis, the four vacant spaces for multi-engine piston aircraft would

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### Phasing Concept - Alternative 1

John Wayne Airport General Aviation Improvement Program

Source: AECOM 2018

### Exhibit 3-5a



## PHASING SCHEDULE – ALTERNATIVE 1

Phase	Description
1	Demolish tie downs, shade structures, and one Full Service Northwest FBO box hangar, construct new Orange County Sheriff's Department (OCSD) facilities, two new hangars for the Full Service Northwest FBO, adjacent section of Full Service Northwest FBO apron and portion of landside improvements.
2	Demolish 3 remaining hangars at the Full Service Northwest FBO, transient apron and helicopter parking. Construct FBO offices, one hangar, remaining apron section, and remainder of landside improvements for the Full Service Northwest FBO.
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	Demolish west side tie downs and construct seven T-hangars
6	Remove existing perimeter road on the west side and construct new perimeter road.
7	Demolish Full Service Southeast FBO hangars/offices, and portion of landside parking. Construct 4 new T-hangars and portion of new flight school apron.
8	Construct remaining portion of new flight school apron, located on the east side.
9	Demolish remainder of Full Service Southeast FBO landside parking. Construct new flight school building and new landside auto parking.
10	Demolish tie downs and one T-hangar. Construct 3 new T-hangars.
11	Demolish 5 T-hangers hangars on the east side and adjacent tie downs. Construct 2 new box hangars and adjacent apron for the Full Service Southeast FBO.
12	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.
13	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
14	Construct new Quail Street entry road improvement
15	Demolish tie downs in the vicinity of the flight school and the east side perimeter road. Construct new perimeter road.

### Phasing Schedule – Alternative 1

Exhibit 3-5b

*John Wayne Airport General Aviation Improvement Program*



likely be occupied by existing single-engine based aircraft. It is anticipated that all of the 356 based aircraft parking spaces would be fully occupied by GAIP completion (AECOM 2018b).

**TABLE 3-9  
JWA CONSTRAINED FORECAST BASED AIRCRAFT BY TYPE - ALTERNATIVE 1**

Year	Fixed Wing Piston <sup>a</sup>		Fixed Wing Turbine		Helicopter	Total Based Aircraft
	Single Engine	Multi-Engine	Turboprop	Turbo Jet		
Capacity	196	41	26	76	17	<b>356</b>
2016	339	35	26	65	17	<b>482</b>
2026 <sup>b</sup>	200	37	26	76	17	<b>356</b>

Note: The fleet mix distributions may not match the sum totals due to rounding.

<sup>a</sup> The based aircraft totals for single-engine include one glider.

<sup>b</sup> Assume 4 existing single-engine piston aircraft would park at the vacant spaces for multi-engine piston aircraft and fill up capacity.

Source: AECOM 2018b.

**TABLE 3-10  
JWA CONSTRAINED FORECAST GENERAL AVIATION AND  
AIR TAXI OPERATIONS - ALTERNATIVE 1**

Year	Air Taxi	General Aviation		Total Operations <sup>a</sup>
		Itinerant	Local	
2016	15,400	90,900	86,500	<b>192,800</b>
2026	19,000	87,700	61,900	<b>168,600</b>

Note: Numbers may not add up due to rounding.

<sup>a</sup> An operation is defined as either a takeoff or landing, each counting as one operation.

Source: AECOM 2018b.

**TABLE 3-11  
JWA CONSTRAINED FORECAST OPERATIONS BY  
AIRCRAFT ENGINE TYPE - ALTERNATIVE 1**

Year	Piston	Turbine	Jet	Helicopter/Other	Total Operations <sup>a</sup>
2016	147,300	9,800	31,800	3,900	<b>192,800</b>
2026	111,600	10,800	41,400	4,800	<b>168,600</b>

Note: Numbers may not add up due to rounding.

<sup>a</sup> An operation is defined as either a takeoff or landing, each counting as one operation.

Source: AECOM 2018b.

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## 3.7 INTENDED USES OF THE ENVIRONMENTAL IMPACT REPORT

The County, as the Lead Agency, is responsible for the actions, listed below, as a part of GAIP approval and implementation. The anticipated approvals would occur after certification of the Final EIR. As a Program EIR, it is recognized that the GAIP would be implemented over a period of years. As such, subsequent activities would be examined in light of the Final Program EIR to determine whether additional CEQA documentation would be required pursuant to the requirements of Section 21166 of CEQA (i.e., *California Public Resources Code*, Section 21166) and Sections 15162 and 15168 of the State CEQA Guidelines for subsequent site development approvals, such as the following:

- Approval by the Orange County Board of Supervisors of the Proposed Project or alternative for the GAIP
- Approval by the Orange County Board of Supervisors of real property and license agreements such as leases
- Approval of development construction plans and issuance of building permits by Orange County Public Works
- Issuance of permits by the Orange County Health Care Agency for the self-serve fueling station

The Final Program EIR would also provide environmental information to responsible agencies and other public agencies that may be required to grant approvals and permits or coordinate with the County as a part of GAIP implementation. These agencies include, but are not limited to, those listed below.

- **City of Newport Beach.** Issuance of encroachment permits for work in City right-of-way on Campus Drive for construction of the left-turn lane providing access to the east side full service FBO(s).
- **City of Costa Mesa.** Issuance of use permits and City Fire Department approvals associated with improvements on the Southwest Limited Service FBO and Full Service Northwest FBO.
- **Orange County Fire Authority.** Issuance of permits for installation of the self-serve fueling station.
- **South Coast Air Quality Management District.** Issuance of permits for the self-serve fueling station.



## 3.8 REFERENCES

- AECOM. 2018a. (January). *General Aviation Forecasting and Analysis Technical Report*. Orange, CA. (Appendix C)
- .2018b. (April). *Orange County/John Wayne Airport (JWA) General Aviation Improvement Program (GAIP) Based Aircraft Parking—Capacity Analysis and General Aviation Constrained Forecasts*. Orange, CA (Appendix D)
- .2018c (February). *General Aviation Opportunities Facilities Layout Report*. Orange, CA. (Appendix B)
- .2017 (December). *General Aviation Facility Requirements Technical Report*. Orange, CA.
- Communities for a Better Environment v. South Coast Air Quality Management District*, supra, 48 Cal.4th (2010)
- Neighbors for Smart Rail v. Exposition Metro Line Construction Authority* 57 Cal.4th 439 (2013)
- Orange, County of, John Wayne Airport (JWA). 2017. (June) Agenda Staff Report to the Board of Supervisors for Modifications to Commuter Air Carrier Definition. Santa Ana, CA.
- .2014. (September) *Final Environmental Impact Report No. 617, John Wayne Airport Settlement Agreement Amendment*. Santa Ana, CA
- U.S. Department of Transportation, Federal Aviation Administration (FAA). 2007. (January). Advisory Circular 150/5190-6 Exclusive Rights at Federally-Obligated Airports. Accessed on October 3, 2017, from [https://www.faa.gov/documentLibrary/media/advisory\\_circular/150-5190-6/150\\_5190\\_6.pdf](https://www.faa.gov/documentLibrary/media/advisory_circular/150-5190-6/150_5190_6.pdf)
- . "Advisory Circular 150/5190-7: Minimum Standards for Commercial Aeronautical Activities", 28 August 2006, p. 13.
- . Federal Aviation Regulations, 14 CFR 77—Safe, Efficient Use, and Preservation of the Navigable Airspace. [http://www.dot.ca.gov/hq/planning/aeronaut/documents/regulations/faa\\_far\\_part77.pdf](http://www.dot.ca.gov/hq/planning/aeronaut/documents/regulations/faa_far_part77.pdf) (accessed January 26, 2018)