CHAPTER 2.0
PURPOSE AND NEED

2.1 INTRODUCTION

This chapter of the Draft Environmental Impact Statement (DEIS) describes the need for, and purpose of, the proposed Federal actions necessary to meet the forecast demand and reduce aircraft delay at the Palm Beach International Airport (PBIA). Federal actions would be required to enable the Palm Beach County Department of Airports (Airport Sponsor) to implement certain airport improvement projects to reduce congestion and delay at PBIA.

Within this DEIS, establishing "purpose and need" provides an explanation of why the Federal Aviation Administration (FAA) is considering an action and identifies the FAA's objectives. It also establishes the foundation for defining a range of reasonable alternatives and evaluation of those alternatives.

This chapter first explains the requested Federal actions associated with implementing the Airport Sponsor proposed improvements, or reasonable alternatives. A summary discussion of specific problems facing PBIA and the need for improvements is then presented. Lastly, a listing of the FAA's objectives (purpose) is provided.

2.2 REQUESTED FEDERAL ACTION

The *Airport and Airway Improvement Act* of 1982 (49 United States Code (USC) Chapter 471) establishes Federal aviation policy that, in part, states "that airport construction and improvement projects that increase the capacity of facilities to accommodate passenger and cargo traffic be undertaken to the maximum feasible extent so that safety and efficiency increase and delays decrease." The Act also directs the Secretary of Transportation to maintain a plan for developing public use airports. The *National Plan of Integrated Airport Systems* (NPIAS) includes eligible airport development projects considered necessary by the Secretary to provide a safe, efficient, and integrated system of public use airports. FAA takes action to implement national aviation policy through a wide range of programs, including those that establish standards for airport development and provide grants to increase airport capacity to meet projected demand and reduce congestion.

The requested Federal action being considered in this DEIS is the FAA's unconditional approval of portions of the 2001 PBIA Airport Layout Plan (ALP), including subsequent minor modifications. The PBIA ALP depicts long-term airfield improvements proposed by the Airport Sponsor. The improvements proposed by the Airport Sponsor at this time include major airfield improvements to reduce aircraft congestion and delay. The Airport Sponsor proposal includes the following major elements:

- Modifications to Runway 9R/27L and taxiways,
- Modifications to Runway 13/31 and taxiway, and
- Other Enabling and Connected Actions.

The Airport Sponsor's Proposed Project was developed during the Master Plan process. The Proposed Project is depicted on the ALP and has been approved by the Palm Beach County Board of County Commissioners. The role of the Federal government is to assist the Airport Sponsor with aviation improvements necessary to meet Federal aviation policies and objectives. The FAA would also assure that the project improvements would be implemented and operated in accordance with applicable FAA airport design standards, operating requirements, and grant assurances. Palm Beach County and the Airport Sponsor have the fundamental role of deciding whether or not to proceed with the proposed improvements. If airport improvements are implemented, the Airport Sponsor has the role of planning, constructing, and operating the improvements.

The specific Federal actions being requested through this DEIS are:

- The unconditional approval of revisions to the 2001 PBIA ALP (with subsequent minor modifications) for those portions for which this DEIS provides environmental analysis and,

- The Federal environmental approval necessary to proceed with processing of an application for Federal funding for those development items qualifying under the former *Airport and Airway Improvement Act* of 1982, as amended and recodified at 49 USC 47101, et seq.

Those portions of the ALP that depict the proposed improvements would be processed by FAA to:

- Assess operational factors affecting the safe and efficient control of air traffic;

- Establish conformance with FAA airport design criteria, Federal regulations, and grant agreements (Federal Aviation Regulations [FAR] Parts 77, 139, 150, 152, 157, and 169); and

- Determine conformance with the National Environmental Policy Act (NEPA), the Council on Environmental Quality (CEQ) regulations, and other applicable Federal environmental requirements, and ensure adequate mitigation of significant impacts, if any.

Specific elements of the FAA approval actions include:

- FAA determination of the effects upon safe and efficient utilization of airspace;

- FAA determination that the projects are in conformance with FAA airport design criteria and FAA review and approval of construction plans and specifications;

- FAA determination that the project is in conformance with Federal grant agreements per FAR Parts 77, 150, 152, 157, and 169;

- FAA review and approval of an amended Airport Certification Manual (FAR Part 139); and

- FAA designation of controlled airspace and revised routing (FAR Parts 71 and 75).

Appropriate Federal findings would be required prior to FAA approval of the above-listed portions of the ALP, funding of the proposed airport improvements, and associated air traffic and airspace management actions.

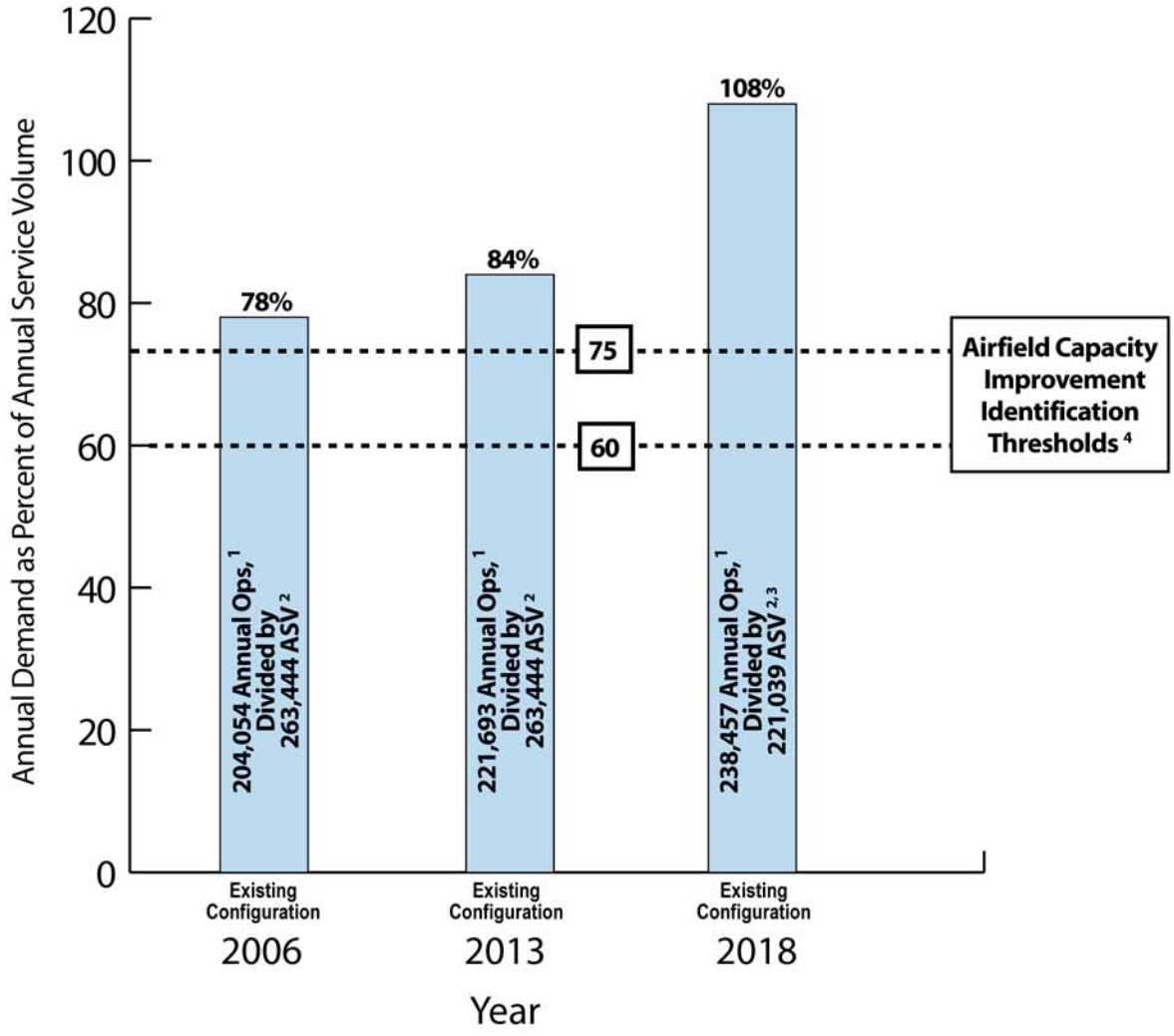
2.3 PROBLEM STATEMENT

Based on the requested Federal action outlined in the preceding section of this DEIS, the FAA noted two conditions that affect the ability of PBIA to efficiently accommodate future aviation demand. First, the existing airfield infrastructure and geometry contribute to congestion and delay during peak periods of aircraft operations. Second, the projected growth in aircraft operations at PBIA over time would increase average annual delay to unacceptable levels as established by the FAA.

2.3.1 CAPACITY LIMITATIONS CONTRIBUTE TO CONGESTION AND DELAY DURING PEAK PERIODS

Studies conducted by the FAA and the Airport Sponsor found that PBIA is constrained by both the current airfield layout and connection to the FAA enroute airspace system. The existing airfield infrastructure and geometry at PBIA contributes to airfield congestion during peak periods of aircraft arrivals and departures. The existing commercial service Runway 9L/27R accommodates a majority of air carrier and general aviation (GA) departures and arrivals because of its orientation, length, and instrumentation. The airport's crosswind runway, Runway 13/31, is used mostly by GA aircraft, although less frequently than Runway 9L/27R. The crosswind runway intersects Runway 9L/27R, reducing airfield capacity and increasing the probability for runway incursions. Closely-spaced parallel Runway 9R/27L is used almost exclusively by small GA aircraft (weighing less than 12,500 pounds). Because PBIA no longer supports substantial levels of GA flight training operations, Runway 9R/27L contributes little to needed airfield capacity. From an airfield standpoint, the existing runway configuration (two dependent air carrier runways and one dependent GA runway) does not provide enough capacity to operate efficiently at peak periods. Further, the length of the crosswind runway imposes weight-limited departures of the commercial fleet operating at PBI. As a result, PBI virtually operates as a one runway airport, severely limiting its ability to support existing and future demand during peak periods and the existing and future fleet mix (CH2M Hill, 2006a).

Much of south Florida's enroute air traffic is in a north-south corridor along its east coast, near busy air carrier and GA airports. To improve airspace and procedures to help meet the increasing growth in traffic at all the South Florida airports, the FAA has implemented a redesign of the enroute and terminal airspace and procedures serving south Florida airports, including PBIA. This action has reduced airspace-related delays in South Florida. However, during peak periods of high demand at PBIA (i.e., peak season and peak hour), the local Air Traffic Control Tower (ATCT) must optimize the movement of arriving and departing aircraft both on the ground and in the air. ATCT procedures during peak periods require restrictions on aircraft departures and reduce the ability of the ATCT to efficiently stage aircraft based on route of flight, restricted departure fix, or destination airport. These conditions contribute to departure delays. Due to these constraints, the ATCT is often forced to increase spacing between arrivals to accommodate departing aircraft to avoid further impacting the overall efficiency of the terminal and enroute operation, the effects of which are exacerbated by the single runway operation at PBIA.



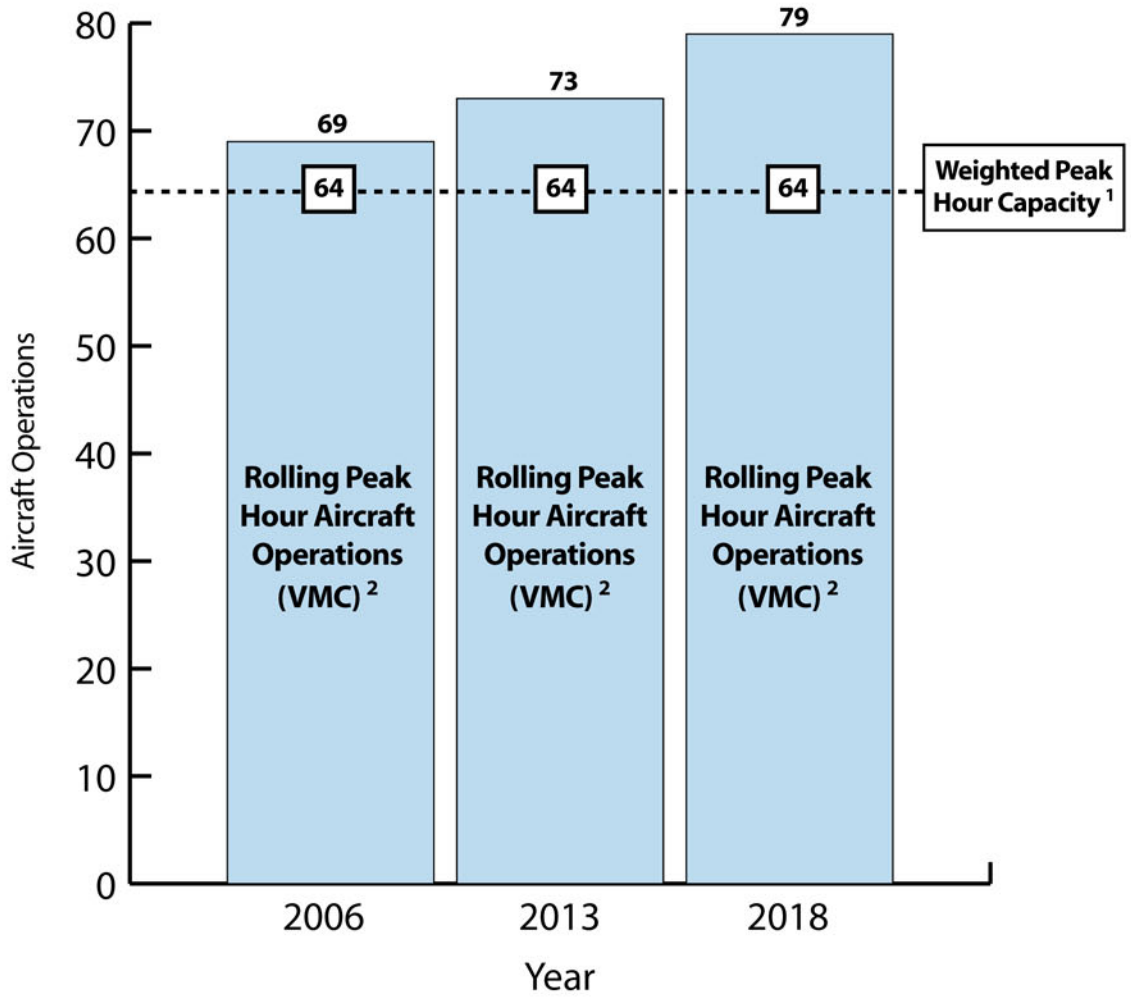
Source: [1] Palm Beach International Airport Airfield Improvement Project Modeling Assumptions - Ricondo & Associates, Inc. November 2006, Table V-1.

[2] Palm Beach International Airport System Study - Phase 1 PBIA Airspace / Airfield Constraints Analysis, CH2M HILL, November 2005. Table 3-11.

[3] Assumes Year 2020 Calculated ASV.

[4] FAA Order 5090.3C, Field Formulation of the National Plan for Integrated Airport Systems, 2000.

Environmental Impact Statement Airfield Improvement Project Palm Beach International Airport	**Annual Service Volume vs. Operational Demand**	**FIGURE 2.4.1-1**



Source: [1] Palm Beach International Airport System Study - Phase 1 PBIA Airspace / Airfield Constraints Analysis, CH2M HILL, November 2005. Table 3-11.

[2] As derived using SIMMOD modeling assumptions developed by Ricondo & Associates and the FAA-approved aviation activity forecast for PBIA.

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Peak-Hour Aircraft Movement Capacity and Demand - Existing Airfield Configuration

FIGURE 2.4.1-2

TABLE 2.4.2-1
ANNUALIZED AVERAGE DELAY TIME (MINUTES) PER AIRCRAFT OPERATION

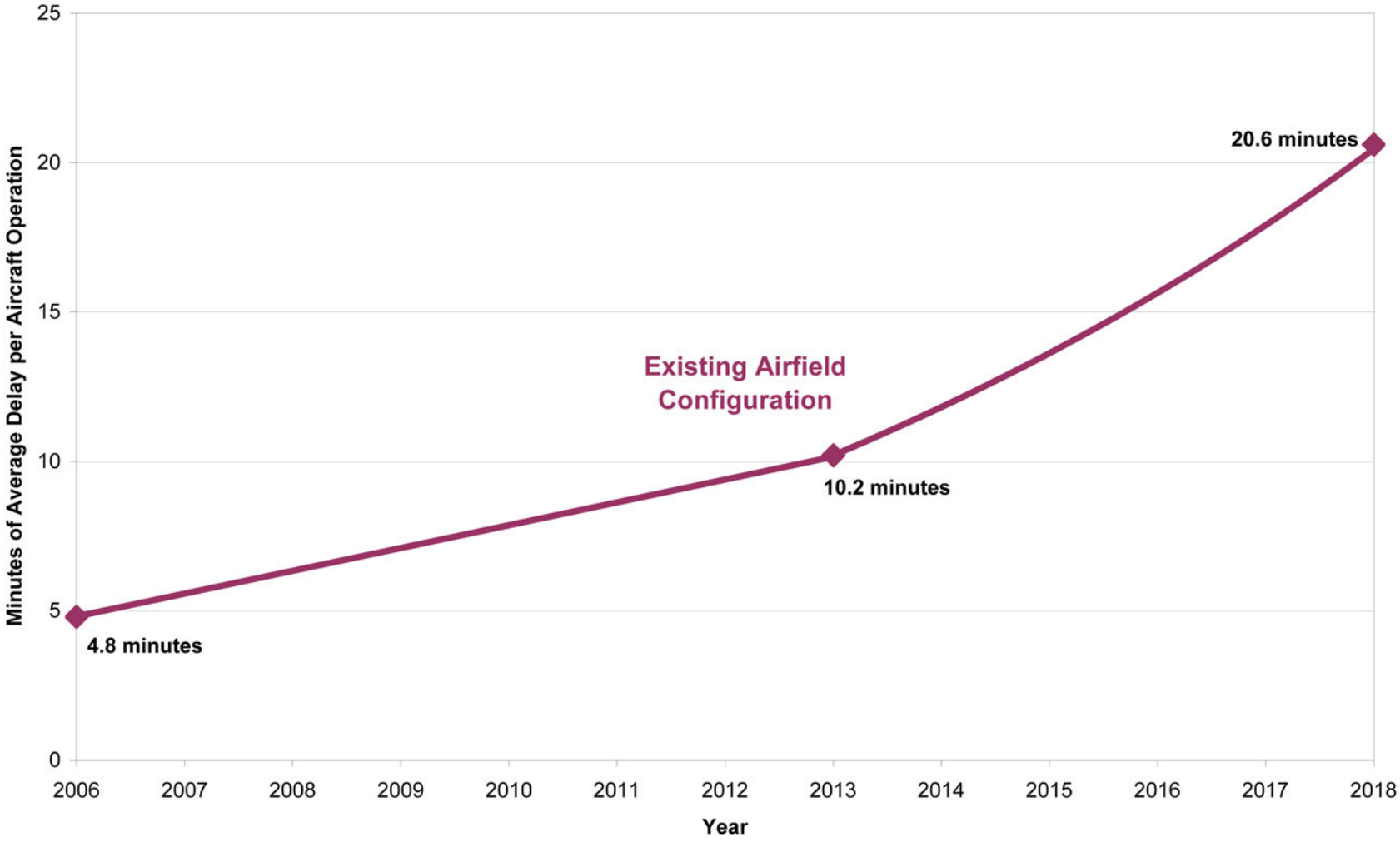
Year	Existing Airfield
2006	4.8
2013	10.2
2018	20.6

Source: *Palm Beach International Airport, Airfield Improvement Project, Modeling Assumptions*, Ricondo & Associates, November 2006, Tables VII-3 and VII-4.

2.5 PURPOSE OF PROPOSED ACTIONS

Based on the number of annual aircraft operations forecasted by the FAA and the Airport Sponsor and other relevant factors affecting capacity, FAA has determined that levels of average annual aircraft delay at PBIA currently exceed the threshold of acceptable level of delay. FAA further finds that aircraft delay will worsen substantially by 2013 and through 2018. Therefore, the purpose of the Federal actions contemplated by the FAA is to accommodate existing and forecasted demand for travel within the Palm Beach Service Area with an acceptable level of delay at PBIA.

FIGURE 2.4.2-1
Annualized Average Delay per Aircraft Operation at PBIA



Source: *Palm Beach International Airport, Airfield Improvement Project, Modeling Assumptions*, Ricondo & Associates, November 2006.