CHAPTER 1.0
PURPOSE AND NEED

1.1 INTRODUCTION

The Port of Oakland (Port), as owner and operator of Oakland International Airport (OAK or Airport), proposes to construct various improvements to the Runway Safety Areas (RSAs) for each of its four runways at the Airport in order to comply with a federal mandate. Specifically, the OAK RSA Improvement Project (Proposed Action) is being undertaken by the Port in response to the requirements of *The Transportation Treasury, Housing and Urban Development, the Judiciary, The District of Columbia, and Independent Agencies Appropriations Act, 2006* (Public Law [PL] 109-115), November 30, 2005. PL 109-115 requires completion of RSA improvements by airport sponsors that hold a certificate under Title 14, Code of Federal Regulations (CFR), Part 139, to comply with Federal Aviation Administration (FAA) design standards by December 31, 2015. For additional information on RSA requirements, see **Section 1.2.2.**

This Environmental Assessment (EA) has been prepared pursuant to the requirements of Section 102(2)(c) of the National Environmental Policy Act (NEPA), and Section 509(b)(5) of the Airport and Airway Improvement Act of 1982, as amended. The FAA is the lead federal agency to ensure compliance with NEPA for airport development actions. The U.S. Army Corps of Engineers is a cooperating agency for this EA. The EA has also been prepared in accordance with FAA Order 1050.1E, *Environmental Impacts: Policies and Procedures*, and FAA Order 5050.4B, *NEPA Implementing Instructions for Airport Actions*.

This EA is intended to identify and consider potential environmental impacts related to the proposed implementation of the OAK RSA Improvement Project. This chapter includes a brief description of OAK; a description of the Proposed Action; a discussion of the need for and the purpose of the Proposed Action; a description of the requested federal actions; and a description of the format of this EA.

1.2 BACKGROUND INFORMATION

1.2.1 DESCRIPTION OF EXISTING AIRPORT

The Port owns and operates OAK, a medium hub airport, and holds a certificate under 14 CFR Part 139. OAK accommodates both commercial service aircraft and general aviation operations. The Airport, located in the City of Oakland and a small portion in the City of Alameda in Alameda County, California, is approximately 2 miles west of Interstate 880, and is adjacent to San Francisco Bay. OAK provides airfield, terminal, and support facilities for commercial flights, air charter/taxi operations, air cargo, military, and general aviation operations. The location of OAK is shown on **Figure 1-1**. OAK is a critical component of the transportation network serving the Bay Area, the region, the California Aviation System Plan, and the National Airspace System. The Airport also provides international air service. The Bay Area relies on aviation as a major means of travel and for the shipment of goods. In 2010, approximately 9.5 million passengers and 510,963 metric tons of air cargo, including freight and mail, were transported through the Airport (OAK, 2011).

The Airport encompasses approximately 2,600 acres, including approximately 517 acres of wetlands under jurisdiction of the U.S. Army Corps of Engineers. The primary Airport features are illustrated on **Figure 1-2**. OAK is a primary commercial service airport with four runways: three runways at North Field (Runways 9R-27L, 9L-27R, and 15-33) and one runway at South Field (Runway 11-29). **Table 1-1** shows the use of each runway as a percentage of total operations at the Airport. The Airport has 29 aircraft gates at two terminals: Terminal 1, with 16 aircraft gates; and Terminal 2, with 13 aircraft gates (Port of Oakland, 2006). The FAA's 2011 Terminal Area Forecast shows that OAK had a total of 225,692 annual aircraft operations in 2010 (FAA, 2012a). The Terminal Area Forecast is the FAA's official published forecast of the airports in the National Plan of Integrated Airport Systems. An aircraft operation is defined in Appendix A of FAA Advisory Circular (AC) 150/5070-6B, *Airport Master Plans*, as one landing, takeoff, or touch-and-go procedure.

Table 1-1
Percent Use of Total Airport Operations for Each Runway (2010)

Runway	Percent Use
North Field	
Runway 15	<0.1
Runway 33	8.02
Runway 9L	0.74
Runway 27R	9.62
Runway 9R	1.69
Runway 27L	13.63
North Field Total	**33.69**
South Field	
Runway 29	60.19
Runway 11	6.12
South Field Total	**66.31**
Total Airport Use	**100.00**

Source: HMMH, 2011

The three North Field runways are Runway 9R-27L, Runway 9L-27R, and Runway 15-33. The runways primarily serve general aviation aircraft. Runways 9R-27L and 9L-27R serve as alternative commercial runways during emergencies and maintenance shutdowns of Runway 11-29 in South Field. Runway 15-33 is used for small aircraft, such as those shown on **Figure 1-3.**

South Field has one runway, Runway 11-29, which serves commercial air carriers, business jets, and cargo aircraft.

AIRPORT LOCATION

Oakland International Airport
Oakland, California

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FIGURE 1-1

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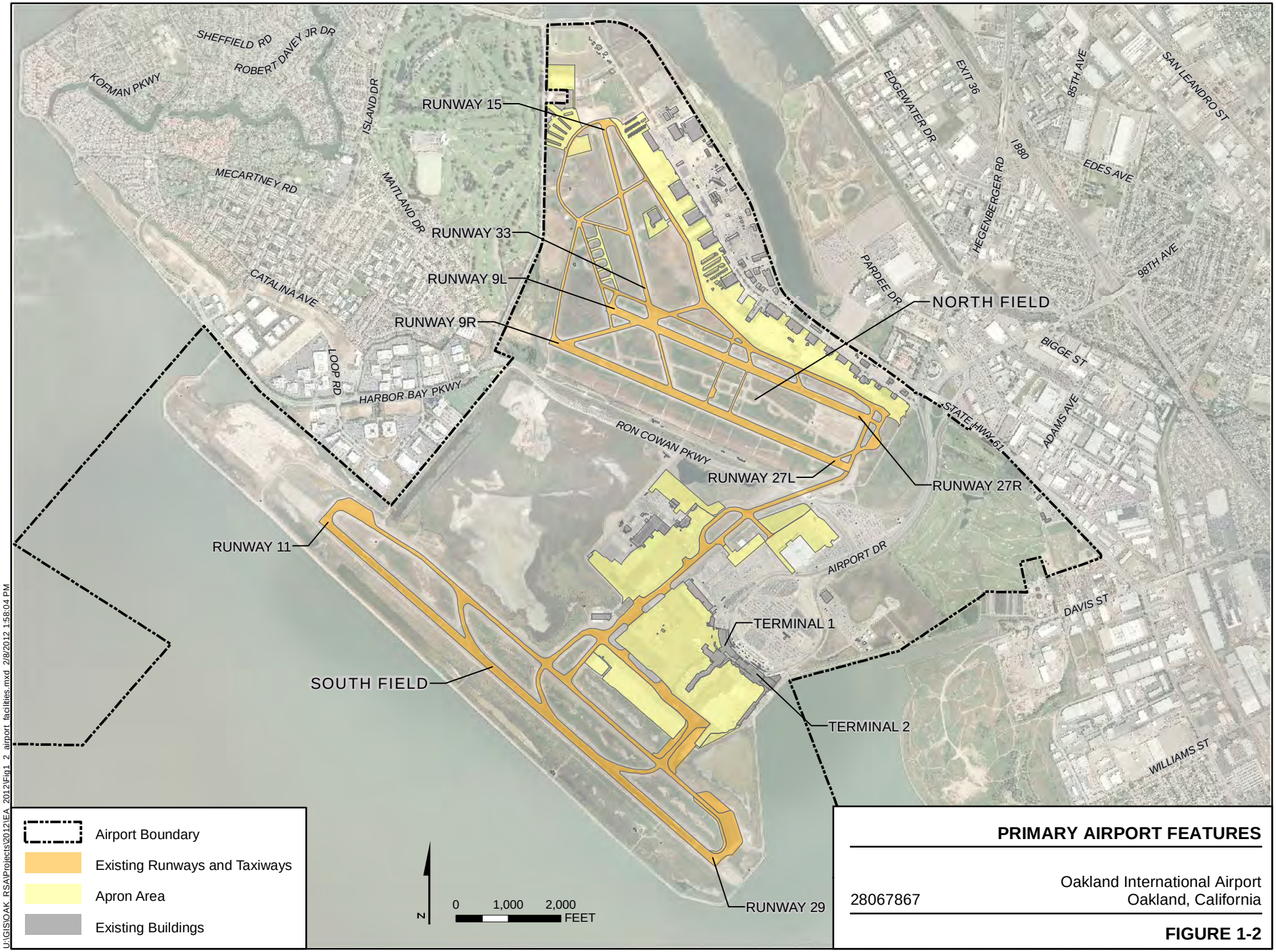

PRIMARY AIRPORT FEATURES

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Oakland International Airport
Oakland, California

FIGURE 1-2

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Source: Aerial Photo, Digital Globe, April 2007.

CESSNA 421

CESSNA 172

Source:
Cessna 421: Airliners.net
Cessna 172: Cessna.com

TYPICAL AIRCRAFT USING RUNWAY 15-33

Oakland International Airport
Oakland, California

28067867

FIGURE 1-3

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A runway can be used in either direction, depending on wind direction, with a name for each direction. Runways are identified based on their magnetic orientation and are named by a number between 01 and 36. As an example, Runway 11-29 at OAK is oriented along a line extending approximately 110° southeast and 290° in the opposite direction (northwest). Thus, Runway 11-29 operates as Runway 11 when planes are landing or departing to the southeast, and as Runway 29 when planes are landing and departing to the northwest.

Two passenger terminal buildings (Terminal 1 and Terminal 2) accommodate the domestic and international passenger airlines that currently serve OAK, with Southwest Airlines providing the greatest number of flights, followed by Alaska Airlines and JetBlue Airways. The primary carriers that currently provide air cargo service are FedEx, United Parcel Service, and Ameriflight. Additionally, three fixed-based operators, KaiserAir, Business Jet Center, and Landmark Aviation, provide general aviation facilities in North Field. Approximately 300 corporate and privately owned aircraft are based at OAK, using various aircraft hangars and outdoor tie-downs.

Additional facilities include an Aircraft Rescue and Firefighting station, aircraft maintenance and storage hangars, three fuel farms (two in North Field and one in South Field), vehicle service roads, rental car facilities, vehicle parking lots, and connections to public transit, including Bay Area Rapid Transit.

As provided for in FAA AC 150/5300-13, *Airport Design*, runways are designed to accommodate specific categories of aircraft. The Airport Reference Code (ARC) is a coding system used to relate airport design criteria to the operational and physical characteristics of the airplanes intended to operate on a particular runway. The first part of a runway's ARC is a letter that represents the Aircraft Approach Category, defined by the aircraft approach speed. The second part of the ARC is a Roman numeral, representing the Airplane Design Group (ADG), which is defined by the airplane wingspan or tail height, whichever is the most restrictive to an aircraft's safe movement on the airport (FAA, 1989). **Table 1-2** provides the length, design aircraft, and ARC for the runways at OAK. This information is important to the development of the Proposed Action and the considerations of alternatives for accomplishing the project purpose.

Table 1-2
Key Runway Characteristics

Runway	Length (feet)	Design Aircraft[(1)]	ARC
North Field			
15-33	3,372	Falcon 900	B-II
9L-27R	5,454	MD-11	D-IV
9R-27L	6,212	747-400	D-V
South Field			
11-29	10,000	747-400	D-V

Notes:
1. Design aircraft based on OAK Airport Layout Plan.
ARC = Airport Reference Code

Also of importance is the fact that Runways 27R, 11, and 29 are each equipped with an instrument landing system (ILS) that provides navigational information to pilots during periods of reduced visibility due to clouds, fog, rain or night time. The ILS has two components:

- A localizer antenna that provides horizontal guidance, and
- A glide slope antenna that provides vertical guidance.

The areas in front of these antennae must meet FAA standards for grade and surface conditions, as described below, so that the navigational signals can be properly transmitted to the approaching aircraft.

1.2.2 DESCRIPTION OF EXISTING RUNWAY SAFETY AREAS

Chapter 1 of FAA AC 150/5300-13, *Airport Design,* defines an RSA as an "identified surface surrounding the runway prepared and suitable for reducing the risk of damage to airplanes in the event of an undershoot, overshoot, or excursion from the runway." The FAA has established specific design standards for RSAs in Section 305 of the AC. Pursuant to FAA AC 150/5300, Section 305 A, RSAs should be:

(1) cleared and graded and have no potentially hazardous ruts, humps, depressions, or other surface variations;

(2) drained by grading or storm sewers to prevent water accumulation;

(3) capable, under dry conditions, of supporting snow removal equipment, aircraft rescue and firefighting equipment, and the occasional passage of aircraft without causing structural damage to the aircraft; and

(4) free of objects, except for objects that need to be located in the runway safety area because of their function. Objects higher than 3 inches (7.6 centimeters) above grade should be constructed, to the extent practicable, on low-impact-resistant supports (frangible-mounted structures) of the lowest practical height with the frangible point no higher than 3 inches (7.6 centimeters) above grade. Other objects, such as manholes, should be constructed at grade. In no case should their height exceed 3 inches (7.6 centimeters) above grade.

The applicable dimensional standards for RSAs are also included in FAA AC 150/5300-13, *Airport Design*, Table 3-3. Both the ADG and the Aircraft Approach Category form the basis for establishing the standard RSA dimensions for a runway. However, for Approach Category C aircraft (which generally include narrow-body jet aircraft such as the Boeing 737) and Approach Category D aircraft (which generally include wide-body jet aircraft such as the MD-11 and Boeing 747), RSA dimensions are constant regardless of ADG.

Table 1-3 summarizes the RSA dimensional requirements for all the runways at OAK. Because all runways at OAK can be used in either direction depending on wind conditions, the RSA requirement for distance beyond the runway end applies to both ends of each runway. The RSA for Runways 9R-27L, 9L-27R, and 11-29 extends 250 feet either side of the runway centerline (an overall width of 500 feet), continuing to the end of the RSA beyond each runway end. For Runway 15-33, the RSA is 150 feet wide centered on the runway centerline.

Table 1-3
Standard RSA Dimensions

RSA Dimensions (feet)	ARC B-II (Runway 15-33)	ARC C-IV and D-V (Runways 9R-27L, 9L-27R, and 11-29)
RSA Width	150	500
RSA Length Prior to Landing Threshold	300	600
RSA Length Beyond the Runway	300	1,000

Notes:
ARC = Airport Reference Code
RSA = Runway Safety Area
Source**:** Table 3-3 from FAA Advisory Circular 150/5300-13, *Airport Design*

Based on the requirements of PL 109-115 (discussed further in **Section 1.4**), the FAA requested that the Port evaluate and determine whether all of the RSAs at the Airport met current FAA design standards. The Port prepared two RSA studies to review existing conditions, identify deficiencies with current RSA standards, and develop recommendations for improvements. The first study was prepared in 2005, evaluating the RSAs and alternatives for correcting any deficiencies for all four runways at the Airport (URS, 2005b). A second study was completed in 2011 for Runways 9R-27L, 9L-27R, and 11-29. The 2011 report (which incorporated the 2005 study and added new information) summarized the evaluations of the runway-specific RSA improvement alternatives (URS, 2011).

As part of the 2005 RSA study, an inventory of existing RSA soil conditions at OAK was compiled. RSA deficiencies were identified, and to the extent feasible, quantified (URS, 2005b). The existing RSAs are constrained by San Francisco Bay, the perimeter dike surrounding parts of the Airport, major roadways adjacent to the Airport property, wetlands, and vehicle service roads. In addition, some signs and navigational aids (NAVAIDS)[1] located within the RSAs require relocation or redesign, and several areas require grading or fill to comply with current FAA design standards. A detailed tabulation of these items are compiled in the 2005 RSA study and potential means to correct these items is included in the project description.

Key RSA dimensional deficiencies at OAK are summarized by runway in **Table 1-4**. Other RSA deficiencies are shown on **Figures 1-4** and **1-5**.

In addition to the dimensional deficiencies listed above, the following is a summary of other areas of non-compliance noted in the 2005 RSA Study.

[1] The term Navigational Aid Systems (NAVAIDS) includes the following systems: Approach Lighting System with Sequenced Flashing Configuration 2 (ALSF-2); Medium-Intensity Approach Lighting System with Runway Alignment Indicator Lights (MALSR); Instrument Landing System (ILS) (which consists of a Localizer and Glide Slope); Runway visual range (RVR); Localizer; Inner Marker; and Precision Approach Path Indicator (PAPI). The NAVAIDS systems that would not have any impacts as a result of this project are not discussed further in this document.

Table 1-4
Summary of Existing Runway Safety Area Conditions
Oakland International Airport

Runways and Runways Ends	Meets FAA RSA Standards?	Dimensional Deficiency (feet)[2]	
		Prior to Landing	Beyond Runway End
Runways 9R-27L and 9L-27R			
9R	No[1]	None	None
27L	No[1]	None	210
9L	No[1]	None	115
27R	No[1]	None	None
Runway 15-33			
15	Yes	None	None
33	No	None	62
Runway 11-29			
11	No[1]	None	515
29	No[1]	115	None

Notes:

1. The existing RSAs of Runways 9L-27R, 9R-27L, and 11-29 are substandard due to soil conditions and the presence of roadways within standard dimensions of the RSAs, regardless of the dimensional sufficiency.
2. The RSA for all runways except Runway 15-33 are 500 feet wide, centered along the runway centerline, which complies with the width dimensions required in FAA Advisory Circular 150/5300-13, *Airport Design*. The RSA for Runway 15-33 is 150 feet wide.

FAA = Federal Aviation Administration

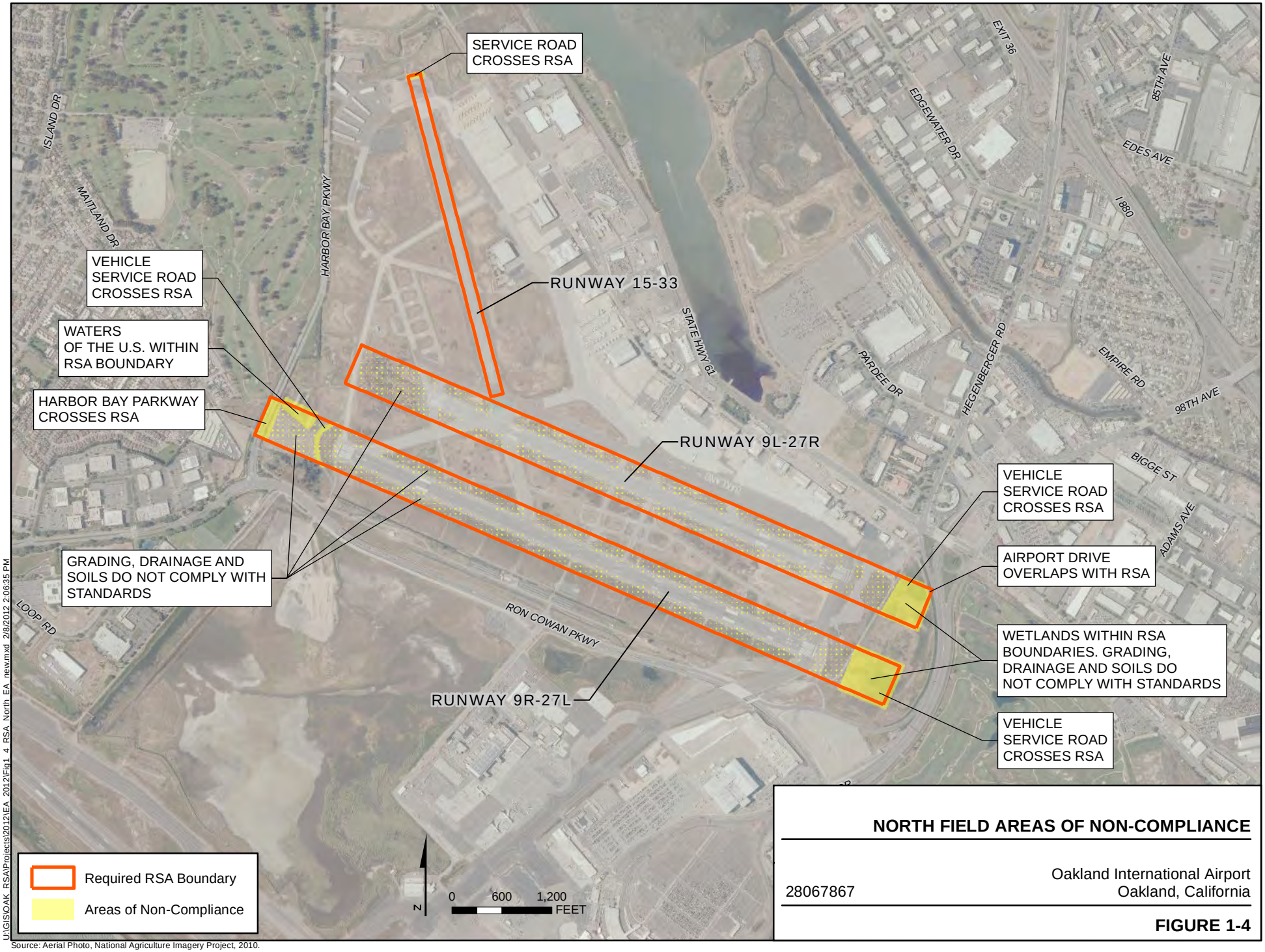
RSA = Runway Safety Area

Runway 15-33

- A vehicle service road is located approximately 230 feet northwest of the runway within the existing RSA.

Runways 9R-27L and 9L-27R

- A vehicle service road is located approximately 270 feet west of the Runway 9R threshold, within the dimensions of a standard RSA;
- Harbor Bay Parkway is located less than 1,000 feet west of the Runway 9R threshold, within the dimensions of a standard RSA;
- A vehicle service road runs through the area within the dimensions of a standard RSA for both the Runway 27L and 27R RSAs. The vehicle service road is located approximately 400 feet from the Runway 27L threshold and approximately 520 feet from the Runway 27R threshold;
- The Airport perimeter fence and Airport Drive are located 885 feet east of the Runway 27R threshold, within the dimensions of a standard RSA, resulting in a tapered corner at the northeast end of the existing RSA for RW 9L-27R;



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Source: Aerial Photo, National Agriculture Imagery Project, 2010.

NORTH FIELD AREAS OF NON-COMPLIANCE

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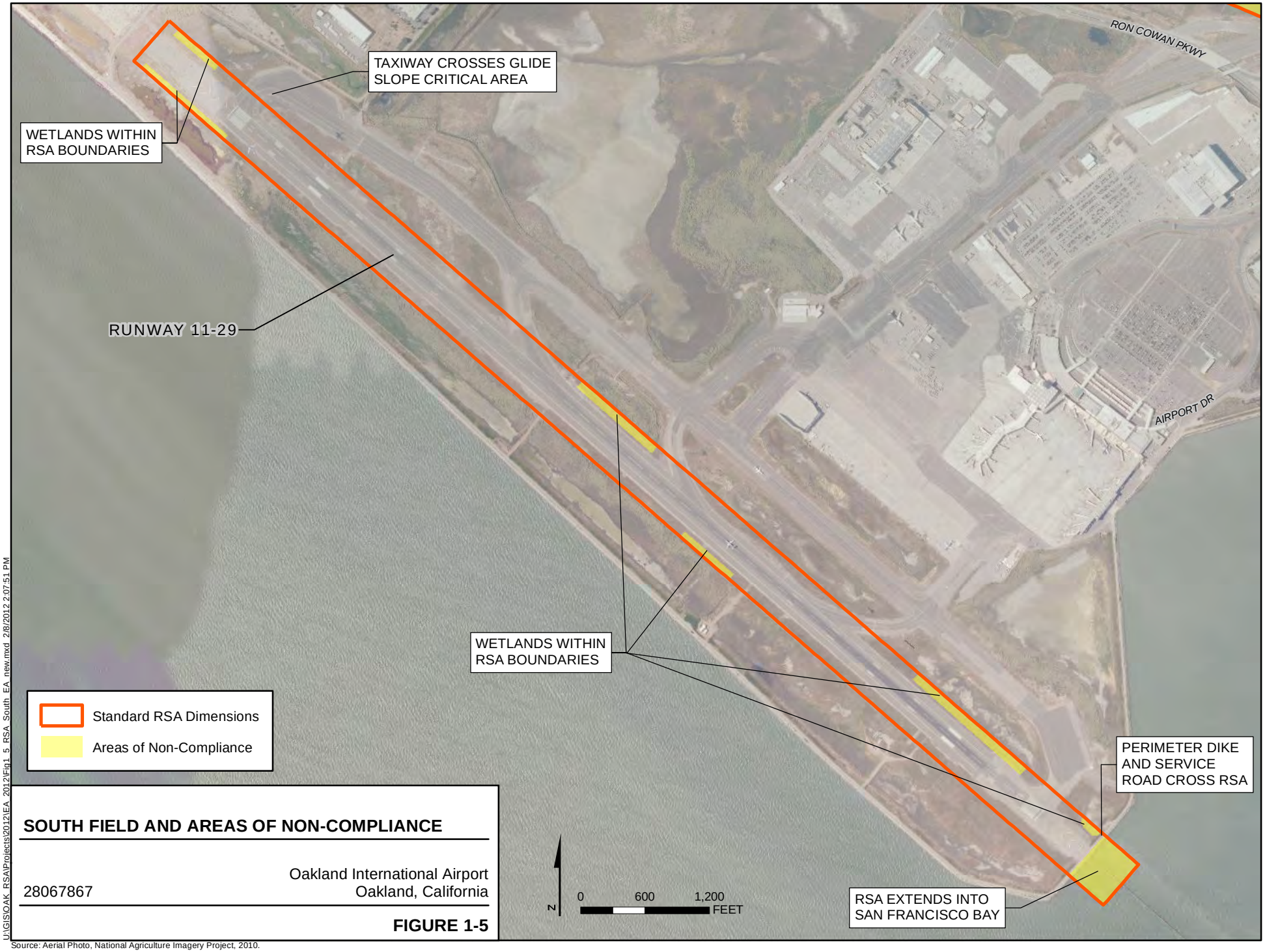
Oakland International Airport
Oakland, California

FIGURE 1-4



SOUTH FIELD AND AREAS OF NON-COMPLIANCE

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Oakland International Airport
Oakland, California

FIGURE 1-5

Source: Aerial Photo, National Agriculture Imagery Project, 2010.

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- Some areas in the existing RSAs comprise wetlands and waters within Clean Water Act Jurisdiction (herein referred to as wetlands and waters of the U.S. and do not currently provide sufficient support for emergency equipment and aircraft in compliance with FAA AC 150/5300-13, *Airport Design*; and
- There are additional non-compliant conditions regarding surface grades, soil conditions, and frangibility of signs and NAVAIDS in the lateral RSAs and the RSAs beyond the runway ends.

Runway 11-29

- The Runway 11 localizer antenna array is located 485 feet from the Runway 29 threshold, within the dimensions of a standard RSA, as presented in **Table 1-3**;
- A vehicle service road and perimeter dike are located within the dimensions of a standard RSA, east of the Runway 29 threshold. Beyond the perimeter dike, the dimensions of a standard RSA would extend into San Francisco Bay;
- Some areas in the existing RSAs comprise wetlands and waters of the U.S., and do not currently provide sufficient support for emergency equipment and aircraft in compliance with FAA AC 150/5300-13, *Airport Design*; and
- For both Runway 29 and 11 ends, the RSAs overlap with the glide slope antenna critical areas, which are areas located adjacent to the runway extending away from the glide slope antenna towards the direction of approaching aircraft. The glide slope antenna critical area must be clear and leveled so as to accurately reflect the glide slope signal that provides vertical guidance to approaching aircraft. A condition exists on the Runway 11 end that does not meet FAA standards for NAVAIDS. Specifically, on the Runway 11 end, the glide slope antenna critical area overlaps with a portion of the RSA and Taxiway W. Aircraft that transit the RSA, entering or leaving the runway on Taxiway W, create a temporary obstruction that interferes with the glide slope antenna signal. This condition does not meet FAA standards in FAA AC 150/5300-13, *Airport Design*, Section 602, which states that a glide slope and critical area should be "located on the side of the runway offering the least possibility of signal reflections from buildings, power lines, vehicles, and aircraft, so as to avoid interference."

1.3 DESCRIPTION OF THE PROPOSED ACTION

The proposed improvements at OAK that comprise the Proposed Action are described in the following sections, and are depicted on **Figures 1-6** and **1-7**.[2]

1.3.1 RUNWAY 15-33

The primary components of the RSA enhancements to Runway 15-33 associated with the Proposed Action include:

[2] The figures presented in this document are intended to describe the overall nature and intent of the Proposed Action and other alternatives and technical information of environmental impacts. These figures show dimensions of project elements at a planning level of detail. The subsequent design of these elements will result in dimensional refinement. The final design of project elements may result in dimensional requirements that vary slightly from those shown herein.

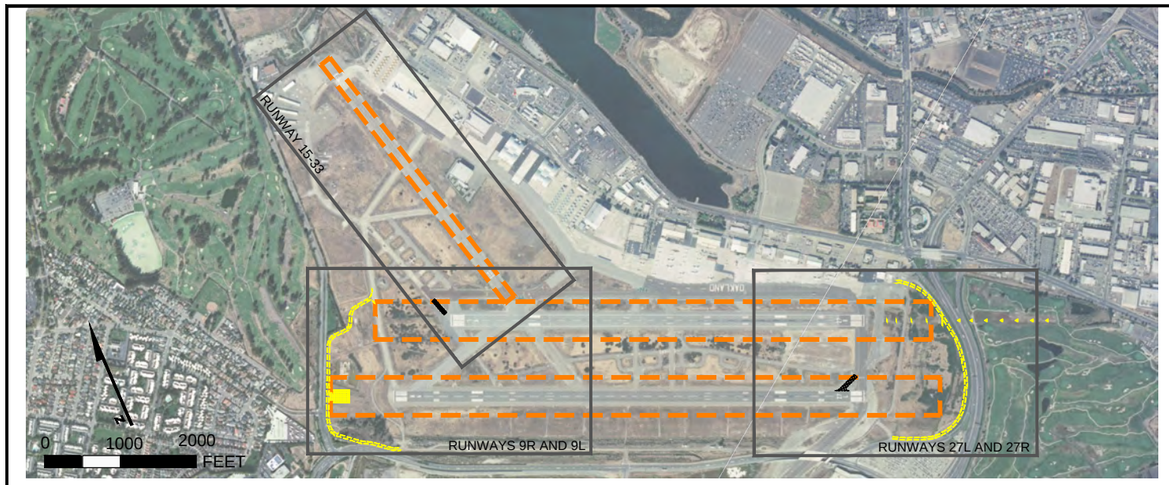
- Shift Runway 15-33 by 75 feet to the southeast, or towards the terminal complex, through repainting threshold markings on existing pavement.

1.3.2 RUNWAYS 9R-27L AND 9L-27R

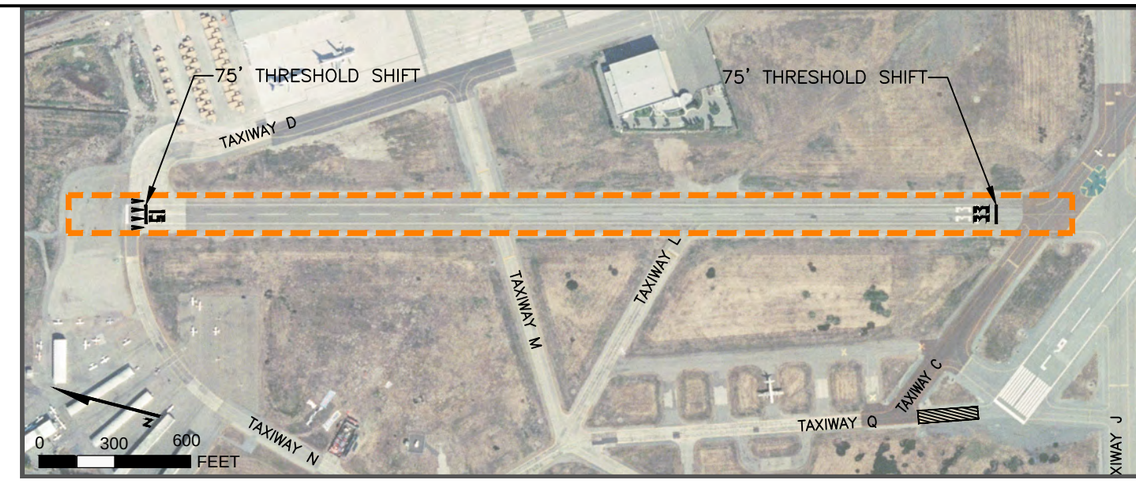
The primary components of the RSA enhancements to Runways 9R-27L and 9L-27R associated with the Proposed Action include:

- Relocate the vehicle service road west of both runways westward to a location adjacent to the Airport perimeter fence and Harbor Bay Parkway;
- Relocate the vehicle service road east of the runways eastward to a location adjacent to the Airport perimeter fence and Airport Drive;
- Reduce the Accelerate-Stop Distance Available and Landing Distance Available from 5,454 feet to 5,336 feet by establishing declared distances. The Takeoff Run Available and Takeoff Distance Available for both Runways 9L and 27R would remain 5,454 feet, as depicted on **Figure 1-6**. Also, the Accelerate-Stop Distance Available and Landing Distance Available for Runway 27R would be 5,454 feet (declared distances are explained in **Section 2.4.4** and **Appendix A**);
- Fill portions of non-tidal waters of the U.S. located at the western end of the Runway 9R-27L RSA beyond the Runway 9R end to comply with FAA standards for RSAs;
- Fill and grade non-tidal wetland areas in the RSAs beyond the ends of Runways 27L and 27R to comply with FAA standards for RSAs;
- Install an Engineered Materials Arresting System (EMAS) measuring approximately 250 feet long by 170 feet wide, with a Setback of approximately 580 feet west of the approach end of Runway 9R[3] (a description of EMAS is provided in **Section 2.4.5**);
- Correct various non-compliant conditions regarding surface grades, soil conditions, and frangibility of signs and NAVAIDS in the lateral RSAs and the RSAs beyond the runway ends;
- Remove unused pavement between runways. The removal of this pavement is needed to allow the placement of soil fill. The soil fill is excess material that would be cut from other parts of the North Field RSAs as part of the overall plan to achieve compliant grades throughout the RSAs; and
- Install improvements to the stormwater collection and conveyance systems to ensure proper drainage of the RSAs.

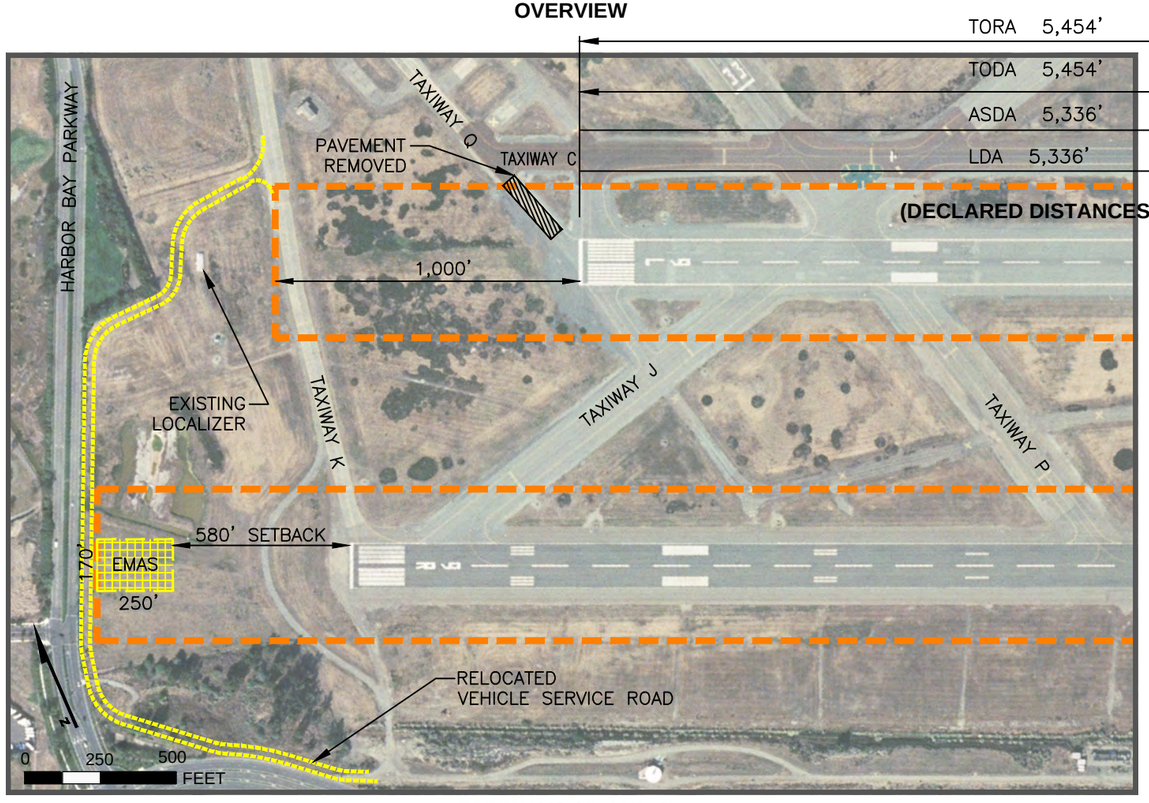
[3] Per FAA AC 150/5220-22A, Engineered Materials Arresting Systems (EMAS) for Aircraft Operations, paragraph 7.b. and Figure A.1-1, the RSA for Runway 9R is considered standard because an EMAS installation such as for Runway 9R which provides at least 600 feet between the runway threshold and the far end of the EMAS bed is considered to meet FAA RSA standards if the approach end of the runway has vertical guidance.



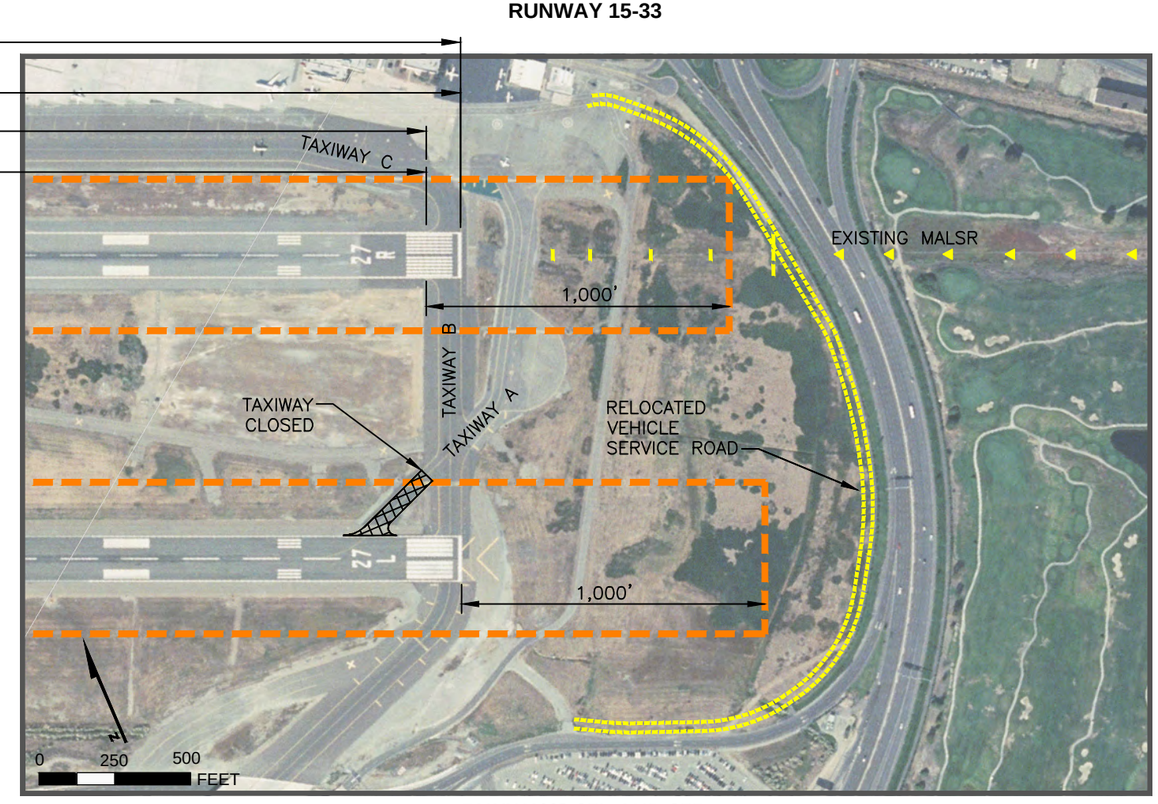
OVERVIEW



RUNWAY 15-33



RUNWAYS 9R AND 9L



RUNWAYS 27L AND 27R

LEGEND

RUNWAY SAFETY AREA

PROPOSED ACTION - NORTH FIELD IMPROVEMENTS

Oakland International Airport
Oakland, California

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FIGURE 1-6

dahlia_mendoza Feb 07, 2012 – 2:02pm T:\Port of Oakland_ RSA\Figures_EA\FIGURE 1-6.dwg
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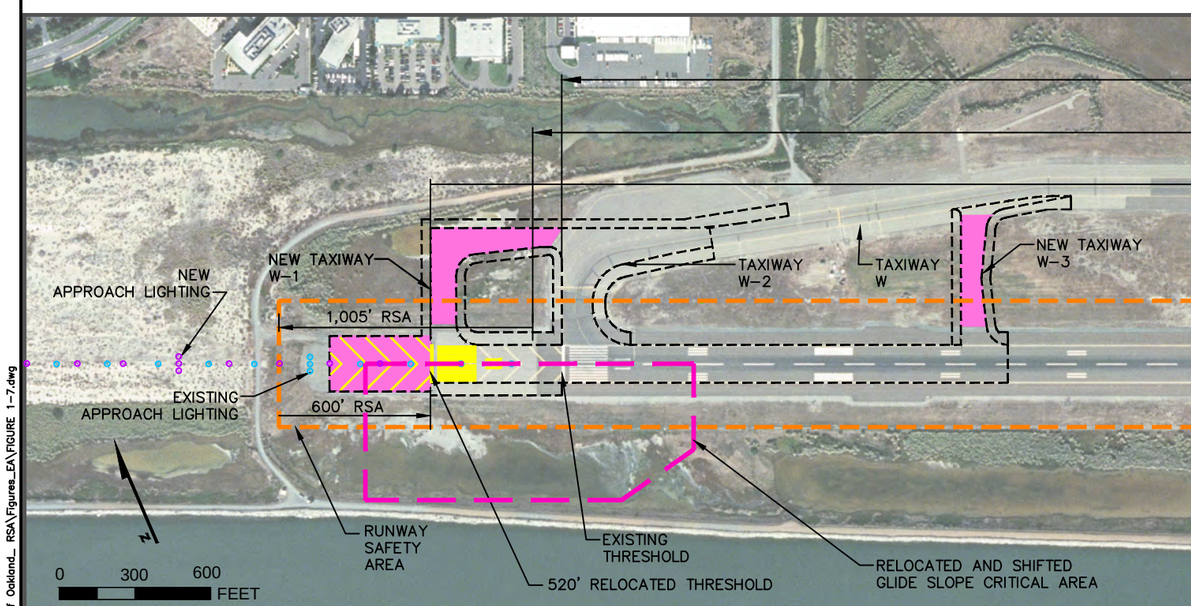
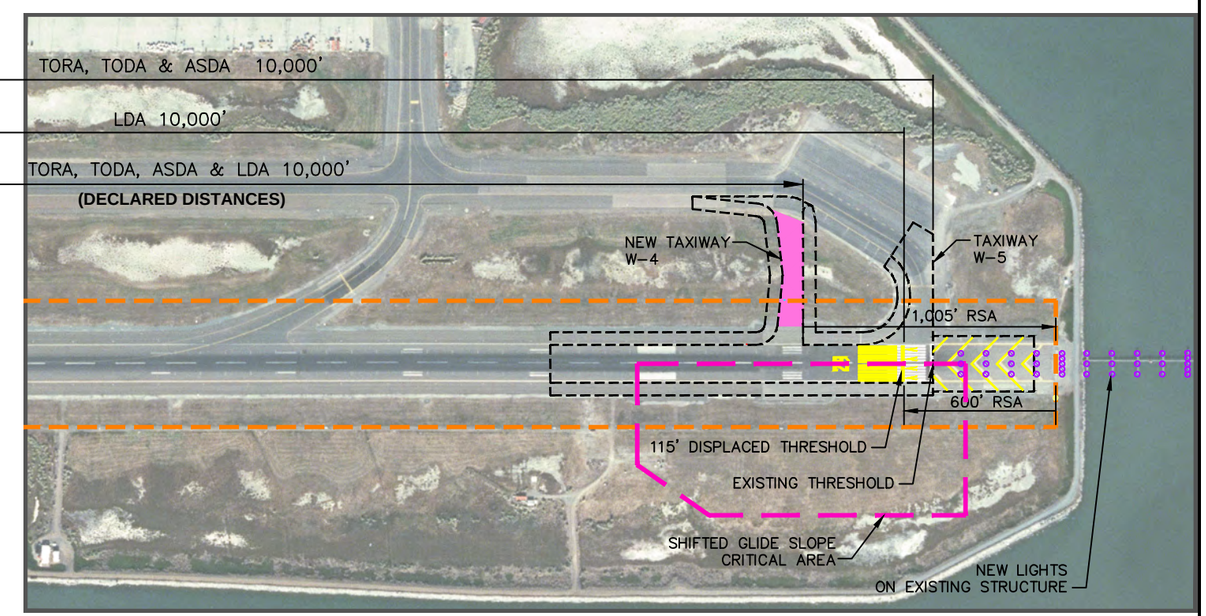
OVERVIEW



RUNWAY 11



RUNWAY 29

LEGEND

- EXISTING APPROACH LIGHTING
- NEW APPROACH LIGHTING
- RELOCATED THRESHOLD
- RUNWAY SAFETY AREA
- GLIDE SLOPE CRITICAL AREA
- NEW OR RECONSTRUCTED PAVEMENT
- NEW TAXIWAY OR RSA PAVEMENT

NOTE:

1. TAXIWAY DESIGNATIONS W-1, W-2, W-3, W-4, & W-5 USED FOR THE PURPOSE OF THIS ANALYSIS ONLY.

PROPOSED ACTION - SOUTH FIELD IMPROVEMENTS

Oakland International Airport
Oakland, California

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FIGURE 1-7

dahlia_mendoza Mar 08, 2012 – 12:47pm T:\Port of Oakland_ RSA\Figures_EA\FIGURE 1-7.dwg

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1.3.3 RUNWAY 11-29

The primary components of the RSA enhancements to Runway 11-29 associated with the Proposed Action include:

- Relocate the Runway 11 approach threshold 520 feet to the northwest;
- Displace the Runway 29 landing threshold 115 feet to the northwest;
- Extend Taxiway W to the northwest to the relocated Runway 11 approach threshold;
- Construct new connector Taxiway W1 between the extended Taxiway W and relocated Runway 11 threshold;
- Construct new connector Taxiway W4 between Taxiway W and displaced Runway 29 threshold;
- Construct new connector Taxiway W3 located at approximately 2,000 feet southeast of the existing threshold of Runway 11;
- Establish a declared distance of 10,000 feet for both takeoffs and landings on Runway 11-29. After construction of the RSA improvements, the future physical length of Runway 11-29 would be 10,520 feet. However, with the application of declared distances, the usable runway length for takeoffs and landings on Runway 11-29 would remain at the current length of 10,000 feet. The declared distances would designate a portion of Runway 11-29 pavement as providing standard RSAs meeting FAA design standards, while designating the remaining 10,000 feet of pavement as available for takeoff and landing operations, as described below under Runway 29 and Runway 11 operations (declared distances are explained in **Section 2.4.4** and **Appendix A**). No additional runway capacity is created by this project alternative;
- Relocate the glide slope antenna for Runway 11 (which provides vertical guidance to arriving aircraft) from the northeastern side of the runway to the southwestern side, and shift it 520 feet to the northwest, including the glide slope antenna critical area, in accordance with FAA design standards contained in FAA AC 150/5300-13, *Airport Design*;
- Shift the glide slope antenna for Runway 29, including the glide slope antenna critical area, by 115 feet to the northwest (no grading required);
- Fill portions of non-tidal ponded areas within Clean Water Act Jurisdiction within the lateral and runway-end RSAs and new Runway 11 glide slope antenna critical area end to comply with FAA standards for RSAs;
- Replace and shift the Runway 11 Medium-Intensity Approach Lighting System with Runway Alignment Indicator Lights approach lights 520 feet to the northwest;
- Relocate portions of the Runway 29 Approach Lighting System with Sequenced Flashing Configuration 2 on the existing trestle structure; and

- Correct various non-compliant conditions regarding surface grades, soil conditions, and frangibility of signs and NAVAIDS within the RSA.

1.3.4 RSA IMPROVEMENT PROJECT PRELIMINARY SCHEDULE

The Proposed Action outlined in **Sections 1.3.1, 1.3.2,** and **1.3.3** is expected to be constructed between 2013 and 2015 to comply with the December 31, 2015, deadline established by PL 109-115. The Proposed Action would be constructed in phases to minimize disruption to aircraft operations, and must be coordinated with the FAA with regard to changes in approach procedures. The anticipated design and construction schedule is presented in **Table 1-5**.

Table 1-5
Oakland International Airport Runway Safety Area Improvement Project – Projected Schedule

RSA Project	Anticipated Construction Start Date	Anticipated Construction End Date
Runway 11-29	February 2013	December 2013
Runway 9L-27R and 15-33	March 2014	October 2014
Runway 9R-27L	March 2015	October 2015

Note:
RSA = Runway Safety Area

1.4 PURPOSE AND NEED FOR PROPOSED ACTION

1.4.1 SPONSOR'S PURPOSE AND NEED

OAK, like many airports in the United States, was built before the current FAA design standards for RSAs were adopted in the late 1980s. In the late 1990s and early 2000s, a series of aircraft accidents resulted in the loss of human life, and highlighted the need for airports to comply with RSA standards. These accidents prompted the passage of PL 109-115, which states that "*not later than December 31, 2015, the owner or operator of an airport certificated under 49 United States Code (USC) 44706 shall improve the airport's RSAs to comply with the FAA design standards required by 14 CFR Part 139"* (PL 109-115, November 30, 2005 [119 Statute 2401]).

The purpose of the OAK RSA Improvement Project is to improve the existing RSAs at the Airport to comply with the RSA standards included in FAA AC 150/5300-13, *Airport Design*, as required by PL 109-115, while concurrently complying with all other applicable design standards of the AC (e.g., those for NAVAIDs). Specifically, the Proposed Action must either implement specific RSA safety improvements as defined in FAA AC 150/5300-13, *Airport Design,* as required by PL 109-115, or provide an equivalent level of safety in accordance with FAA Orders 5200.8, *Runway Safety Area Program*, and 5200.9, *Financial Feasibility and Equivalency of RSA Improvements and EMAS* (FAA, 1999; FAA, 2004a). As indicated above, these requirements must be implemented by no later than December 31, 2015.

1.4.2 FAA PURPOSE AND NEED

The proposed RSA Improvement Project is not a capacity-enhancing project, and would not result in any associated increase in aviation activity at the Airport. The FAA's statutory mission is to ensure the safe and efficient use of navigable airspace in the United States. Under FAA Order 5200.8, *RSA Program*, the FAA is directed to implement the RSA Improvement Project, which is intended to provide enhanced safety through the establishment of RSAs at all federally obligated airports. Implementation of the Proposed Action at OAK would result in compliance with the design standards set forth in FAA AC 150/5300-13, *Airport Design,* to the extent practicable.

1.5 REQUESTED FEDERAL ACTIONS

The requested FAA actions include the following:

- Unconditional approval of the portion of the Airport Layout Plan that depicts the proposed RSA improvements, to meet FAA Airport Design Standards;
- Implementation of revised air traffic control procedures below 3,000 feet above ground level;
- Establishment of new Standard Instrument Departure and Standard Terminal Arrival Route procedures;
- Determinations under 49 USC §§ 47106 and 47107 relating to the eligibility of the Proposed Action for federal funding under the Airport Improvement Program, including determination, under 49 USC § 40117, pertaining to applications and approvals to impose and use Passenger Facility Charges in association with the Proposed Action;
- Establishment of flight procedure modifications pursuant to 14 CFR Part 95, Instrument Flight Rules Altitudes;
- Installation, relocation, operation, and maintenance of Navigational Aid Systems (NAVAIDS) required to support the Proposed Action by FAA Air Traffic Organization;
- Processing of airspace changes, installation, and/or relocation of FAA equipment (e.g., ILS and Approach Lighting Systems);
- Close coordination with the Airport by appropriate FAA program offices, as required, to maintain aviation and airfield safety during construction pursuant to 14 CFR Part 139 and 49 USC § 44706;
- Approval of the appropriate amendments to the Airport Certification Manual pursuant to 14 CFR Part 139;
- Appropriate amendment to air carrier operations specifications pursuant to 49 USC § 44705 to account for the change in runway ends and installation of EMAS, as appropriate; and
- FAA determination of the Proposed Action's effects on the safe and efficient use of airspace.

1.6 DOCUMENT REQUIREMENTS AND ORGANIZATION

The format and content of this EA conforms to the requirements of the Council on Environmental Quality regulations that implement the procedural provisions of NEPA, and FAA Orders 1050.1E, *Environmental Impacts: Policies and Procedures,* and 5050.4B, *NEPA Implementing Instructions for Airport Actions* (FAA, 2006b). The FAA is the lead federal agency for NEPA compliance for airport development actions. This EA has also been prepared in accordance with the requirements of Section 102(2)(c) of NEPA (PL 91-190, 42 USC § 4321 et seq.) and Title V of the *Airport and Airway Improvement Act of 1982*, as amended. NEPA requires an assessment of the environmental consequences of federal actions, which include actions funded or approved by the federal government.

This EA incorporates by reference all, or portions of, other specified technical documents. These documents, including the 2005 and 2011 OAK RSA studies (URS, 2005b; 2011), either relate to the Proposed Action or the alternatives considered for meeting the stated purpose of and need for the Proposed Action; or provide additional information concerning the environmental setting in which elements of the Proposed Action would be implemented.

The contents of each section of this EA are summarized below.

- **Chapter 1.0**, Purpose and Need, provides a brief description of OAK and the Proposed Action, its purpose, and why it is needed. Included in this chapter are the requested FAA actions, and an outline of the format of this EA.
- **Chapter 2.0**, Alternatives, provides an overview of the identification and screening of alternatives considered as part of the environmental evaluation process. Included in this section is a discussion of evaluation criteria, comparison of the alternatives, alternatives eliminated from further consideration, and reasonable alternatives retained for further study.
- **Chapter 3.0**, Affected Environment, describes existing environmental conditions within the project study area.
- **Chapter 4.0**, Environmental Consequences and Mitigation, discusses and compares the environmental impacts associated with the No Action Alternative, the Proposed Action, and Project Alternative A, as well as proposed mitigation actions.
- **Chapter 5.0**, Public Involvement, discusses the public involvement activities that have been conducted in association with the EA process. This section also presents a list of federal, state and local agencies and other interested parties that have been involved in EA coordination efforts.
- **Chapter 6.0**, List of Preparers.
- **Chapter 7.0**, References.
- **Chapter 8.0**, List of Abbreviations and Acronyms.
- The **Appendices** contain various reference materials, including technical information, and records of coordination activities.