Oakland International Airport
Airport Perimeter Dike Improvement

Environmental Assessment
and Initial Study

Public Scoping Workshop
January 13, 2011
5:30 to 6:30 PM
Oakland International Airport, Terminal 1
2nd Floor, In-Transit Lounge
Oakland, CA
Welcome

- Sign in at table near entrance
- To provide verbal comment tonight, fill out a speaker card
- To comment in writing use the provided comment sheet
  - Drop off at the end of the meeting
  - Mail or fax later
- Please hold comments and questions until end of presentation
Project Team Members

- Diane Heinze, P.E., Port of Oakland, Environmental Assessment Supervisor
- Douglas Pomeroy, FAA, Environmental Protection Specialist
- Arulnathan Rajendram, Ph.D., P.E., G.E., URS, Engineering Project Manager
- Linda Peters, URS, Environmental Project Manager
Agenda

- Introduction
- Project Overview
- Environmental Review Process
- Public Comments and Questions
INTRODUCTION
Airport Location

KEY FACTS:
- 9.5 million passengers (2009)
- 23,183 annual operations (2009)
- 491,000 metric tons of cargo (2009)

PROJECT SITE

LEGEND
- Major Cities
- Major Highways
- County Boundaries

MILES
Introduction

- FEMA remapping Flood Insurance Rate Maps
- Without certification, Oakland Airport may be in “Special Flood Hazard Area”
- FEMA certification requires documented ability to protect for 100-year flood
- OAK evaluated dike, determined improvements are needed
  - Flood control
  - Seismic stability
PORT OF OAKLAND

PERIMETER DIKE PROJECT
OVERVIEW
Project Background

- Dike forms the southwestern shoreline
- Constructed in three phases resulting in two types of dike
  - Phase 1 Construction: 1950s, 7000 ft of Runway
  - Phase 2 Construction: 1960s, 3000 ft of Runway
  - Phase 3 Construction: 1970s, 2500 ft of Dike Extension
- Three jet fuel lines are buried under the dike crest of the dike.
Typical Dike Section

- Elevation at top of crest structure
- Water side
- Jet fuel lines: 18' to 28'
- Elevation at dike centerline
- Elevation at landside toe: 3' to 3.5'

General Dike Section
Soil Investigation

- Performed soil investigation
  - Drilled holes through dike and into foundation to observe and collect soil samples
  - Tested soil samples in laboratory for determining strength and other properties
- Confirmed existence of clay and sand
- Characterized foundation
- Developed engineering properties
Vulnerability Assessment

- Performed engineering analysis for static and seismic loads
  - Static load corresponds to a 100 year flood (1% annual exceedance flood)
  - Seismic load corresponds to a 1,000 year return period earthquake (10% chance of exceedance in 100 years)
Vulnerability Assessment Results

- Analyses consisted of slope stability, seepage, erosion, overtopping, and seismic deformation
- Portions of dike do not meet FEMA standards for 100 year flood
- Portions of dike would not perform satisfactorily during a major earthquake
During a major earthquake...
During a major earthquake... 

- Significant movements of dike and foundation
- Potential breaching of dike
- Flooding of runways and surrounding areas

Dike did not breach during the 1989 Loma Prieta but experienced some movement
Proposed Dike Improvements

- Flood Control Measures
  - Raise dike structure
  - Construct stability berm
  - Construct slurry wall

- Other Measures
  - Address sea-level raise
  - Condition assessment of jet fuel lines
Proposed Dike Improvements

Raising Dike (Typical)

ACOE Jurisdiction

Bay Side

Crest Structure

Raise Dike

Jet Fuel Lines

BCDC Jurisdiction

Wetland Boundary (ACOE)
Proposed Dike Improvements

Constructing Stability Berm

ACOE Jurisdiction

Bay Side

Jet Fuel Lines

Stability Berm

Wetland Boundary (ACOE)

BCDC Jurisdiction
Proposed Dike Improvements

Constructing Slurry Wall

- Bay Side
- Crest Structure
- Seepage Barrier
- Jet Fuel Lines
- BCDC Jurisdiction
- ACOE Jurisdiction
- Wetland Boundary (ACOE)
Proposed Dike Improvements

- Seismic Improvements
  - Deep soil-mixing or stone columns
  - Relocate active jet fuel lines
    - Alternative 1: entire relocation
    - Alternative 2: partial relocation
ENVIRONMENTAL REVIEW PROCESS
Environmental Review Process

- FAA funding requires review under the National Environmental Policy Act (NEPA), an Environmental Assessment (EA) is being prepared.
- OAK is concurrently preparing an Initial Study (IS) in compliance with the California Environmental Quality Act (CEQA).
- Environmental analysis informs the planning, design, and construction process.
- Analysis to include Proposed Project Alternatives and the No Project Alternative.
Environmental Review Objectives

- Provide detailed description of the proposed project and existing environment
- Present potential environmental effects
- Identify ways to reduce environmental effects through mitigation
- Support agency decision-making process
- Encourage public participation
NEPA / CEQA Environmental Topics

- Air Quality (Including Greenhouse Gases)
- Compatible Land Use
- Fish/Wildlife/Plants
- Wetlands
- Farmlands
- Cultural Resources
- Noise
- Coastal Resources
- Visual Quality/Light Emissions
- Water Quality/Floodplains
- Hazardous Materials, Pollution Prevention, and Solid Waste
- Natural Resources/Energy Supply
- Socioeconomic Impacts, Environmental Justice, and Children’s Health and Safety Risks
- Secondary (Induced) Impacts
- Cumulative Impacts
- CEQA Specific Topics (e.g., Geology & Soils)
### Anticipated Schedule

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- **Environmental Assessment/Initial Study (12/10 – 2/12)**
- **Design (12/10 – 10/12)**
- **Construction (Flood Improvements) (8/12 – 5/13)**
- **Construction (Seismic Improvements) (1/14 – 2/15)**

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PUBLIC SCOPING COMMENTS
Public Comment Process

- Submit speaker cards to speak
- Wait until your name is called
- Speak clearly and state your name and association
- Verbal comment time is limited to 5 minutes
- Use comment forms for written input
Provide Written Comments

Comments due January 27, 2011

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THANK YOU FOR YOUR PARTICIPATION