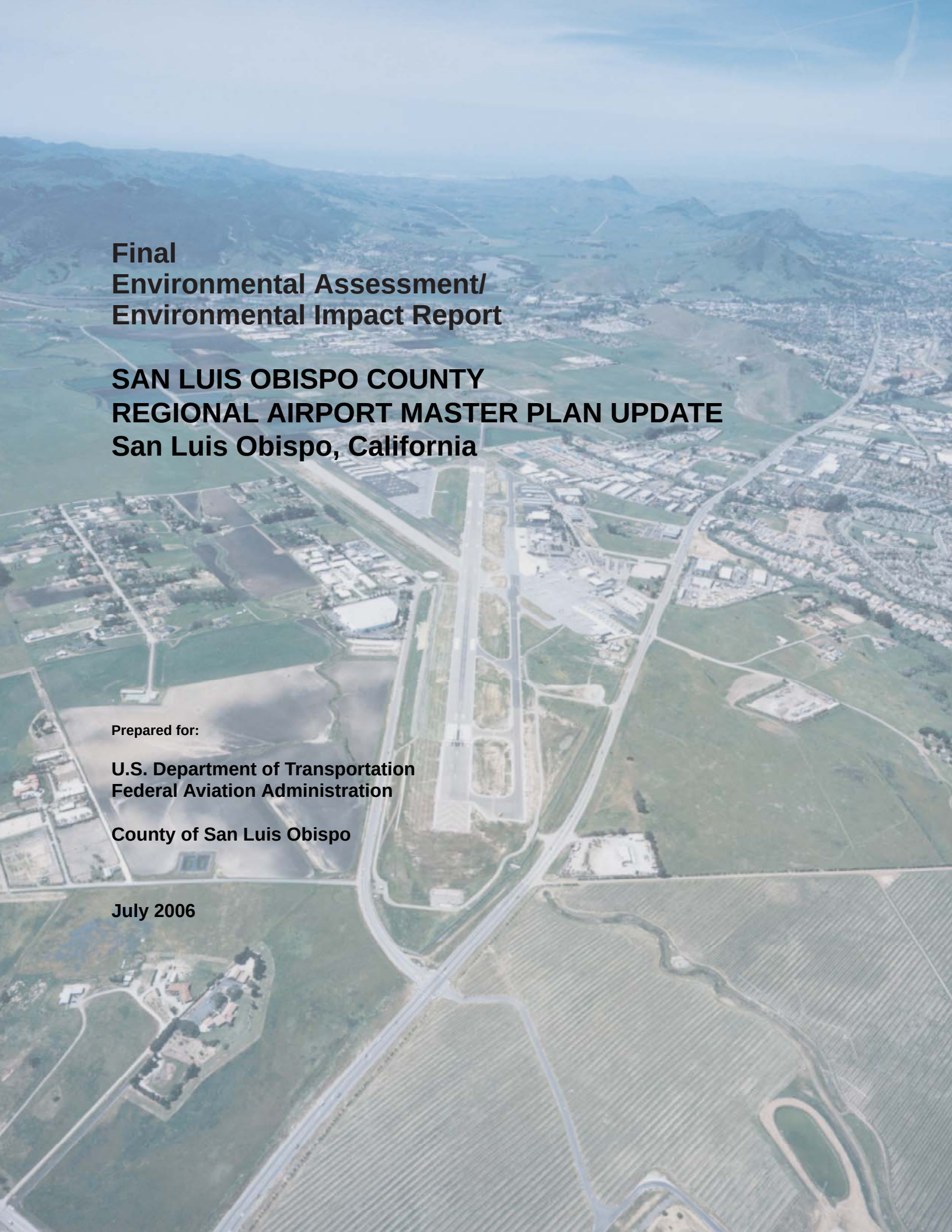


Final
Environmental Assessment/ Environmental Impact Report

SAN LUIS OBISPO COUNTY REGIONAL AIRPORT MASTER PLAN UPDATE
San Luis Obispo, California

Prepared for:

U.S. Department of Transportation
Federal Aviation Administration

County of San Luis Obispo

July 2006

Final
Environmental Assessment/
Environmental Impact Report

SAN LUIS OBISPO COUNTY
REGIONAL AIRPORT MASTER PLAN UPDATE
San Luis Obispo, California

Prepared for:

U.S. Department of Transportation
Federal Aviation Administration

County of San Luis Obispo

July 2006

Proposed 800-foot extension to Runway 9/27 and associated Parallel Taxiway system.

This environmental assessment becomes a Federal document when evaluated, signed, and dated by the Responsible FAA Official.

Responsible FAA Official

Prepared by:

ESA
225 Bush Street, Suite 1700
San Francisco, CA 94104

For further information:

Barry Franklin
U.S. Department of Transportation
Federal Aviation Administration
San Francisco Airports District Office
831 Mitten Road
Burlingame, CA 94010
(650) 876-2778

Klaasje Nairne
Airport Manager
San Luis Obispo County
Regional Airport
903-5 Airport Drive
San Luis Obispo, CA 93401
(805) 781-5205

TABLE OF CONTENTS

San Luis Obispo County Regional Airport Master Plan Update Environmental Assessment / Environmental Impact Report

List of Figures

Page

List of Tables

EXECUTIVE SUMMARY

S.1 Background

The proposed action evaluated in this Environmental Assessment and Environmental Impact Report (EA/EIR) is the implementation of improvement projects at San Luis Obispo County Regional Airport (SBP). The improvement projects are based on the Airport's Master Plan, which identifies a comprehensive program of airfield and landside improvements at the Airport.

The County of San Luis Obispo (County), which operates SBP, has established five principal objectives for the Master Plan for future facilities at SBP:

- to continue to provide aviation services at San Luis Obispo County Regional Airport that meet the present and future air transportation needs of local residents and the business community;
- to support and contribute to the economic well-being of San Luis Obispo County by facilitating tourism, business travel, and air cargo movement;
- to develop a land use and facility plan that designates the most efficient and productive aviation-related use of all Airport property in conformance with all applicable FAA standards;
- to identify a phased program or specific airfield and landside facility improvements to accommodate, to the extent reasonable and feasible, current and future demand for commercial services; and
- to balance future development of the Airport with the protection of the environment.

This EA/EIR evaluates the environmental consequences of the project components outlined in the Master Plan and identifies the various alternatives considered for development.

S.2 Proposed Action

Since October 2002, limited regional jet service has been provided at SBP. The Master Plan foresees a continued transition from turboprop aircraft to regional jet aircraft and recommends a phased improvement program through the year 2023 to accommodate the increase in the use of regional jets at SBP. The following presents a comprehensive summary of the elements included in the Airport's Phase I (year 2010) and Phase II (year 2023) Master Plan program. Phase I

represents the near-term Master Plan improvements subject to FAA approval for project implementation.

In accordance with FAA policy, the FAA will use this EA for ALP approval and future federal funding approvals over the next five-year period. Therefore, for purposes of the EA, the FAA is concerned only with the approvals associated with Phase I of the Master Plan program. These Phase I projects, which would be implemented by the year 2010, are outlined in Section 1.1.1 of this EA/EIR. Therefore, for purposes of compliance with NEPA, any FAA-related actions associated with the Master Plan process are focused on the specific projects that would occur as part of Phase I. However, in accordance with CEQA, San Luis Obispo County is required to be concerned with the "whole of the action," which is defined as all projects identified in the Master Plan program. Therefore, for purposes of this EA/EIR, the County's obligation under CEQA is to include both phases of the Master Plan. Therefore, any County-related actions or approvals associated with the Master Plan process includes all Phase I and Phase II projects (i.e., through the year 2023).

S.2.1 Phase I – 2010 (Proposed Near-Term Projects)

Projects included in Phase I of the SBP Master Plan are identified in Table S-1. The primary project included in Phase I is the proposed extension of Runway 11 by 800 feet. Most of the other airfield, aviation support facilities, and non-aviation projects identified in Table 1-1 are functionally related to the proposed extension of Runway 11. In addition to airfield improvements, the Master Plan includes new emergency and service access to ensure compliance with the FAA's *Runway Safety Area Program* and Federal Aviation Regulation (FAR) Part 139. For the FAA's obligation under NEPA, it is only these Phase I project components that are addressed in this EA. For the County's obligation under CEQA, these Phase I project components are only a part of the impacts addressed in this EIR.

S.2.2 Phase II – 2023 (Proposed Long-Term Projects)

As presented in Table S-2, Phase II of the SBP Master Plan includes airfield improvements, such as extending parallel Taxiway M by 800 feet and extending Runway 7 by 500 feet for a total of 3,000 feet. Phase II also includes extending the perimeter roadway along Taxiway M, abandoning buildings, grading to accommodate hangar development, and relocating the air traffic control tower by the FAA. The FAA is not considering any of these Phase II project components as part of their obligation under NEPA. For the County's obligation under CEQA, these Phase II project components, as well as the Phase I project components identified in Section 1.1.1 are being addressed in this EIR.

TABLE S-1
PHASE I PROJECT COMPONENTS OF SBP MASTER PLAN (2005-2010)

Airfield Facilities

Construct Runway 11 EMAS
Construct Runway 29 EMAS
Extend Runway 11 by 800 feet for a total of 6,100 feet
Extend (and connect) parallel Taxiway A by 800 feet
Construct Taxiway A hold apron plus 300-foot connection (interim until Taxiway A extended)
Develop perimeter service road around extended end of Runway 11
Repaint runway markings and install and improve runway lighting systems

Aviation Support Facilities

Acquire Filbin property (13.01 acres)
Grade for runway safety area (RSA) and object free area (OFA) at Runway 11 end
Import fill to support runway extension, taxiway extensions, RSA, and OFA at Runway 11 end
Grade the Flower Mound to use for fill material
Remove and replace Westside Detention Basin
Construct new swale parallel to the East Fork of San Luis Obispo Creek for floodwater containment
Construct drainage improvements
Acquire CB&I parcel (13.62 acres)
Acquire Saes property (2.33 acres)
Demolish portion of surface parking lot on Saes property
Relocate Saes parking lot
Acquire portion of the SLO City Storage property (1.00 acre)
Relocate utilities (12kV line, telephone)

Non-Aviation Projects

Close Santa Fe Road between Clarion Court and Tank Farm Road on a temporary basis
Realign Santa Fe Road between Buckley Road and the East Fork of San Luis Obispo Creek
Relocate driveways that provide local access from Santa Fe Road
Remove Fiero Lane Water Company settling pond

SOURCE: San Luis Obispo County Regional Airport Master Plan, 2005.

TABLE S-2
PHASE II PROJECT COMPONENTS OF SBP MASTER PLAN (2011-2023)

Airfield Facilities

Relocate navigation aids (glide slope indicator / VASI)
Extend (and connect) parallel Taxiway M by 800 feet
Relocate perimeter service road adjacent to Taxiway M
Extend Runway 7 by 500 feet for a total of 3,000
Extend Taxiway J by 500 feet
Extend approach lighting system (ALS) and construct access road to ALS

Aviation Support Facilities

Grade for relocated glide slope indicator
Demolish existing CB&I structures
Demolish improvements on remainder of Saes property
Grade for Buckley Road site development and for private hangar development
Construct West Side Hangar Development (phases 1 and 2)
Conduct siting study for Air Traffic Control Tower relocation (FAA responsibility)
Relocate Air Traffic Control Tower (FAA responsibility)

SOURCE: San Luis Obispo County Regional Airport Master Plan, 2005.

S.3 Purpose of the Master Plan Improvements

The purpose of the Phase I project components at SBP is to:

- accommodate existing and forecast demand for air passenger, air cargo, and general aviation services; and
- provide emergency access and service access for airside and landside facilities along the Runway 11 end, without direct conflicts with runway and taxiway activities.

Until the events of September 11, 2001, the Airport had experienced several decades of relatively steady growth in passenger and air cargo activity levels. This growth reflected the strength of the economy in general and the expansion in business, industry, and tourism in San Luis Obispo County. And, despite the effects of September 11, 2001, enplanements at SBP are again increasing. As documented in the Master Plan, regional jets will continue to be the fastest growing segment of the aviation industry over the next several years. Without the proposed Phase I project component improvements, the runway and related airfield constraints would increase the level of delays and inefficiencies currently experienced by air travelers and cause inefficiencies for those businesses operating at SBP, especially resulting from load penalties taken during times of higher temperatures.

S.4 Need for the Master Plan Improvements

SBP is an integral part of the economic viability of San Luis Obispo County. It is a gateway for air passengers traveling on business or pleasure and for goods being transported to and from the region. Over the years, the Airport has expanded to keep pace with growth. Due to the increasing use of regional jets by the regional/commuter airlines serving SBP, these improvements are necessary to meet the air transportation needs of residents and the business community. The Phase I project components are needed to:

- provide sufficient runway length to accommodate the departure of fully-loaded aircraft (e.g., regional jets) during warm temperatures without imposing constraints such as load penalties;
- reduce the potential for direct conflicts between runway and taxiway activities and emergency and service vehicles; and
- fully comply with runway protection measures for Runway 11/29, including Object Free Area (OFA), for the category C-II design group with a CRJ-700 as the selected design aircraft.

S.5 Alternatives

Section 1502.14 of the President's Council on Environmental Quality Regulations requires that the lead agency evaluate reasonable alternatives in the EA analysis. In addition, Section 15126(d) of the CEQA Guidelines requires that an EIR "describe a range of reasonable alternatives to the project, or to the location of the project, which could feasibly attain the basic objectives of the

project, and evaluate the comparative merits of the alternatives". The intent of the alternatives evaluation is to assure that alternatives that may enhance environmental quality or may have a less detrimental effect on the environment have been considered. The two alternatives presented in detail in this EA include the Proposed Action and the No Action Alternative (the "no build" condition). The EA/EIR compares the environmental effects of the Proposed Action with those of the No Action Alternative.

S.6 Environmental Consequences and Mitigation Measures

Two alternatives were included for full evaluation in this EA/EIR: the Proposed Action and the No Action Alternative. Table S-3 presents the results of these analyses in a matrix that compares the environmental and socioeconomic effects of the Proposed Action with the No Action Alternative as well as with the Baseline Conditions. For each environmental/socioeconomic topic, the matrix identifies whether any significant impacts would occur as a result of the Proposed Action. The conclusion of the EA/EIR is that with the adoption of the identified mitigation, no significant environmental impacts would result from the implementation of the Proposed Action.

TABLE S-3
ENVIRONMENTAL IMPACTS SUMMARY MATRIX (CEQA ONLY)

	Phase I (2005-2010)	Phase II (2011-2023)
Impact	**Compared to Baseline Conditions**	**Compared to Baseline Conditions**
Noise		
Changes in Aircraft Noise	LTS	LTS
Changes in Surface Traffic Noise	LTS	LTS
Construction Noise	LTS	LTS
Land Use Compatibility		
Changes in On-Airport Land Uses	LTS	LTS
Adjacent Land Use Compatibility	LTS	LTS

LTS = Less than significant
N/A = Not Applicable
S = Significant

SOURCE: ESA, 2006

TABLE S-3 (continued)
ENVIRONMENTAL IMPACTS SUMMARY MATRIX (CEQA ONLY)

Impact	Phase I (2005-2010) Compared to Baseline Conditions	Phase II (2011-2023) Compared to Baseline Conditions
Transportation		
Intersection Congestion Impacts	LTS	LTS
Construction-related Impacts	LTS	LTS
Parking Impacts	LTS	LTS
Traffic Safety Impacts	LTS	LTS
Employment		
Increased Permanent Employment	LTS	LTS
Increased Demand for Housing Stock	LTS	LTS
Relocation of Businesses	LTS	LTS
Public Services		
Increase in Demand for Schools	LTS	LTS
Increase in Demand for Hospital Services	LTS	LTS
Increase in Demand for Fire Protection and Emergency Services	LTS	LTS
Increase in Demand for Police Services	LTS	LTS
Utilities		
Increase in Water Consumption	LTS	LTS
Increase in Wastewater Generation	LTS	LTS
Air Quality		
Construction-Related Emissions	LTS	LTS
DPM Emissions	LTS	LTS
CO Emissions	LTS	LTS
Operational-Related Emissions	LTS	S
Water Quality		
Construction-Related Erosion	LTS	LTS
Increase in Nonpoint Source Pollutants in Receiving Surface Waters	LTS	LTS
Groundwater Contamination	LTS	LTS

LTS = Less than significant
N/A = Not Applicable
S = Significant

SOURCE: ESA, 2006

TABLE S-3 (continued)
ENVIRONMENTAL IMPACTS SUMMARY MATRIX (CEQA ONLY)

Impact	Phase I (2005-2010) Compared to Baseline Conditions	Phase II (2011-2023) Compared to Baseline Conditions
Cultural Resources		
Effects on Historical Resources	LTS	LTS
Potential Discovery of Unknown Archaeological Resources	LTS	LTS
Biotic Communities		
Bird Strikes	LTS	LTS
Loss of Common Vegetation Types and Habitat	LTS	LTS
Impacts on Sensitive Natural Communities	LTS	LTS
Impacts of Common Wildlife Species	LTS	LTS
Tree Removal	LTS	LTS
Endangered and Threatened Species		
Construction Impacts to Aquatic Invertebrates	LTS	LTS
Construction Impacts to Aquatic vertebrates	LTS	LTS
Construction Impacts to Birds	LTS	LTS
Construction Impacts to Plants	LTS	LTS
Wetlands		
Temporary and Permanent Impacts to Jurisdictional Waters	LTS	LTS
Floodplains		
Increase in Peak Runoff	LTS	LTS
Encroachment of 100-Year Floodplain	LTS	LTS
Farmlands		
Conversion of Agricultural Lands to Non-Agricultural Use	LTS	LTS
Energy Supply and Natural Resources		
Increase in Energy Consumption	LTS	LTS
Increase in Demand on Distribution	LTS	LTS
Use of Mineral Resources	LTS	LTS
Light Emissions		
Light Emissions	LTS	LTS
Aesthetics	LTS	LTS

LTS = Less than significant
N/A = Not Applicable
S = Significant

SOURCE: ESA, 2006

TABLE S-3 (continued)
ENVIRONMENTAL IMPACTS SUMMARY MATRIX (CEQA ONLY)

Impact	Phase I (2005-2010) Compared to Baseline Conditions	Phase II (2011-2023) Compared to Baseline Conditions
Hazardous Materials and Solid Waste		
Fuel Storage Facility and Spills	LTS	LTS
Hazardous Materials Transportation	LTS	LTS
Storage and Use of Other Hazardous Materials	LTS	LTS
Hazardous Waste Generation	LTS	LTS
Exposure of Workers to Hazardous Materials	LTS	LTS
Increase in Solid Waste	LTS	LTS
Construction Impacts		
Increased Noise Disturbance	LTS	LTS
Increased Traffic	LTS	LTS
Increased Air Emissions	LTS	LTS
Water Quality Degradation and Soil Erosion	LTS	LTS
Construction Impacts to Biological Resources	LTS	LTS
Increased Worker Exposure to Hazardous Materials	LTS	LTS
Geologic and Seismic Impacts		
Geologic Impacts	LTS	LTS
Seismic Impacts	LTS	LTS
Cumulative Impacts		
Cumulative Impact to Transportation	S	S
Cumulative Impact to Air Quality	LTS	S
Cumulative Impact to Endangered and Threatened Species	LTS	LTS

LTS = Less than significant
N/A = Not Applicable
S = Significant

SOURCE: ESA, 2006

CHAPTER 1
Proposed Action

San Luis Obispo County has prepared an Airport Master Plan for San Luis Obispo County Regional Airport (SBP). This Environmental Assessment and Environmental Impact Report (EA/EIR) evaluates the impacts of implementing the near-term and long-term projects identified in the Airport Master Plan. The project components are shown on the Revised Airport Layout Plan (ALP), which is provided at the end of this chapter.

The purpose of this EA/EIR is to evaluate the proposed near-term projects to ensure consistency with the requirements of the National Environmental Policy Act (NEPA), pursuant to Federal Aviation Administration (FAA) Orders 1050.1E (*Environmental Impacts: Policies and Procedures*) and 5050.4A (*Airport Environmental Handbook*) and to evaluate both the near-term and long-term projects to ensure consistency with the requirements of the California Environmental Quality Act (CEQA). NEPA requires that an environmental evaluation be prepared for any federal action that may have a significant impact on the environment. Similarly, CEQA requires state and local agencies to disclose and consider the environmental implications of their actions and, when feasible, to avoid or reduce the significant environmental impacts of their decisions.

1.1 Proposed Improvements and Phasing

Since October 2002, limited regional jet service has been provided at SBP. The Master Plan foresees a continued transition from turboprop aircraft to regional jet aircraft and recommends a phased improvement program through the year 2023 to accommodate the increase in the use of regional jets at SBP. The following presents a comprehensive summary of the elements included in the Airport's Phase I (year 2010) and Phase II (year 2023) Master Plan program. Phase I represents the near-term Master Plan improvements subject to FAA approval for project implementation.

In accordance with FAA policy, the FAA will use this EA for ALP approval and future federal funding approvals over the next five-year period. Therefore, for purposes of the EA, the FAA is concerned only with the approvals associated with Phase I of the Master Plan program. These Phase I projects, which would be implemented by the year 2010, are outlined in Section 1.1.1 of this EA/EIR. Therefore, for purposes of compliance with NEPA, any FAA-related actions associated with the Master Plan process are focused on the specific projects that would occur as part of Phase I. However, in accordance with CEQA, San Luis Obispo County is required to be concerned with the "whole of the action," which is defined as all projects identified in the Master Plan program. Therefore, for purposes of this EA/EIR, the County's obligation under CEQA is to

include both phases of the Master Plan. Therefore, any County-related actions or approvals associated with the Master Plan process includes all Phase I and Phase II projects (i.e., through the year 2023).

1.1.1 Phase I – 2010 (Proposed Near-Term Projects)

Projects included in Phase I of the SBP Master Plan are identified in Table 1-1. The primary project included in Phase I is the proposed extension of Runway 11 by 800 feet. Most of the other airfield, aviation support facilities, and non-aviation projects identified in Table 1-1 are functionally related to the proposed extension of Runway 11. In addition to airfield improvements, the Master Plan includes new emergency and service access to ensure compliance with the FAA's *Runway Safety Area Program* and Title 14 Code of Federal Regulations (CFR) Part 139. For the FAA's obligation under NEPA, it is only these Phase I project components that are addressed in this EA. For the County's obligation under CEQA, these Phase I project components are only a part of the impacts addressed in this EIR.

TABLE 1-1
PHASE I PROJECT COMPONENTS OF SBP MASTER PLAN (2005-2010)

Airfield Facilities
- Construct Runway 11 EMAS
- Construct Runway 29 EMAS
- Extend Runway 11 by 800 feet for a total of 6,100 feet
- Extend (and connect) parallel Taxiway A by 800 feet
- Construct Taxiway A hold apron plus 300-foot connection (interim until Taxiway A extended)
- Develop perimeter service road around extended end of Runway 11
- Repaint runway markings and install and improve runway lighting systems

Aviation Support Facilities
- Acquire 13.01-acre Filbin property for runway protection purposes
- Grade for runway safety area (RSA) and object free area (OFA) at Runway 11 end
- Import fill to support runway extension, taxiway extensions, RSA, and OFA at Runway 11 end
- Grade the Flower Mound to use for fill material
- Remove and replace Westside Detention Basin
- Construct new swale parallel to the East Fork of San Luis Obispo Creek for floodwater containment
- Construct drainage improvements
- Acquire 13.62-acre CB&I parcel for runway protection purposes
- Acquire 2.33-acre Saes property for extension of Taxiway A and development of perimeter service road
- Demolish portion of surface parking lot on Saes property
- Relocate Saes parking lot
- Acquire 1.0-acre portion of the SLO City Storage property for extension of Taxiway A and development of perimeter service road
- Relocate utilities (12kV line, telephone)

Non-Aviation Projects
- Close Santa Fe Road between Clarion Court and Tank Farm Road on a temporary basis
- Realign Santa Fe Road between Buckley Road and the East Fork of San Luis Obispo Creek
- Relocate driveways that provide local access from Santa Fe Road
- Remove Fiero Lane Water Company settling pond

SOURCE: San Luis Obispo County Regional Airport Master Plan, 2005.

1.1.2 Phase II – 2023 (Proposed Long-Term Projects)

As presented in Table 1-2, Phase II of the SBP Master Plan includes airfield improvements, such as extending parallel Taxiway M by 800 feet and extending Runway 7 by 500 feet for a total of 3,000 feet. Phase II also includes extending the perimeter roadway along Taxiway M, abandoning buildings, grading to accommodate hangar development, and relocating the airport traffic control tower by the FAA. The FAA is not considering any of these Phase II project components as part of their obligation under NEPA. For the County's obligation under CEQA, these Phase II project components, as well as the Phase I project components identified in Section 1.1.1 are being addressed in this EIR.

TABLE 1-2
PHASE II PROJECT COMPONENTS OF SBP MASTER PLAN (2011-2023)

Airfield Facilities
- Relocate navigation aids (glide slope indicator / VASI)
- Extend (and connect) parallel Taxiway M by 800 feet
- Relocate perimeter service road adjacent to Taxiway M
- Extend Runway 7 by 500 feet for a total of 3,000
- Extend Taxiway J by 500 feet
- Extend approach lighting system (ALS) and construct access road to ALS

Aviation Support Facilities
- Grade for relocated glide slope indicator
- Demolish existing CB&I structures
- Demolish improvements on remainder of Saes property
- Grade for Buckley Road site development and for private hangar development
- Construct West Side Hangar Development (phases 1 and 2)
- Conduct siting study for Airport Traffic Control Tower relocation (FAA responsibility)
- Relocate Airport Traffic Control Tower (FAA responsibility)

SOURCE: San Luis Obispo County Regional Airport Master Plan, 2005.

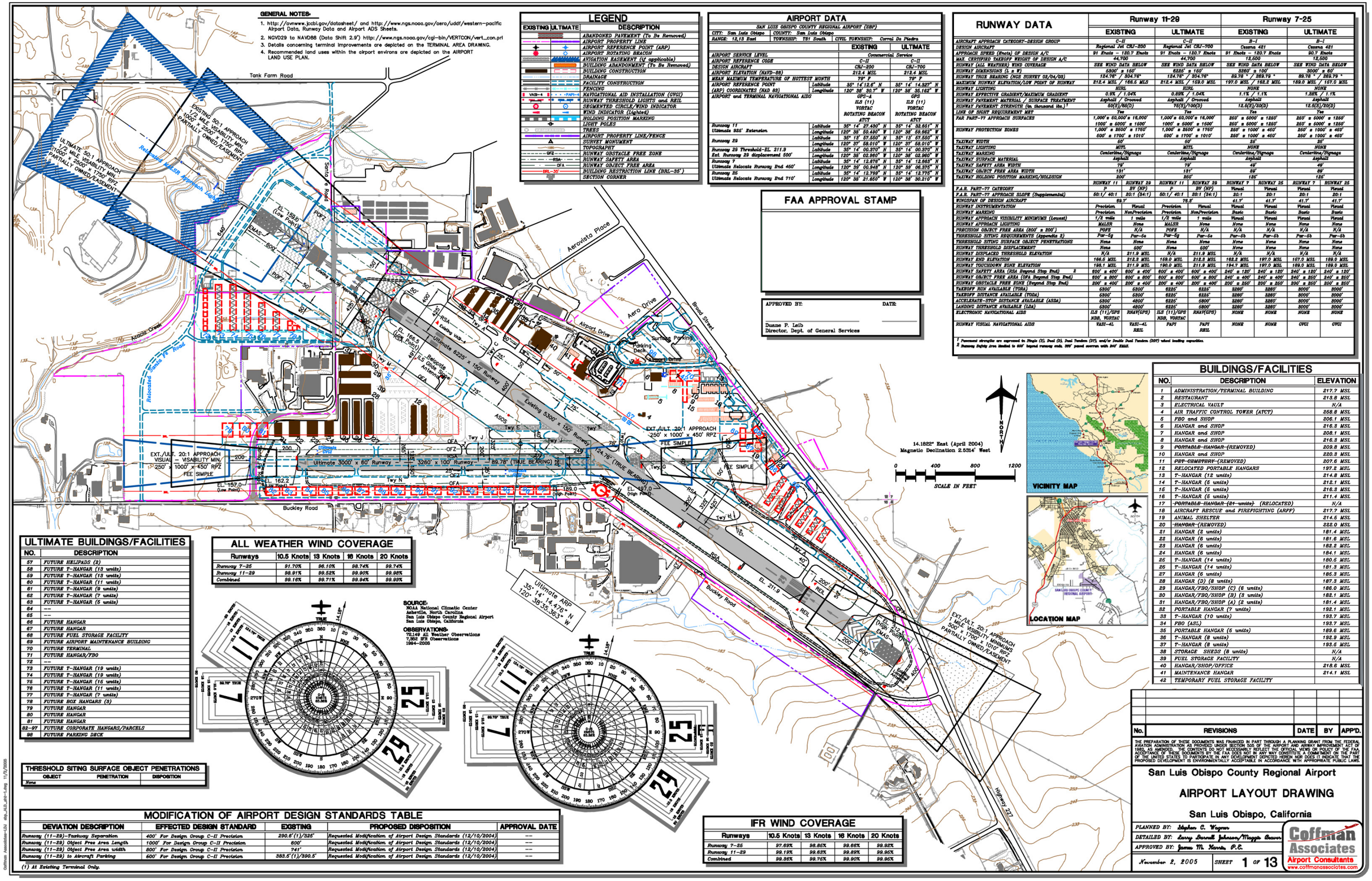
1.2 Requested Federal Action for the Near-Term Airport Master Plan Projects

The federal actions proposed at SBP are the approval of the ALP, the approval of further processing of an application for federal assistance using Airport Improvement Program (AIP) grants or approval to impose and use Passenger Facility Charges (PFCs), and approval of appropriate amendments to the Airport Certification Manual pursuant to 14 CFR Part 139.

The Phase I project components for which federal approval is being requested are those included in Table 1-1.

1.3 County Actions for the Near-Term and Long-Term Airport Master Plan Projects

For compliance with the County of San Luis Obispo's obligations under CEQA, this EA/EIR accomplishes the following: (1) evaluates the environmental consequences of the project components of the Airport Master Plan that would occur for both the first five-year period (i.e., Phase I) as well as the remaining project components included on the Revised ALP (i.e., Phase II, which would occur from 2011 through 2023), (2) identifies the various alternatives to both Phase I and Phase II project components of the Airport Master Plan, and (3) discusses mitigation measures to minimize any potentially adverse environmental effects of both the Phase I and Phase II project components.


GENERAL NOTES:
1. http://avwww.jcbl.gov/datasheet/ and http://www.ngs.noaa.gov/cero/uddf/western-pacific Airport Data, Runway Data and Airport ADS Sheets.
2. NGVD29 to NAVD88 (Data Shift 2.9') http://www.ngs.noaa.gov/cgi-bin/VERTCON/vert_con.prl
3. Details concerning terminal improvements are depicted on the TERMINAL AREA DRAWING.
4. Recommended land uses within the airport environs are depicted on the AIRPORT LAND USE PLAN.
LEGEND
EXISTING ULTIMATE DESCRIPTION
ABANDONED PAVEMENT (To Be Removed)
AIRPORT PROPERTY LINE
AIRPORT REFERENCE POINT (ARP)
AIRPORT ROTATING BEACON
AVIGATION EASEMENT (if applicable)
BUILDING ABANDONMENT (To Be Removed)
BUILDING CONSTRUCTION
DRAINAGE
FACILITY CONSTRUCTION
FENCING
NAVIGATIONAL AID INSTALLATION (GWGI)
RUNWAY THRESHOLD LIGHTS and REIL
SEGMENTED CIRCLE/WIND INDICATOR
WIND INDICATOR (Lighted)
HOLDING POSITION MARKING
LIGHT POLES
TREES
AIRPORT PROPERTY LINE/FENCE
SURVEY MONUMENT
TOPOGRAPHY
RUNWAY OBSTACLE FREE ZONE
RUNWAY SAFETY AREA
RUNWAY OBJECT FREE AREA
BUILDING RESTRICTION LINE (BRL-35')
SECTION CORNER
AIRPORT DATA
SAN LUIS OBISPO COUNTY REGIONAL AIRPORT (SBP)
CITY: San Luis Obispo COUNTY: San Luis Obispo
RANGE: 12,13 East TOWNSHIP: 31 South CIVIL TOWNSHIP: Corral De Piedra
EXISTING ULTIMATE
AIRPORT SERVICE LEVEL Commercial Service
AIRPORT REFERENCE CODE C-II C-II
DESIGN AIRCRAFT CRJ-200 CRJ-700
AIRPORT ELEVATION (NAVD-88) 212.4 MSL 212.4 MSL
MEAN MAXIMUM TEMPERATURE OF HOTTEST MONTH 79° F 79° F
AIRPORT REFERENCE POINT (ARP) COORDINATES (NAD 83) Latitude 35° 14' 12.6" N 35° 14' 14.327" N
Longitude 120° 38' 30.7" W 120° 38' 35.162" W
AIRPORT and TERMINAL NAVIGATIONAL AIDS GPS-A ILS (11) VORTAC ROTATING BEACON ATCT GPS ILS (11) VORTAC ROTATING BEACON ATCT
Runway 11 Latitude 35° 14' 27.430" N 35° 14' 32.851" N
Ultimate RSA* Extension Longitude 120° 39' 00.480" W 120° 38' 59.982" W
Runway 29 Latitude 35° 13' 57.550" N 35° 13' 57.550" N
Longitude 120° 37' 58.010" W 120° 37' 58.010" W
Runway 29 Threshold-EL 211.9 Latitude 35° 14' 00.370" N 35° 14' 00.370" N
Ext. Runway 29 displacement 500' Longitude 120° 38' 02.960" W 120° 38' 02.960" W
Runway 7 Latitude 35° 14' 12.676" N 35° 14' 12.965" N
Ultimate Relocate Runway End 460' Longitude 120° 39' 00.948" W 120° 39' 06.376" W
Runway 25 Latitude 35° 14' 12.799" N 35° 14' 12.799" N
Ultimate Relocate Runway End 710' Longitude 120° 38' 31.650" W 120° 38' 30.210" W
FAA APPROVAL STAMP
APPROVED BY: DATE:
Duane P. Leib
Director, Dept. of General Services
RUNWAY DATA
Runway 11-29 Runway 7-25
EXISTING ULTIMATE EXISTING ULTIMATE
AIRCRAFT APPROACH CATEGORY-DESIGN GROUP C-II C-II B-I B-I
DESIGN AIRCRAFT Regional Jet CRJ-200 Regional Jet CRJ-700 Cessna 421 Cessna 421
APPROACH SPEED (Knots) OF DESIGN A/C 91 Knots - 120.7 Knots 91 Knots - 120.7 Knots 91 Knots - 120.7 Knots 90.7 Knots
MAX. CERTIFIED TAKEOFF WEIGHT OF DESIGN A/C 44,700 44,700 12,500 12,500
RUNWAY (ALL WEATHER) WIND COVERAGE SEE WIND DATA BELOW SEE WIND DATA BELOW SEE WIND DATA BELOW SEE WIND DATA BELOW
RUNWAY DIMENSIONS (L x W) 5300' x 150' 6225' x 150' 3260' x 100' 3000' x 60'
TRUE BEARING (NGS SURVEY 03/04/03) 134.76° / 304.76° 134.76° / 304.76° 89.78 ° / 269.79 ° 89.78 ° / 269.79 °
MAXIMUM RUNWAY ELEVATION/LOW POINT OF RUNWAY 212.4 MSL / 168.6 MLS 212.4 MSL / 169.0 MSL 197.0 MSL / 162.2 MSL 189.0 MSL / 157.0 MSL
RUNWAY LIGHTING HIRL HIRL NONE NONE
RUNWAY EFFECTIVE GRADIENT/MAXIMUM GRADIENT 0.9% / 1.04% 0.89% / 1.04% 1.1% / 1.1% 1.82% / 1.1%
RUNWAY PAVEMENT MATERIAL / SURFACE TREATMENT Asphalt / Grooved Asphalt / Grooved Asphalt Asphalt
RUNWAY PAVEMENT STRENGTH (in thousand lbs.) 56(S)/86(D) 75(S)/100(D) 12.5(S)/20(D) 12.5(S)/25(D)
LINE OF SIGHT REQUIREMENT MET Yes Yes Yes Yes
FAR PART-77 APPROACH SURFACES 1,000' x 60,000' x 16,000' / 1000' x 50000' x 1760' / 500' x 1700' x 1010' 1,000' x 60,000' x 16,000' / 1000' x 50000' x 1760' / 500' x 1700' x 1010' 250' x 5000' x 1250' / 250' x 1000' x 450' 250' x 5000' x 1250' / 250' x 1000' x 450'
RUNWAY PROTECTION ZONES 1,000' x 650' / 1,700' x 1,010' 1,000' x 650' / 1,700' x 1,010' 250' x 1000' x 450' 250' x 1000' x 450'
TAXIWAY WIDTH 60' 50' 25' 25'
TAXIWAY LIGHTING MITL NONE NONE NONE
TAXIWAY MARKING Centerline/Signage Centerline/Signage Centerline/Signage Centerline/Signage
TAXIWAY SURFACE MATERIAL Asphalt Asphalt Asphalt Asphalt
TAXIWAY SAFETY AREA WIDTH 79' 79' 49' 49'
TAXIWAY OBJECT FREE AREA WIDTH 131' 131' 89' 89'
TAXIWAY HOLDING POSITION MARKING/HOLDSIGN 200' 200' 125' 125'
RUNWAY 11 RUNWAY 29 RUNWAY 11 RUNWAY 29 RUNWAY 7 RUNWAY 25 RUNWAY 7 RUNWAY 25
F.A.R. PART-77 CATEGORY P PV (NP) PV (NP) Visual Visual Visual Visual
F.A.R. PART-77 APPROACH SLOPE (Supplemental) 50:1 / 40:1 20:1 (34:1) 50:1 / 40:1 20:1 (34:1) 20:1 20:1 20:1 20:1
WINGSPAN OF DESIGN AIRCRAFT 69.7' 78.8' 41.7' 41.7' 41.7' 41.7'
RUNWAY INSTRUMENTATION Precision Visual Precision Visual Visual Visual Visual Visual
RUNWAY MARKING Precision Non-Precision Precision Non-Precision Basic Basic Basic Basic
RUNWAY APPROACH VISIBILITY MINIMUMS (Lowest) 1/2 mile 1 mile 1/2 mile 1 mile Visual Visual Visual Visual
RUNWAY APPROACH LIGHTING MALSR None MALSR None None None None None
PRECISION OBJECT FREE AREA (800' x 800') PAPI N/A PAPI N/A N/A N/A N/A N/A
THRESHOLD SITING REQUIREMENTS (Appendix 2) Par-5g Par-5e Par-5g Par-5e Par-5b Par-5b Par-5b Par-5b
THRESHOLD SITING SURFACE OBJECT PENETRATIONS None None None None None None None None
RUNWAY THRESHOLD DISPLACEMENT None 500' None 600' None None None None
RUNWAY DISPLACED THRESHOLD ELEVATION N/A 211.9 MSL N/A 211.9 MSL N/A N/A N/A N/A
RUNWAY END ELEVATION 166.6 MSL 212.3 MSL 159.0 MSL 212.3 MSL 162.2 MSL 197.0 MSL 157.0 MSL 189.0 MSL
RUNWAY TOUCHDOWN ZONE ELEVATION 198.1 MSL 211.9 MSL 190.0 MSL 211.9 MSL 194.7 MSL 197.0 MSL 169.0 MSL 189.0 MSL
RUNWAY SAFETY AREA (RSA Beyond Stop End) 2 600' x 400' 600' x 400' 600' x 400' 600' x 400' 240' x 120' 240' x 120' 240' x 120' 240' x 120'
RUNWAY OBJECT FREE AREA (OFA Beyond Stop End) 600' x 800' 600' x 800' 600' x 800' 600' x 800' 240' x 400' 240' x 400' 240' x 250' 240' x 250'
RUNWAY OBSTACLE FREE ZONE (Beyond Stop End) 200' x 400' 200' x 400' 200' x 400' 200' x 400' 200' x 250' 200' x 250' 200' x 250' 200' x 250'
TAKEOFF RUN AVAILABLE (TORA) 5300' 5300' 6225' 6225' 3260' 3260' 3000' 3000'
TAKEOFF DISTANCE AVAILABLE (TODA) 5300' 5300' 6225' 6225' 3260' 3260' 3000' 3000'
ACCELERATE-STOP DISTANCE AVAILABLE (ASDA) 5300' 4800' 6225' 5800' 3260' 3260' 3000' 3000'
LANDING DISTANCE AVAILABLE (LDA) 5300' 4800' 6225' 5800' 3260' 3260' 3000' 3000'
ELECTRONIC NAVIGATIONAL AIDS ILS (11)/GPS NDB, VORTAC RNAV(GPS) ILS (11)/GPS NDB, VORTAC RNAV(GPS) NONE NONE NONE NONE
RUNWAY VISUAL NAVIGATIONAL AIDS VASI-4L REIL VASI-4L REIL PAPI PAPI REIL NONE NONE GWGI GWGI
1 Pavement strengths are expressed in Single (S), Dual (D), Dual Tandem (2T), and/or Double Dual Tandem (2D7) wheel loading capacities.
2 Runway Safety Area limited to 600' beyond runway end, 200' paved overrun with 240' RSAA.
BUILDINGS/FACILITIES
NO. DESCRIPTION ELEVATION
1 ADMINISTRATION/TERMINAL BUILDING 217.7 MSL
2 RESTAURANT 213.6 MSL
3 ELECTRICAL VAULT N/A
4 AIR TRAFFIC CONTROL TOWER (ATCT) 268.8 MSL
5 FBO and SHOP 206.1 MSL
6 HANGAR and SHOP 216.3 MSL
7 HANGAR and SHOP 208.1 MSL
8 HANGAR and SHOP 216.3 MSL
9 ~~PORTABLE HANGAR (REMOVED)~~ 209.8 MSL
10 HANGAR and SHOP 220.3 MSL
11 ~~FBO CHAPPERY (REMOVED)~~ 207.6 MSL
12 RELOCATED PORTABLE HANGARS 197.8 MSL
13 T-HANGAR (12 units) 214.8 MSL
14 T-HANGAR (5 units) 212.1 MSL
15 T-HANGAR (5 units) 216.3 MSL
16 T-HANGAR (5 units) 211.4 MSL
17 ~~PORTABLE HANGAR (21 units)~~ (RELOCATED) N/A
18 AIRCRAFT RESCUE and FIREFIGHTING (ARFF) 217.7 MSL
19 ANIMAL SHELTER 214.6 MSL
20 ~~HANGAR (REMOVED)~~ 222.0 MSL
21 HANGAR (3 units) 181.4 MSL
22 HANGAR (6 units) 181.6 MSL
23 HANGAR (6 units) 182.2 MSL
24 HANGAR (6 units) 184.1 MSL
25 T-HANGAR (14 units) 180.6 MSL
26 T-HANGAR (14 units) 181.3 MSL
27 HANGAR (6 units) 186.3 MSL
28 HANGAR (D) (8 units) 187.3 MSL
29 HANGAR/FBO/SHOP (C) (6 units) 186.0 MSL
30 HANGAR/FBO/SHOP (B) (3 units) 182.1 MSL
31 HANGAR/FBO/SHOP (A) (2 units) 181.4 MSL
32 PORTABLE HANGAR (7 units) 192.1 MSL
33 T-HANGAR (10 units) 193.7 MSL
34 FBO (ASL) 193.7 MSL
35 PORTABLE HANGAR (5 units) 189.6 MSL
36 T-HANGAR (8 units) 192.9 MSL
37 T-HANGAR (8 units) 193.6 MSL
38 STORAGE SHEDS (8 units) N/A
39 FUEL STORAGE FACILITY N/A
40 HANGAR/SHOP/OFFICE 218.6 MSL
41 MAINTENANCE HANGAR 214.1 MSL
42 TEMPORARY FUEL STORAGE FACILITY
ULTIMATE BUILDINGS/FACILITIES
NO. DESCRIPTION
57 FUTURE HELIPADS (2)
58 FUTURE T-HANGAR (13 units)
59 FUTURE T-HANGAR (13 units)
60 FUTURE T-HANGAR (11 units)
61 FUTURE T-HANGAR (9 units)
62 FUTURE T-HANGAR (7 units)
63 FUTURE T-HANGAR (5 units)
64 ---
65 ---
66 FUTURE HANGAR
67 FUTURE HANGAR
68 FUTURE FUEL STORAGE FACILITY
69 FUTURE AIRPORT MAINTENANCE BUILDING
70 FUTURE TERMINAL
71 FUTURE HANGAR/FBO
72 ---
73 FUTURE T-HANGAR (19 units)
74 FUTURE T-HANGAR (19 units)
75 FUTURE T-HANGAR (10 units)
76 FUTURE T-HANGAR (11 units)
77 FUTURE T-HANGAR (7 units)
78 FUTURE BOX HANGARS (3)
79 FUTURE HANGAR
80 FUTURE HANGAR
81 FUTURE HANGAR
82-97 FUTURE CORPORATE HANGARS/PARCELS
98 FUTURE PARKING DECK
ALL WEATHER WIND COVERAGE
Runways 10.5 Knots 13 Knots 16 Knots 20 Knots
Runway 7-25 91.70% 96.10% 98.74% 99.74%
Runway 11-29 98.91% 99.52% 99.90% 99.98%
Combined 99.16% 99.71% 99.94% 99.99%
SOURCE:
NOAA National Climatic Center
Asheville, North Carolina
San Luis Obispo County Regional Airport
San Luis Obispo, California
OBSERVATIONS-
72,149 All Weather Observations
7,352 IFR Observations
1994-2003
IFR WIND COVERAGE
Runways 10.5 Knots 13 Knots 16 Knots 20 Knots
Runway 7-25 97.69% 98.85% 99.66% 99.92%
Runway 11-29 99.19% 99.63% 99.89% 99.96%
Combined 99.36% 99.76% 99.90% 99.96%
THRESHOLD SITING SURFACE OBJECT PENETRATIONS
OBJECT PENETRATION DISPOSITION
None
MODIFICATION OF AIRPORT DESIGN STANDARDS TABLE
DEVIATION DESCRIPTION EFFECTED DESIGN STANDARD EXISTING PROPOSED DISPOSITION APPROVAL DATE
Runway (11-29)-Taxiway Separation 400' For Design Group C-II Precision 290.6'(1)/325' Requested Modification of Airport Design Standards (12/10/2004) ---
Runway (11-29) Object Free Area Length 1000' For Design Group C-II Precision 600' Requested Modification of Airport Design Standards (12/10/2004) ---
Runway (11-29) Object Free Area width 800' For Design Group C-II Precision 741' Requested Modification of Airport Design Standards (12/10/2004) ---
Runway (11-29) to Aircraft Parking 600' For Design Group C-II Precision 383.5'(1)/390.5' Requested Modification of Airport Design Standards (12/10/2004) ---
(1) At Existing Terminal Only.
No. REVISIONS DATE BY APP'D.
THE PREPARATION OF THESE DOCUMENTS WAS FINANCED IN PART THROUGH A PLANNING GRANT FROM THE FEDERAL AVIATION ADMINISTRATION AS PROVIDED UNDER SECTION 505 OF THE AIRPORT AND AIRWAY IMPROVEMENT ACT OF 1982, AS AMENDED. THE CONTENTS DO NOT NECCESSARILY REFLECT THE OFFICIAL VIEWS OR POLICY OF THE F.A.A. AND DO NOT CONSTITUTE A STANDARD, SPECIFICATION OR REGULATION. IN ANY EVENT, NOTHING CONTAINED HEREIN SHALL BE CONSTRUED AS BINDING ON THE F.A.A. OR THE UNITED STATES. IT IS THE RESPONSIBILITY OF THE SPONSOR TO ENSURE THAT THE PROPOSED DEVELOPMENT IS ENVIRONMENTALLY ACCEPTABLE IN ACCORDANCE WITH APPROPRIATE PUBLIC LAWS.
San Luis Obispo County Regional Airport
AIRPORT LAYOUT DRAWING
San Luis Obispo, California
PLANNED BY: Stephen C. Wagner
DETAILED BY: Larry Burnell Johnson/Maggie Beaver
APPROVED BY: James M. Harris, P.E.
November 2, 2005 SHEET 1 OF 13
Coffman Associates
Airport Consultants
www.coffmanassociates.com
14.1822° East (April 2004)
Magnetic Declination 2.5314' West
0 400 800 1200
SCALE IN FEET
NORTH
VICINITY MAP
LOCATION MAP
Tank Farm Road
Santa Fe Road
Aerovista Place
Aero Drive
Airport Drive
Broad Street
Buckley Road
Highway 227
Acacia Creek
Relocated Santa Fe Road
Ultimate 6225' x 150' Runway
Existing 5300' x 150' Runway
Ultimate 3000' x 60' Runway
3260' x 100' Runway
89.78° (TRUE BEARING)
134.76° (TRUE BEARING)
EXISTING MALSR
EXISTING 50:1 APPROACH - 1,000' MIN. VISIBILITY MIN. - 1000' x 2500' x 1750' RPZ - PARTIALLY OWNED/EASEMENT
ULTIMATE 50:1 APPROACH - 1,000' MIN. VISIBILITY MIN. - 1000' x 2500' x 1750' RPZ - PARTIALLY OWNED/EASEMENT
EXT./ULT. 20:1 APPROACH - VISUAL - VISABILITY MIN. - 250' x 1000' x 450' RPZ - FEE SIMPLE
EXT./ULT. 20:1 APPROACH - 250' x 1000' x 450' RPZ - FEE SIMPLE
EXT./ULT. 20:1 APPROACH - 1 MILE VISIBILITY MINIMUMS - 500' x 1700' x 1010' RPZ - PARTIALLY OWNED/EASEMENT
Ultimate ARP 35° 14' 14.476" N 120° 38' 35.363" W
EL. 189.6 (Low Point)
EL. 162.2 (Low Point)
EL. 157.0 (Low Point)
EL. 189.0 (High Point)
EL. 197.0 (High Point)
EL. 211.9
EL. 212.4 (High Point)
Surface Parking
Parking Deck
Tower Drive
Existing MALSR Approach Lights
Relocate ALS Radio Antenna
Relocate Rotating Beacon
Twy A
Twy B
Twy C
Twy E
Twy F
Twy G
Twy H
Twy J
Twy M
Twy N
RSA
OFA
OFZ
BRL
REIL
PAPI
ASOS
FEE SIMPLE
EASEMENT
Ultimate RSA* Extension
Ultimate Relocate Runway End 460'
Ultimate Relocate Runway End 710'
Runway 11
Runway 29
Runway 7
Runway 25
TRUE
MAGNETIC
SOURCE: Coffman Associates, 2005
San Luis Obispo County Regional Airport Master Plan Update EA-EIR . 203092
Figure 1-1
Airport Layout Plan
5

This page left intentionally blank

CHAPTER 2
Purpose and Need for the Proposed Action

2.1 Existing Facility

2.1.1 Project Location

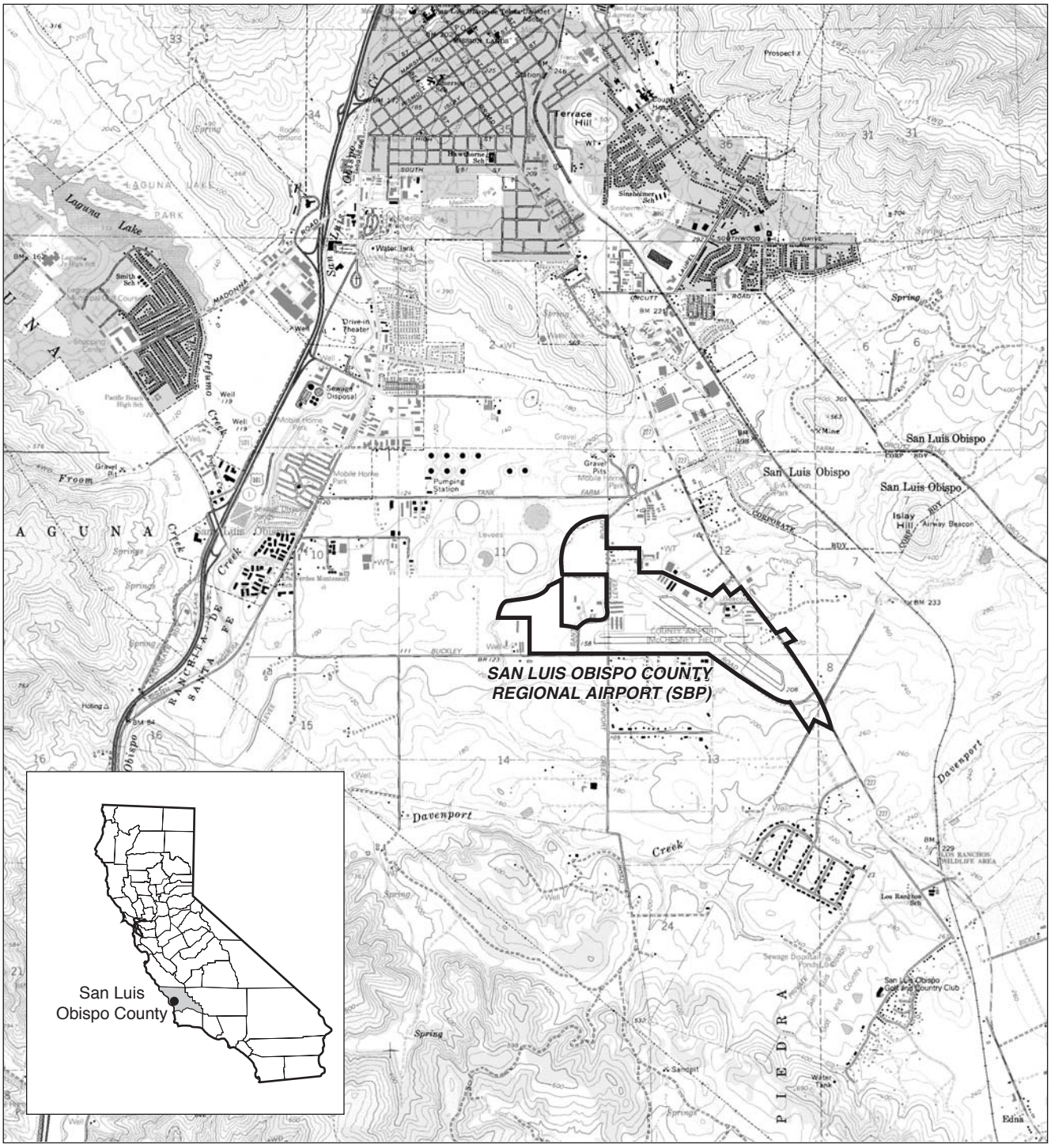
SBP is located approximately three miles south of downtown San Luis Obispo in unincorporated San Luis Obispo County (see Figure 2-1). The Airport comprises approximately 340 acres of land, 290 acres of which are developed. Developed areas include an airfield with two runways (11/29 and 7/25), a passenger terminal and parking facility, general aviation hangars, and associated support facilities. Primary access to the Airport is via State Route 227 (SR 227). The Airport is generally bounded by SR 227 on the east, Buckley Road on the west and south, and Santa Fe Road and light industrial development south of Tank Farm Road between Santa Fe Road and SR 227 on the north.

2.1.2 Existing Airport Facilities

The existing facility inventory at SBP is shown in Figure 2-2 and includes both on-the-ground improvements as well as facilities that have already been subject to applicable NEPA and CEQA review. Airport facilities can be classified into two broad categories: airside and landside. The airside category includes those facilities directly associated with aircraft operations. The landside category includes the terminal and parking facility as well as support facilities necessary for the safe operation of the Airport.

Airside facilities include runways, taxiways, and airport lighting. SBP includes two runways: Runway 11/29, which is the primary runway and is oriented in a northwest-southeast direction; and Runway 7/25, which is oriented in a northeast-southwest direction (see Table 2-1). Runway 11/29 is 5,300 feet long and 150 feet wide and can support aircraft weighing up to 65,000 pounds in a dual wheel configuration. Runway 7/25 is 2,500 feet long and 100 feet wide and is limited to aircraft weighing up to 12,500 pounds in a dual wheel configuration.

The ten existing taxiways at SBP are shown in Figure 2-2. Taxiway A is parallel to Runway 11/29. Taxiways C, E, F, H, and I connect Runway 11/29 and Taxiway A. Taxiway G connects the eastside hangar area with Taxiway A. Taxiway J is parallel to Runway 7/25. Taxiway K connects Runway 7/25 and Taxiway J. Taxiway M is parallel to Runway 11/29 north of Taxiway E.



SOURCE: ESA Airports, 2005

San Luis Obispo County Regional Airport Master Plan Update EA-EIR . 203092

Figure 2-1
Regional Location Map

Ⓐ Taxiways

SOURCE: San Luis Obispo County Regional Airport Master Plan, 2005

Figure 2-2
Existing Facilities at SBP

TABLE 2-1
RUNWAY DATA FOR SBP

	Runway 11/29		Runway 7/25	
Runway Data	**Existing**	**Ultimate**	**Existing**	**Ultimate**
Aircraft Approach Category-Design Group	C-II	C-II	B-I	B-I
Design Aircraft	Regional Jet CRJ-200	Regional Jet CRJ-700	Cessna 421	Cessna 421
Runway Bearing	S 55.7745° E	S 55.7745° E	N 89.7747° E	N 89.7747° E
Runway Dimensions	5,300' x 150'	6,100' x 150'	2,500' x 100'	3,000' x 60'
Runway Instrumentation	**11** – Precision, **29** - Visual	**11** – Precision, **29** - Visual	**7/25** – Visual	**7/25** – Visual
Runway Approach Surfaces	**11** – 50:1/40:1 **29** – 20:1/34:1	**11** – 50:1/40:1 **29** – 20:1/34:1	**7/25** – 20:1/20:1	**7/25** – 20:1/20:1
Runway Safety Area (RSA)	6,500' x 400'	7,300' x 400'	2,980' x 120'	3,480' x 120'
Runway Obstacle Free Zone (OFZ)	5,700' x 400'	6,500' x 400'	2,900' x 250'	3,400' x 250'
Runway Object Free Area (OFA)	6,500' x 800'	7,300' x 800'	2,980' x 250'	3,480' x 250'
Pavement Material	Asphalt	Asphalt	Asphalt	Asphalt
Pavement Surface Treatment	Grooved	Grooved	N/A	N/A
Pavement Strength (in thousand lbs)	50(S)/65(D)	75(S)/100(D)	12.5(S)/20(D)	12.5(S)/20(D)
Runway Effective Gradient / Maximum Gradient	0.9% / 1.04%	0.89% / 1.04%	1.1% / 1.1%	1.28% / 1.1%
Maximum Runway Elevation / Low Point of Runway	212.4 MSL 166.5 MSL	212.4 MSL 159.0 MSL	197.0 MSL 162.2 MSL	189.0 MSL 157.0 MSL
Runway Marking	**11** – Precision **29** – NonPrecis.	**11** – Precision **29** – NonPrecis.	**7/25** – Basic	**7/25** – Basic
Runway Lighting	HIRL	HIRL	NONE	NONE
Runway Approach Lighting	**11** – MALSR, **29** – None	**11** – MALSR, **29** – None	**7/25** – NONE	**7/25** – NONE
Taxiway Lighting	MITL	MITL	NONE	NONE
Taxiway Marking	Centerline, Signage	Centerline, Signage	Centerline, Signage	Centerline, Signage
Runway Electronic Navigational Aids	**11** – ILS/GPS, NOB, VORTAC **29** – RNAV (GPS)	**11** – ILS/GPS, NOB, VORTAC **29** – RNAV (GPS)	**7/25** – NONE	**7/25** – NONE
Runway Visual Navigational Aids	**11** – VASI-4L **29** – VASI-4L REIL	**11** – PAPI **29** – PAPI, REIL	**7/25** – NONE	**7/25 – GVGI**

SOURCE: San Luis Obispo County Regional Airport Master Plan, 2005.

Airport lighting at SBP includes identification lighting, runway and taxiway lighting, and approach lighting. Runway 11 is equipped with a runway approach lighting system that provides visual guidance to the runway end under poor visibility conditions. This system (known as a Medium-Intensity Approach Lighting System with Runway Alignment Indicator Lights, or MALSR) consists of a configuration of signal lights to aid in the transition from instrument flight to visual flight and landing. Runways 11 and 29 are equipped with a visual approach slope guidance aid called the Visual Approach Slope Indicator (VASI). Runway 29 is also equipped with runway end identifier lights (REILs), which are flashing lights that identify the runway end.

Current landside building facilities (see Figure 2-2) consist of a passenger terminal, surface parking lots, an airport traffic control tower, a restaurant, general aviation facilities (hangars, fixed base operators), and an aircraft rescue and firefighting facility (ARFF). Future landside development that has been approved and will be constructed by 2010 to include a new passenger terminal, a parking structure, new general aviation hangars, and a new fixed base operator (FBO) facility.

2.1.3 Existing Aviation Activity Summary

Historical passenger enplanements at SBP and annual change are shown in Table 2-2. As shown in the table, SBP has experienced an average annual growth rate of 5.5% from 50,010 enplanements in 1985 to 163,203 enplanements in 2004. Despite a decline in enplanements in 2001, the Airport recovered quickly and enplanements increased by nearly 7% between 2001 and 2004. During the past two decades, however, the number of passenger aircraft operations has decreased due to the use of larger aircraft and higher passenger loads per aircraft. To illustrate, the number of passengers per departure has increased from 5.89 passengers in 1987 and 15.12 passengers in 1997 to 21 passengers per departure in 2002/2003. Cargo (including domestic cargo, international cargo, and mail) has also grown steadily. In 1997 about 1.1 million pounds of total cargo passed through the Airport, increasing to 2.9 million pounds by 2004.

While passenger enplanements and freight operations have grown in recent years, general aviation operations have fluctuated considerably (as they have nationwide). General aviation operations at the Airport since September 11, however, have increased approximately 7% between 2001 and 2004 and this is comparable to the increase in enplanements at SBP during the same time period (see Table 2-3). Military operations have declined in the past few years. These factors, along with the effects of September 11 and the increased load factor for commercial aircraft, mean that operations growth lags behind the increased passenger and cargo activity. Additional discussion of these trends is included in the aviation forecasts presented in Appendix A.

TABLE 2-2
HISTORICAL PASSENGER ENPLANEMENTS AT SBP

Year	Total Enplanements	Annual Percent Change
1985	50,010	-16.5
1986	59,541	+19.1
1987	76,833	+29.0
1988	78,305	+1.9
1989	85,933	+9.7
1990	93,558	+8.9
1991	97,956	+4.7
1992	107,851	+10.1
1993	109,334	+1.4
1994	120,949	+10.6
1995	132,337	+9.4
1996	137,651	+4.0
1997	154,932	+12.6
1998	149,507	-3.5
1999	152,309	+1.9
2000	158,602	+4.1
2001	152,649	-3.8
2002	155,177	+1.7
2003	149,354	-3.7
2004	163,203	+9.3

N/A = Not applicable
SOURCE: Airport Records (directly and from San Luis Obispo County Regional Airport Master Plan, 2005).

TABLE 2-3
AIRCRAFT OPERATIONS AT SBP

	1998	1999	2000	2001	2002	2003	2004
Air Transport[a]	16,701	14,750	16,250	16,700	16,300	16,234	16,872
General Aviation – Itinerant	47,687	51,845	55,173	50,629	56,991	52,847	52,862
General Aviation – Local	38,281	45,829	42,602	40,328	35,164	49,617	44,390
Military	1,111	950	958	948	769	915	942
TOTAL	103,780	113,374	114,983	108,605	109,224	119,613	115,066

[a] Includes regional/commuter airlines, air cargo airlines, and air taxi (for hire/charters).

SOURCE: Airport Records and FAA TAF (directly and from San Luis Obispo County Regional Airport Master Plan, 2005).

2.2 Purpose of the Proposed Action

SBP operates under a Class I Part 139 Certificate from the FAA. The purpose of the Phase I project components at SBP is for the FAA to assist the County in:

- accommodating existing and forecast demand for air passenger, air cargo, and general aviation services;
- developing a runway that meets FAA Airport Design Standards, including runway safety areas; and
- providing emergency access and service access for airside and landside facilities along the Runway 11 end, without direct conflicts with runway and taxiway activities.

Until the events of September 11, 2001, the Airport had experienced several decades of relatively steady growth in passenger and air cargo activity levels. This growth reflected the strength of the economy in general and the expansion in business, industry, and tourism in San Luis Obispo County. And, despite the effects of September 11, 2001, enplanements at SBP are again increasing. As documented in the Master Plan, regional jets will continue to be the fastest growing segment of the aviation industry over the next several years. Without the proposed Phase I project component improvements, the runway and related airfield constraints would increase the level of delays and inefficiencies currently experienced by air travelers and cause inefficiencies for those businesses operating at SBP, especially resulting from load penalties taken during times of higher temperatures.

2.3 Need for the Proposed Action

SBP is an integral part of the economic viability of San Luis Obispo County. It is a gateway for air passengers traveling on business or pleasure and for goods being transported to and from the region. Over the years, the Airport has expanded to keep pace with growth. Due to the increasing use of regional jets by the regional/commuter airlines serving SBP, these improvements are necessary to meet the air transportation needs of residents and the business community. The Phase I project components are needed to provide sufficient runway length to accommodate the departure of fully-loaded aircraft (e.g., regional jets) during warm temperatures without imposing constraints such as load penalties, reduce the potential for direct conflicts between runway and taxiway activities and emergency and service vehicles, and fully comply with runway protection measures for Runway 11/29, including Object Free Area (OFA), for the category C-II design group with a CRJ-700 as the selected design aircraft. The specific needs associated with the Proposed Action are provided below.

2.3.1 Provide Sufficient Runway Length

The existing primary runway at SBP does not provide the runway length requirements to allow regional jets to operate with a fully-loaded aircraft. Table 2-4 presents the runway length

requirements for regional jets operating at SBP on Runway 11/29. As shown in Table 2-4, the existing 5,300-foot runway does not enable regional jets to take off fully loaded. The Airport has a need to extend Runway 11/29 by up to 2,700 feet to accommodate the ERJ 145 on flights to Los Angeles. Given the current physical constraints in the SBP vicinity (e.g., the location of State Route 227, the location of the Chevron Tank Farm property, the location of East Fork of San Luis Obispo Creek), the maximum runway length that can be accommodated is 6,100 feet. Although this runway length will not fully accommodate the runway length requirements for regional jets operating at SBP at a temperature of 80 degrees Fahrenheit (the mean annual high temperature at SBP is 71.3 degrees Fahrenheit), it will increase the load factor limitation and result in greater accommodation of regional jet aircraft at SBP.

TABLE 2-4
REGIONAL JET PERFORMANCE AT SBP

	CRJ 200 (to Phoenix)	CRJ 200 (to Denver)	ERJ 145 (to Los Angeles)
Runway 11 (uphill gradient)			
Takeoff distance required for maximum load factor at 80F	6,200 feet	7,570 feet	8,050 feet
Landing distance required for maximum load factor	5,570 feet	5,550 feet	5,320 feet
Load factor limitation with 5,800 feet for takeoff run	88.4%	67.7%	70.5%
Load factor limitation with 6,000 feet for takeoff run	95.0%	74.5%	73.1%
Runway 29 (downhill gradient)			
Takeoff distance required for maximum load factor at 80F	5,630 feet	6,330 feet	6,100 feet
Landing distance required for maximum load factor	5,570 feet	5,550 feet	5,320 feet
Load factor limitation with 5,800 feet for takeoff run	100.0%	85.7%	89.2%
Load factor limitation with 6,000 feet for takeoff run	100.0%	93.2%	93.2%

SOURCE: San Luis Obispo County Regional Airport Master Plan, 2005.

2.3.2 Reduce Potential for Direct Conflicts on Airfield

The existing airfield on the northern portion of SBP does not include any service road for use by maintenance vehicles or emergency response vehicles. Currently, those maintenance and emergency response vehicles must use the taxiways and runway to gain access to the area of the Airport near the Runway 11 end. The development of a perimeter service road around the Runway 11 end will enable maintenance and emergency response vehicles to access this portion of the Airport without using active runways or taxiways. Pursuant to Title 14 CFR Part 139, emergency access roads are required to be available and maintained. The perimeter access road will provide for the required overall safety of the Airport by reducing the potential for conflicts between runway and taxiway activities and emergency and service vehicles.

2.3.3 Fully Comply with Runway Safety Standards

The previous Airport Reference Code for SBP reflects a B-II design standard. The introduction of regularly scheduled regional jets, as well as the continued regular use by private jet aircraft in the C-II category, necessitates reconsideration of the design standard to C-II. The existing Runway Safety Area (RSA) at each end of Runway 11/29 is 600 feet in length and meets the B-II design standard. The RSA standard for a C-II facility is 1,000 feet in length. Because of the physical constraints in the vicinity of SBP (e.g., the location of State Route 227, the rising terrain to the south of SBP, the location of the Chevron Tank Farm property, the location of East Fork of San Luis Obispo Creek), it is not possible to provide a 1,000-foot RSA at each end of Runway 11/29. On March 15, 2004, the FAA issued Order 5200.9, *Financial Feasibility and Equivalency of Runway Safety Area Improvements and Engineered Material Arresting Systems*, which provides guidance for comparing RSA improvement alternatives with improvements that use Engineered Material Arresting Systems (EMAS). EMAS is designed to stop an aircraft overrun by exerting predictable deceleration forces on the landing gear as the EMAS material collapses. The use of EMAS at both runway ends will enable SBP to meet the RSA standards for a C-II facility without the need to acquire additional land.

For details regarding the aviation forecasts, the airside facility requirements, the landside facility requirements, and the rationale for inclusion of non-aviation projects, see Appendix A.

2.4 County of San Luis Obispo Objectives

For compliance with Section 15124(b) of the *CEQA Guidelines*, the County is required to identify its objectives associated with the Master Plan. As a facility that is owned and operated by the County, the County has established five principal objectives for the Master Plan for future facilities at SBP:

- to continue to provide aviation services at San Luis Obispo County Regional Airport that meet the present and future air transportation needs of local residents and the business community;
- to support and contribute to the economic well-being of San Luis Obispo County by facilitating tourism, business travel, and air cargo movement;
- to develop a land use and facility plan that designates the most efficient and productive aviation-related use of all Airport property in conformance with all applicable FAA standards;
- to identify a phased program or specific airfield and landside facility improvements to accommodate, to the extent reasonable and feasible, current and future demand for commercial services; and
- to balance future development of the Airport with the protection of the environment.

This EA/EIR evaluates the environmental consequences of the Master Plan as shown on the Airport Layout Plan, identifies the various alternatives considered for the program's development, and discusses mitigation measures to minimize any potentially adverse environmental impacts.

This page intentionally left blank.

CHAPTER 3
Alternatives

Section 1502.14 of the President's Council on Environmental Quality Regulations (40 CFR Part 1500-1508) requires that the lead agency evaluate reasonable alternatives in the Environmental Assessment (EA) analysis. In addition, Section 15126(d) of the CEQA *Guidelines* requires that an Environmental Impact Report (EIR) "describe a range of reasonable alternatives to the project, or to the location of the project, which could feasibly attain the basic objectives of the project, and evaluate the comparative merits of the alternatives". The intent of the alternatives evaluation is to ensure that alternatives that may enhance environmental quality or may have a less detrimental effect on the environment have been considered. This EA examines in detail, and compares, the Proposed Action and the No Action Alternative (the "no build" condition). Several other alternatives were considered but eliminated because they did not meet the Proposed Action's purpose and need and/or because they were infeasible based on physical or regulatory constraints.

3.1 Proposed Action (Runway 11 Extension)

The Proposed Action at SBP, which was discussed in Chapter 1, is based on the concepts developed during the preparation of the proposed Airport Master Plan, related planning efforts, and discussions with the three scheduled air carriers serving SBP. Tables 3-1 and 3-2 provide a summary of the project components associated with the Proposed Action under Phase I and Phase II, respectively. For purposes of this EA, the FAA is analyzing the impacts only of the project components associated with Phase I. For purposes of this EIR, the County of San Luis Obispo is analyzing the impacts of the project components of both Phase I and Phase II. Figures 3-1 and 3-2 show the various project components associated with the Proposed Action in the years 2010 and 2023, respectively.

The primary project component that would be constructed under the Proposed Action is the extension of Runway 11 by 800 feet. As shown in Table 3-1, all of the other project components are associated with the runway extension. The development of an Engineered Material Arresting System (EMAS) at both ends of Runway 11/29 would be necessary to construct the extension of Runway 11 by 800 feet within the footprint of the Airport. Without the development of EMAS, the Runway Safety Area (RSA) would need to be 1,000 feet at both ends (instead of 600 feet using EMAS) and the runway extension and associated RSA would extend beyond the boundaries of the Airport.

TABLE 3-1
PHASE I PROJECT COMPONENTS TO BE IMPLEMENTED UNDER THE PROPOSED ACTION

Project	Description
	AIRFIELD FACILITIES
A-1	Construct Runway 11 EMAS
A-2	Construct Runway 29 EMAS
A-3	Extend Runway 11 by 800 feet for a total of 6,100 feet
A-4	Extend (and connect) parallel Taxiway A by 800 feet
A-5	Construct Taxiway A hold apron (interim until Taxiway A is extended)
A-6	Develop perimeter service road around the extended end of Runway 11
A-7	Repaint runway markings and improve runway lighting systems
	AVIATION SUPPORT FACILITIES
S-1	Acquire Filbin Property (13.01 Acres)
S-2	Grade for runway safety area (RSA) and object free area (OFA) at Runway 11 end
S-3	Import fill to support runway and taxiway extensions, RSA, and OFA at Runway 11 end
S-4	Import fill to support perimeter service road and Santa Fe Road
S-5	Grade the Flower Mound to use for fill material
S-6	Remove and replace Westside Detention Basin
S-7	Construct new swale parallel to East Fork of San Luis Obispo Creek for floodwater containment
S-8	Construct drainage improvements
S-9	Acquire CB&I property (13.62 Acres)
S-10	Acquire Saes property (2.33 Acres)
S-11	Demolish portion of surface parking lot on Saes property
S-12	Relocate Saes parking lot and other Saes facilities
S-13	Acquire portion of the SLO City Storage property (1.00 Acre)
S-14	Relocate utilities (12kV line, telephone)
	NON-AVIATION PROJECTS
N-1	Close Santa Fe Road between Clarion Court and Tank Farm Road on a temporary basis
N-2	Realign Santa Fe Road between Buckley Road and the East Fork of San Luis Obispo Creek
N-3	Relocate driveways that provide local access from Santa Fe Road
N-4	Remove Fiero Lane Water District settling pond

NOTE: Phase I project components are depicted on Figure 3-1. Phase I project components are being analyzed by the FAA for NEPA compliance and are being analyzed by the County for CEQA compliance.

SOURCE: San Luis Obispo County Regional Airport Master Plan, 2005.

TABLE 3-2
PHASE II PROJECT COMPONENTS TO BE IMPLEMENTED UNDER THE PROPOSED ACTION

Project	Description
	AIRFIELD FACILITIES
A-10	Relocate navigation aids (glide slope indicator / VASI)
A-11	Extend (and connect) parallel Taxiway M by 800 feet
A-12	Relocate perimeter service road adjacent to Taxiway M
A-13	Extend Runway 7 by 500 feet for a total of 3,000 feet
A-14	Extend Taxiway J by 500 feet
A-15	Extend approach lighting system (ALS) and construct access road to ALS
	AVIATION SUPPORT FACILITIES
S-19	Grade for relocated glide slope indicator
S-20	Demolish existing CB&I structures
S-21	Demolish improvements on remainder of Saes property
S-22	Grade for Buckley Road site development and for private hangar development
S-23	Construct West Side Hangar Development (phases 1 and 2)
S-24	Conduct siting study for Airport Traffic Control Tower relocation (FAA responsibility)
S-25	Relocate Airport Traffic Control Tower (FAA responsibility)

NOTE: Phase II project components are depicted on Figure 3-2. Phase II project components are being analyzed by the County for CEQA compliance. The FAA is not analyzing Phase II project components in this EA.

SOURCE: San Luis Obispo County Regional Airport Master Plan, 2005.

The facilities that would exist at SBP in 2010 as a result of the Proposed Action include all of the project components that have been identified for both the No Action Alternative and the Proposed Action. Because each of the projects included as part of the No Action Alternative have been approved (or have independent utility) and are in various stages of design and construction, it is assumed that these facilities, as well as the facilities contemplated under the Proposed Action, would exist at SBP in 2010 under the Proposed Action. Table 3-3 provides a comparison of the facilities that would exist at SBP under the No Action Alternative and the Proposed Action.

The number of enplanements that would occur in 2010 under the Proposed Action would be the same as that anticipated under the No Action Alternative. With a load factor of 66%, it is estimated that the 211,600 enplanements would be accommodated by 13,360 annual commuter airline operations. With the proposed runway extension, the aircraft that would be accommodated at SBP would primarily be regional jet aircraft. For commuter airline operations it is anticipated that 30% would be on medium-size (less than 35-seat) turboprop aircraft, 10% would be on large-size (36- to 70-seat) turboprop aircraft, and 60% would be on medium-size (50- to 70-seat) regional jet aircraft. Table 3-4 presents the anticipated commuter airline operations and the total number of aircraft operations that would occur under the Proposed Action.

Note: The project components shown on this figure are the only actions being reviewed by the FAA.

SOURCE: San Luis Obispo County Regional Airport, 2006

San Luis Obispo County Regional Airport Master Plan Update EA-EIR . 203092

Figure 3-1
Proposed Action-
Phase I (2010) Project Components

Note: The project components shown on this figure are not being reviewed by the FAA.

SOURCE: San Luis Obispo County Regional Airport, 2006

Figure 3-2
Proposed Action-
Phase II (2023) Project Components

TABLE 3-3
FACILITIES THAT WOULD EXIST IN 2010 UNDER
THE PROPOSED ACTION AND THE NO ACTION ALTERNATIVE

Facility	Proposed Action	No Action Alternative
Airfield Facilities		
Reconfigured Midfield Taxiways	X	X
Relocated runway threshold for Runway 25	X	X
Runway 11 EMAS	X	
Runway 29 EMAS	X	
Extended Runway 11	X	
Extended parallel Taxiway A	X	
Taxiway A hold apron	X	
Perimeter service road around extended end of Runway 11	X	
Repainted runway markings and improved runway lighting systems	X	
Aviation Support Facilities		
Terminal building and parking structure	X	X
East Side Hangar Development	X	X
Fuel Storage Facility	X	X
Fixed Base Operator (to be completed by Fixed Base Operator)	X	X
Replaced Westside Detention Basin	X	
New swale parallel to the East Fork of San Luis Obispo Creek for floodwater containment	X	
Drainage improvements to accommodate increased runoff from new impervious surface	X	
Relocated Saes parking lot and other Saes facilities	X	
Relocated utilities (12kV line, telephone)	X	
Non-Aviation Projects		
Realigned Santa Fe Road between Buckley and the East Fork of San Luis Obispo Creek	X	
Relocated driveways that provide local access from Santa Fe Road	X	
Removed Fiero Lane Water District settling pond	X	

SOURCE: San Luis Obispo County Regional Airport Master Plan, 2005.

The Proposed Action would result in the importation of approximately 320,000 cubic yards of fill material. The majority of this fill material, which would be used for a variety of project components associated with the runway extension (including the relocation of Santa Fe Road, the perimeter service road, the extension of Taxiway A, and the RSA), would be imported from an area known as "The Flower Mound" in the northeastern portion of the Chevron property on the

TABLE 3-4
SUMMARY OF OPERATIONS UNDER THE PROPOSED ACTION AND THE NO ACTION ALTERNATIVE

	Baseline Conditions (2004)	Proposed Action (2010)	No Action Alternative (2010)	Proposed Action (2023)
Average Seats per Departure	36	48	39	60
Boarding Load Factor	60%	66%	66%	66%
Enplanements per Departure	21	32	25	40
Annual Enplanements	163,203	211,600	211,600	301,000
Annual Departures	7,665	6,680	8,369	7,500
Annual Air Carrier Operations	15,330	13,360	16,379	15,000
Annual Air Taxi Operations	1,687	1,880	1,880	2,200
Annual General Aviation Operations	97,629	103,900	103,900	122,000
Annual Military Operations	420	850	850	850
ANNUAL TOTAL OPERATIONS	**115,066**	**119,990**	**123,009**	**140,050**

SOURCE: San Luis Obispo County Regional Airport Master Plan, 2005; ESA, 2005.

north side of Tank Farm Road. It is anticipated that about 240,000 cubic yards of fill material is available from The Flower Mound location. The remainder of the fill material be obtained from other sources in the vicinity of the Airport. The intent behind the locations from where fill could be imported is to obtain clean fill material and to minimize the distance that haul trucks need to travel between the import site and the Airport.

3.2 No Action Alternative

The No Action Alternative assumes that the Proposed Action would not occur at SBP. However, with or without the Master Plan improvements, the number of annual passengers and operations at SBP is projected to increase, as is the use of regional jet aircraft. Therefore, the Airport's demand forecasts for air passenger and air cargo activity would be the same for the No Action Alternative as for the Proposed Action (see Chapter 2, Purpose and Need for the Project). The Airport facilities under the No Action Alternative would be limited to those now existing at SBP and other projects that have been approved, but not constructed. These approved projects include: new terminal building, parking facility, and access roadway; reconfigured midfield taxiways; relocated threshold for Runway 7/25; a new fuel storage facility; new general aviation hangars on the east side of the Airport; and a new fixed-base operator facility to be developed by the fixed-based operator. Each of these projects has been subject to NEPA and CEQA environmental review and has been approved by both the FAA and the County.

In addition, the development of EMAS for each end of Runway 11/29 and the acquisition of the Filbin Property for runway approach protection purposes would occur under the No Action Alternative. Both projects would provide safety enhancements to the existing conditions and the County has identified them as projects that have independent utility and that must move forward

even if the Proposed Action does not. Although Runway 11 would not be extended under the No Action Alternative, development of EMAS for each end of Runway 11/29 is necessary because the Airport does not currently meet FAA standards for RSAs in accordance with FAA Advisory Circular 150/5300-13 Change 8. The acquisition of the Filbin Property is necessary for runway protection purposes. Neither the development of EMAS nor the acquisition of the Filbin Property has completed NEPA / CEQA review and neither project has been approved by either the FAA or the County. If the No Action Alternative is chosen, compliance with NEPA and CEQA would be required.

Table 3-5 provides an overview of the projects that would be implemented under the No Action Alternative. Figure 3-4 shows the locations of each of these projects that would be implemented under the No Action Alternative.

TABLE 3-5
PROJECTS TO BE IMPLEMENTED UNDER THE NO ACTION ALTERNATIVE

Project	Description
	AIRFIELD FACILITIES
A-8	Reconfigure Midfield Taxiways
A-9	Relocate runway threshold for Runway 25
	AVIATION SUPPORT FACILITIES
S-15	Construct terminal building and parking structure
S-16	Construct East Side Hangar development
S-17	Construct Fuel Storage Facility
S-18	Construct Fixed Base Operator (to be completed by private developer)

NOTE: Project components are depicted on Figure 3-3.

SOURCE: San Luis Obispo County Regional Airport Master Plan, 2005.

The number of enplanements that would occur in 2010 under the No Action Alternative would be the same as that anticipated under the Proposed Action. Therefore, under the No Action Alternative, it is anticipated that there would be 211,600 enplanements. With a load factor (percent of available seats occupied) of 66%, it is estimated that there would be 16,739 aircraft operations. With no change in the length of the runway, the aircraft that would be accommodated at SBP would continue to be primarily turboprop aircraft. For commuter airline operations it is anticipated that 65% would be on medium-size (less than 35-seat) turboprop aircraft, 10% would be on large-size (36- to 70-seat) turboprop aircraft, and 25% would be on medium-size (50- to 70-seat) regional jet aircraft. Table 3-4 presents the anticipated commuter airline operations and the total number of aircraft operations that would occur under the No Action Alternative.

SOURCE: San Luis Obispo County Regional Airport, 2006

Figure 3-3
Approved Projects That Could Be Implemented
Under the No Action Alternative

3.3 Other Alternatives Considered But Rejected

3.3.1 Extend Runway 29 by 800 Feet

This alternative would provide an 800-foot runway extension of Runway 29. EMAS would be constructed at each runway end and Taxiway A would be extended at the Runway 29 end. The extension of Runway 29 and its associated runway safety area (RSA) would require the realignment of State Route 227 and the realignment of Buckley Road. In addition, a portion of the hill south of the Airport would need to be removed to ensure that no penetration of FAR Part 77 surfaces would occur. The EMAS on the Runway 11 end would result in the realignment of a portion of Santa Fe Road. A detailed discussion of the impacts associated with this alternative is provided in Chapter 6.

Although this alternative would meet the FAA's purpose and need and the County's objectives (see Chapter 2), this alternative was dismissed for the following four reasons.

- State Route 227 would need to be relocated as a result of the extension of Runway 29 and the associated EMAS for the Runway 29 end.
- Buckley Road and the Buckley Road intersection with State Route 227 would require relocation.
- An additional segment of the unnamed tributary to the East Fork of San Luis Obispo Creek would need to be put into a culvert to accommodate the placement of fill that would be required to develop a runway extension and the associated RSA.
- An 800-foot extension to Runway 29 would result in terrain south of the Airport penetrating the Federal Aviation Regulation (FAR) Part 77 imaginary surfaces, and a portion of the hillside south of the Airport would need to be removed.

Although each of these issues could be resolved through engineering and design, the cost associated with resolving such issues would be prohibitive.

3.3.2 Extend Runway 11 by 800 Feet Without Use of EMAS

This alternative would create an RSA that would be 1,000 feet long (or 400 feet longer than the RSA described for the Proposed Action). Under this alternative the RSA would extend north of the existing East Fork of San Luis Obispo Creek and onto the Chevron Tank Farm property. In addition, the development of the RSA for the Runway 29 end would result in the need to realign State Route 227 and to realign Buckley Road. A detailed discussion of the impacts associated with this alternative is provided in Chapter 6.

Although this alternative would meet the FAA's purpose and need and the County's objectives (see Chapter 2), this alternative was dismissed for the following seven reasons.

- A much greater amount of fill would be required to develop an RSA that is 400 feet longer than the Proposed Action.

- Santa Fe Road would need to be relocated on Chevron Tank Farm property and the alignment of Santa Fe Road would result in an intersection with Tank Farm Road in a location that is further west than the proposed intersection. This would result in the need to modify City and County plans for the roadway system in the vicinity of the Airport.

- A portion of East Fork of San Luis Obispo Creek and the swale to be developed for flood control purposes would need to be put into a culvert.

- Placement of fill on a portion of the Chevron Tank Farm property to accommodate the RSA would be in an area where wetlands have been delineated and where habitat of the endangered Morro shoulderband snail, vernal pool fairy shrimp, and California linderiella have been documented. These impacts would require an individual Section 404 (of the Clean Water Act) permit from the U.S. Army Corps of Engineers and Section 7 (of the Endangered Species Act) consultation with the U.S. Fish and Wildlife Service.

- The County would either need to obtain an easement or acquire a portion of the Chevron Tank Farm property for development of an RSA and the realignment of Santa Fe Road. Since portions of this property are known to be contaminated, the County would be required to clean up the contaminated portions of the property prior to FAA approval for an easement or for acquisition.

- State Route 227 would need to be relocated as a result of the RSA for the Runway 29 end.

- Buckley Road and the Buckley Road intersection with State Route 227 would require relocation as a result of the RSA for the Runway 29 end.

Although each of these issues could be resolved through permit requirements, engineering and design, the cost associated with resolving such issues would be prohibitive.

3.3.3 Use of Other Airports

The market determines the traveler's airport destination. In San Luis Obispo County, neither the County Board of Supervisors nor responsible officials at other area airports have the legal authority to dictate where the air traveler should go or where airlines can provide service. Their collective responsibilities are to maintain an adequate level of service in all aviation areas at the respective airports consistent with their role in providing aviation services.

No other commercial air carrier airports exist in San Luis Obispo County. The closest air carrier airport is in Santa Maria, which is approximately 35 miles south of SBP. Other air carrier airports in closest proximity to SBP include Santa Barbara Municipal Airport, which is approximately 110 miles to the south, Meadows Field in Bakersfield, which is approximately 160 miles to the east, and Monterey Peninsula Airport, which is approximately 140 miles to the north. One alternative is to consider no additional development at SBP and to assume that facilities would instead be developed at Santa Maria, Santa Barbara, Bakersfield, and/or Monterey. It should be noted that none of these airports are owned or operated by the County of San Luis Obispo.

Attempting to artificially "move" passengers from their preferred origin or destination would result in negative systemwide surface transportation impacts, including increases in vehicle miles

traveled, increases in related air pollutant emissions and, in the case of SBP, the loss of convenient air transportation services to residents of San Luis Obispo County. More localized environmental impacts such as aircraft noise levels and air pollutant concentrations would not be eliminated by accommodating the SBP passengers and operations at other airports, but would merely be shifted from one airport to another.

However, this alternative would not meet either the FAA's purpose and need or the County's objectives.

3.3.4 Use of Other Modes of Transportation

Other modes of transportation for travelers to or from San Luis Obispo County is either private automobile, bus, or train. This alternative would require the more than 300,000 passengers that use SBP every year to travel by private automobile, bus, or train. None of these modes of travel provide people with access to all points in the U.S. and abroad in a timely manner and this alternative would not meet either the FAA's purpose and need or the County's objectives.

3.3.5 Use of Runway 7/25

This alternative would result in extending Runway 7/25 from 2,500 feet to 6,100 feet. To accomplish this alternative, additional property would need to be acquired west of the existing airport. In addition, an extended Runway 7/25 would require the installation of navigation aids and would modify the arrival and departure patterns at SBP. However, this alternative would not meet either the FAA's purpose and need or the County's objectives.

3.4 Summary of Requested Federal, State, and Local Actions and Time Frames

3.4.1 Federal Actions and Timeframes

The FAA is the lead agency responsible for preparation of this EA (FAA Orders 1050.1E and 5050.4A). This EA is intended to be used to address all required discretionary actions.

This EA is intended to assess the impacts of Phase I of the Proposed Action. Discretionary and non-discretionary federal actions that may be required include the approval of the Airport Layout Plan (ALP), the approval of further processing of an application for federal assistance using Airport Improvement Program (AIP) grants or approval to impose and use Passenger Facility Charges (PFCs), and approval of appropriate amendments to the Airport Certification Manual pursuant to 14 CFR Part 139.

3.4.2 State and Local Actions and Timeframes

San Luis Obispo County is the lead agency responsible for preparation of this EIR (CEQA *Guidelines,* Section 15051). This EIR is intended to be used to address all required discretionary County actions for the Proposed Action and any actions required to enter into long-term

agreements for this project. Following certification of the Final EIR, the San Luis Obispo County Board of Supervisors and County staff will use the EIR for future project implementation.

This EIR is intended to assess the impacts of both Phase I and Phase II of the Proposed Action. Discretionary and non-discretionary actions that may be required, include:

San Luis Obispo County

- Air Pollution Control District – Permits for construction, operation, demolition, and naturally occurring asbestos
- Fire Department – Building permit requirements including fire safety plan, height limitations (related to ladder access), and emergency access
- Public Works-Engineering – Review cumulative traffic circulation impacts and assess mitigation fee
- Public Works-Engineering – Review for consistency with San Luis Obispo Watershed Drainage Design Manual
- Solid Waste – Compliance review to ensure that waste disposed during construction is reduced to at least 50% of waste generated by development
- Board of Supervisors – Certification of this EIR and approval of the proposed project
- Department of Planning and Building – Conditional Use Permit for grading the Flower Mound and placement of fill material at the Airport

California Department of Transportation

- District 5 – Encroachment Permit Approval for work within State Right-of-Way
- Division of Aeronautics – Review and permit changes to Airport Layout Plan

California Department of Fish and Game

- Fish and Game Code Section 711.4(d) may require filing fee (submit to San Luis Obispo County Clerk)

California Department of Parks and Recreation, Office of Historic Preservation

- Consultation under Section 106 of the National Historic Preservation Act

This page intentionally left blank.

CHAPTER 4
Affected Environment

4.1 Airport Location and Study Area

The affected environment at San Luis Obispo County Regional Airport includes all those areas on the Airport or in the vicinity of the Airport that could be directly or indirectly affected by implementation of the Proposed Action or the No Action Alternative.

SBP is located about three miles south of downtown San Luis Obispo in unincorporated San Luis Obispo County. The Airport is owned and operated by the County of San Luis Obispo. Figure 2-1 in Chapter 2, Purpose and Need for the Project, shows the Airport and vicinity. SBP property covers approximately 340 acres, 290 of which are developed. Section 2.1.2, Existing Airport Facilities, describes specific airside and landside features at SBP. Figure 2-2 in Chapter 2 shows the location of existing on-Airport facilities.

4.2 Existing Land Use and Land Use Planning

SBP serves as the only facility with scheduled airline service in San Luis Obispo County. Other nearby airports with scheduled airline service in the region include Santa Maria Public Airport, which is about 35 miles south of SBP, Santa Barbara Municipal Airport, which is about 110 miles south of SBP, and Monterey Peninsula Airport, which is about 140 miles north of SBP.

Land uses in the vicinity of SBP include a mix of agricultural, commercial, industrial, institutional, open space, and residential land uses. Section 5.2, Compatible Land Use, provides a description of the land uses that are most affected by Airport-related activities. Parks and recreation areas, wildlife and waterfowl refuges, and historic sites in the vicinity of SBP are discussed in Section 5.7, Department of Transportation Act Section 4(f).

The Airport and land immediately surrounding the Airport are generally under County jurisdiction. The County's General Plan (*San Luis Obispo Area Plan*) designates land use for SBP and the vicinity. The Airport is designated as *Public Facility* and land immediately adjacent to the Airport is designated as either *Commercial Service* or *Industrial*. One parcel at the intersection of SR 227 and Aero Drive is designated *Commercial Retail* and land to the northwest is designated *Recreation*. The County's *Airport Land Use Plan* (ALUP) is an overlay designation that reflects an assessment of aviation risk. Existing land use is generally consistent with the land use designations.

Although SBP is currently under the County's jurisdiction, the Airport vicinity lies within the City of San Luis Obispo Urban Reserve Area. The City has identified this area for future urban expansion as described in the *Airport Area Specific Plan* (AASP). The City recently adopted the AASP after it was modified to be consistent with the ALUP. Among the changes were new policies for Airport compatibility, including identifying all County land around the Airport as *Public* and meeting the open space requirements of the ALUP. The AASP designates land immediately to the southeast and southwest as *Services and Manufacturing*, and a small parcel to the southeast as *Open Space*. Land to the northeast is designated *Services and Manufacturing* and *Business Park.* The Chevron Tank Farm property is designated *Open Space* and a small amount of property to the northwest is designated *Agriculture.* The AASP does not designate any additional land for development. The City's next step will be to rezone the land within its jurisdiction and pre-zone unincorporated properties.

4.3 Demographics and Social Profile

4.3.1 Population

According to the 2000 U.S. Census data, California had the largest population increase of all 50 states since 1990, adding nearly four million people, with an average annual growth rate of 1.3 percent. As a result, California's 33.9 million residents make it the most populous state in the country and account for 12 percent of the nation's population. San Luis Obispo County experienced an average annual growth rate of 1.3 percent between 1990 and 2000, adding approximately 29,500 new residents. The County is expected to grow to 412,760 residents by the year 2023, an increase of 166,000 residents over the year 2000. Historical and forecast population data for San Luis Obispo County and the State of California are presented in Table 4-1.

TABLE 4-1
HISTORICAL AND FORECAST POPULATION
SAN LUIS OBISPO COUNTY AND STATE OF CALIFORNIA

	Historical		Forecast			
Area	1990	2000	2008	2013	2023	Avg. Ann. Growth Rate (2000–2023)
San Luis Obispo County	217,162	246,681	308,140	343,030	412,760	2.26%
State of California	29,760,021	33,871,648	39,122,750	41,714,220	47,796,040	1.51%

SOURCE: Historical – U.S. Census Bureau; Forecast – Interpolated from California State Department of Finance, Demographic Research Unit; from San Luis Obispo County Regional Airport Master Plan 2005.

4.3.2 Employment

Since 1993, annual average unemployment rates for both San Luis Obispo County and neighboring counties have been consistently lower than statewide rates, suggesting local employment opportunities. The County's unemployment rate has fallen continuously since 1993,

when it was at a high of 8.1 percent. The County's unemployment rate in 2003 was 3.4 percent or about half the statewide unemployment rate. Table 4-2 provides historical employment characteristics for San Luis Obispo County and the State of California from 1993 to present.

TABLE 4-2
HISTORICAL UNEMPLOYMENT RATES

	1993	1995	1997	1999	2001	2003
San Luis Obispo County	8.1%	6.6%	4.7%	3.2%	2.8%	3.4%
State of California	9.4%	7.8%	6.3%	5.2%	5.4%	6.7%

SOURCE: California Labor Market Information directly and from San Luis Obispo County Regional Airport Master Plan 2005.

San Luis Obispo's economy is largely based on tourism and education. As a result, services, government, and retail trade are significant industries in the County. Services, the largest industry in the County, provide over 44,000 jobs, or 31.8 percent of total employment. Retail trade, the second largest industry, accounts for just over 20 percent of total employment, with 28,850 jobs reported. Government is also a significant sector of employment in the County, with over 21,000 jobs reported in 2003. The majority of government jobs in San Luis Obispo County are in the local government sector.

Total employment is projected to increase by an average annual rate of 1.8 percent through the year 2023, adding over 198,000 new jobs. Services, retail trade, and government will continue to dominate, accounting for over 70 percent of all employment in San Luis Obispo County by 2023. Education and tourism will continue to contribute strongly toward the County's economic growth. The 15 largest employers in the County are presented, alphabetically, in Table 4-3.

4.3.3 Income

The County's per capita personal income (PCPI), adjusted for 1996 dollars, has remained lower than that of both the country and the state since 1990. This trend is expected to continue through the planning period. Forecasts indicate an average annual increase of 1.1 percent (2000-2023) for the County, the state, and the nation (see Table 4-4).

4.4 Physical and Natural Environment

The San Luis Obispo area is located within the Southern California Coast Range and San Luis Obispo County is bisected by the Santa Lucia Mountain Range. The most distinctive regional feature is a chain of 14 remnant volcanoes that extend northwesterly from the City of San Luis Obispo to the City of Morro Bay, terminating in the prominent visual landmark of Morro Rock. Other visually prominent members of this volcanic chain include Hollister Peak, Bishop Peak, and Islay Hill.

The Airport is located on a relatively flat alluvial plain with few visually significant natural features. However, the openness of the area provides sweeping views of the scenic rural and

TABLE 4-3
MAJOR EMPLOYERS IN SAN LUIS OBISPO COUNTY

Employer Name	Location (city)	Industry
Arroyo Grande Community Hospital	Arroyo Grande	Hospital/Medical
Arroyo Grande High School	Arroyo Grande	Education
Atascadero State Hospital	Atascadero	Hospital/Medical
California Polytech State University	San Luis Obispo	Education
California State Prison	San Luis Obispo	Government
French Hospital Medical Center	San Luis Obispo	Hospital/Medical
JIT Manufacturing Inc.	Paso Robles	Misc. Manufacturing
Mid-State Bank	Arroyo Grande	Commercial Banking
Pacific Gas & Electric Co.	San Luis Obispo	Electric Services
Paris Precision Products	Paso Robles	Fabricated Structural Metal Products
Ramirez Farm Labor	Shandon	Personnel Supply Services
Sierra Vista Regional Medical Center	San Luis Obispo	Hospital/Medical
Talley Farms	Arroyo Grande	Wholesale Grocery & Related Products
Twin Cities Community Hospital	Templeton	Hospital/Medical
Wal-Mart	Paso Robles	Department Store

SOURCE: California Labor Market Information, Employment Development Department; from San Luis Obispo County Regional Airport Master Plan 2005.

TABLE 4-4
PERSONAL INCOME PER CAPITA (1996$)

	Historical			Forecast			
Area	1990	2000	Avg. Ann. Increase (1990–2000)	2008	2013	2023	Avg. Ann. Increase (2000–2023)
SLO County	$20,820	$25,070	1.9%	$27,140	$28,660	$32,130	1.1%
California	$25,550	$29,930	1.6%	$32,450	$34,250	$38,180	1.1%
United States	$22,860	$27,430	1.8%	$29,950	$31,690	$35,510	1.1%

SOURCE: Complete Economic and Demographic Data Source (CEDDS) 2003; from San Luis Obispo County Regional Airport Master Plan 2005.

agricultural open space and distinctive peaks and ridgelines. The terrain surrounding SBP favors approaches to Runway 11 as hills are much closer to the end of Runway 29, limiting clearance within one mile.

The mountains contribute to several distinct local climates, ranging from year-round mild temperatures and dense seasonal fog along the County's 85-mile coastline, to more dramatic temperature variations in the northern inland region. Temperatures at the Airport range from the low 40s in the winter to the high 70s in the summer.

4.5 Past, Present, and Reasonably Foreseeable Future Actions

As required by FAA Order 1050.1E, *Environmental Impacts, Policies and Procedures*, major past, present, and reasonably foreseeable future actions in the vicinity of the Airport were obtained from County and City records and are shown on Figure 4-1.

4.5.1 Past Actions

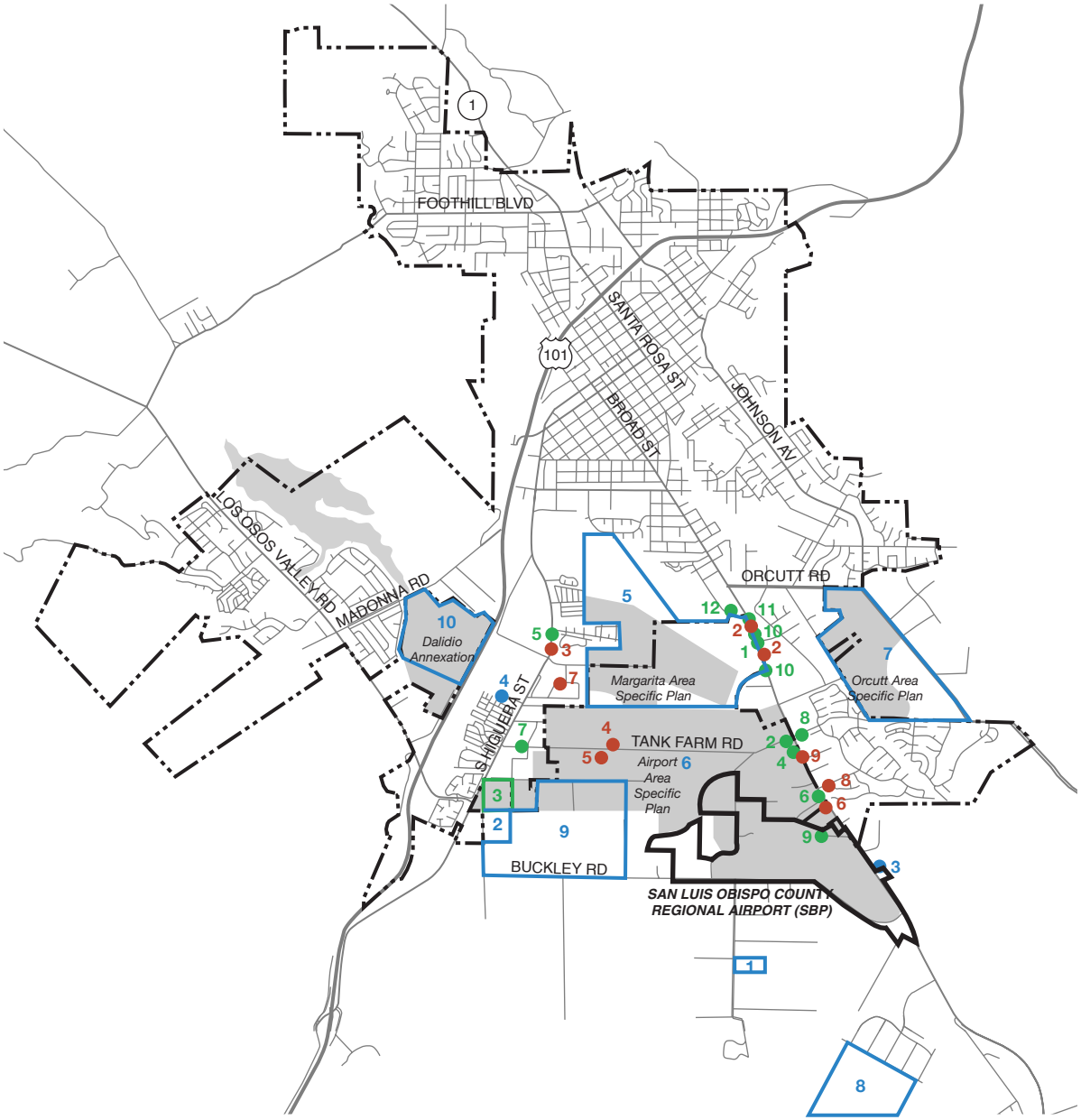
The most notable past projects are those implemented as a result of the Airport Master Plan approved in 1998. Those projects include the 500-foot extension of the 29 end of Runway 11/29 and construction of the new aircraft rescue and firefighting facility (ARFF). As shown on Figure 4-1, recently completed off-Airport development projects in the vicinity include:

- Courtside Cellars/Tolosa Winery (17.2 acre winery site, 124 acre vineyard)
- Cole Motor Auto Dealership (4.5 acres, 8,500 square feet) – dealership and office/showroom
- Furniture Store (8,500 square feet)
- Kennedy Health Club (47,000 square feet)
- Retail/Admin (5 acres) – farm supply
- Aero Vista Business Park (75,000 square feet)
- Office/Technology Building (20,000 square feet)
- Stone Creek Residential (26 units)
- Roadhouse/Mixed Use ((15, 293 square feet)

4.5.2 Present Actions

Current actions at the Airport include reconfiguring the midfield taxiways and developing general aviation hangars and a fixed base operator (FBO) on the east side of the Airport. As shown on Figure 4-1, present actions off-Airport include:

- Cinderella Carpet One Mixed Use (first floor 10,432 showroom and 5,286 square foot warehouse; second floor, 6 1-bedroom residential units) – construction 2006
- Tompkin's Medical Center (5 acres; 2 2-story buildings, 52,352 and 24,756 square feet) – under construction
- Dioptics Commercial Manufacturing (10 acres, about 120,000 square feet) – under construction



PAST ACTIONS

1 Courtside Cellars/Tolosa Winery
2 Cole Motor Auto Dealership
3 Furniture Store
4 Kennedy Health Club
5 Retail/Admin
6 Aero Vista Business Park
7 Office/Technology Building
8 Stone Creek Residential
9 Roadhouse/Mixed Use

PRESENT ACTIONS

1 Cinderella Carpet One Mixed Use
2 Tompkin's Medical Center
3 Dioptics Commercial Manufacturing
4 Cannon Commercial Park
5 Brezden Commercial Development
6 Auto Sales, Smith Volvo
7 Commercial and Industrial Buildings
8 Tank Farm Office Building
9 Rental Car Facility at Airport
10 Broad Street Mixed Use
11 Margarita Area Specific Plan
12 PUD

FUTURE ACTIONS

1 Veterinary Facility Expansion and Zone Change
2 Zoomed Manufacturing facility
3 Morabito/Burke Warehouse
4 Industrial
5 Margarita Area Specific Plan
6 Airport Area Specific Plan
7 Orcutt Specific Plan
8 Weyrich Agricultural Cluster
9 Avila Ranch
10 Dalidio/Marketplace

Specific Plan or Annexation Area

City Limits

SOURCE: ESA

San Luis Obispo County Regional Airport Master Plan Update EA-EIR . 203092

Figure 4-1
Actions in the Airport Vicinity

- Cannon Commercial Park (102,000 square feet office space, 4,000 square feet mini mart/gas station) – grading underway, construction 2006
- Brezden Commercial Development (13,820 square feet) – construction 2006
- Auto Sales, Smith Volvo (47,000 square feet) – construction 2006 or permit expires
- Commercial and Industrial Buildings (2 new buildings) – grading underway, complete construction 2006
- Tank Farm Office Building (25,000 square feet) – construction underway, complete 2006
- Rental Car Facility at Airport (25,000 square feet) – construction 2006
- Broad Street Mixed Use (12 acres; 86 residential units [single and multi-family] and 32,000 square feet commercial) – commercial under construction, residential construction 2006)
- Margarita Area Specific Plan (initial phase, 131 units) – approved by the Airport Land Use Commission (ALUC) and City of San Luis Obispo; construction 2006, occupy 2007
- PUD (9 units) – grading underway, complete construction 2006

4.5.3 Future Actions

Reasonably foreseeable future actions at the Airport include a new 66,000 square-foot passenger terminal building, parking facility, and on-Airport access road. As shown on Figure 4-1, reasonably foreseeable future actions in the vicinity of the Airport would represent the range of commercial, industrial, and residential development, as well as open space designation. Currently identified actions include:

- Veterinary Facility Expansion and Zone Change (20.38 acres) – Rezoned to Residential Rural (in construction permit process, construction 2007)
- Zoomed Manufacturing Facility (10 acres, about 106,541 square feet) – (approved, but property for sale and new industrial development proposal is being presented)
- Morabito/Burke Warehouse (57 acres, subdivided into 28 commercial lots for about 500,000 square feet of total commercial space) – preliminary grading underway, construction 2007
- Industrial (35,000 square feet) – construction date unknown
- Margarita Area Specific Plan (420 acres, including earlier residential phase; about 749 additional residential units and 969,100 square feet of commercial space) – approved by ALUC and City of San Luis Obispo; estimate build-out within 20 years, with most construction prior to 2015

- Airport Area Specific Plan (958 acres in Cluster Development Zone: 346 acres Open Space, 114 acres Business Park, 491 acres Services and Manufacturing, and seven acres Medium-density Residential; remainder Public Facilities [Airport]) – approved by ALUC and City of San Luis Obispo; estimate 90 percent build-out over 20 years

- Orcutt Specific Plan (231 acres; about 900-1,000 residences on about 113 acres, commercial/residential mixed use on about 5 acres, and elementary school on 5-acre site) – Plan is in draft form and City has nearly completed the Environmental Impact Report (EIR), ALUC does not support elementary school siting; earliest phases unlikely before 2009; estimate 75 percent build-out over 15 years

- Weyrich Agricultural Cluster (294 acres; Agricultural Cluster of 13 1-acre lots) – under review by County Planning Department

- Avila Ranch (150 acres, commercial and residential) – conceptual design and layout stage

- Dalidio/Marketplace (large commercial development with smaller residential and open space component) – under review by County Planning Department

CHAPTER 5
Environmental Consequences and Mitigation Measures

5.1 Noise

Noise is an important environmental issue with regard to the operation of most airports, including SBP. Due to this importance, this section presents a comprehensive analysis of the existing and future noise environment at SBP. Included in this section are a description of the terminology used to describe noise, a discussion of the noise monitoring program conducted at SBP to evaluate the existing noise environment, and a discussion of the criteria used by the FAA to determine the significance of project-related changes in noise exposure. This section focuses on the anticipated impacts resulting from three principal sources of noise: aircraft noise, surface transportation (vehicular traffic and railroad) noise, and construction noise during those periods when construction contemplated by the project is occurring.

5.1.1 Background and Methodology

5.1.1.1 Regulatory Context

For a discussion of the regulatory context for noise, see Appendix O.

5.1.1.2 Thresholds of Significance

There are no FAA-approved or adopted criteria or thresholds for evaluating the significance of changes in aircraft single events that may result from an airport improvement project. For purposes of this analysis, and in consideration of applicable federal, state and local noise level criteria, the following thresholds of significance are used to evaluate the potential aircraft, surface traffic and construction noise impacts of the Proposed Action.

5.1.1.2.1 NEPA Thresholds

The Proposed Action compared to the No Action Alternative is used as the basis of comparison of noise exposure for purposes of determining the significance of project-related noise impacts. For impacts associated with aircraft noise, changes in *cumulative* noise exposure using the Community Noise Equivalent Level (CNEL) metric in noise-sensitive areas where the No Action Alternative noise exposure is 65 CNEL or greater are considered significant if the alternative

being analyzed results in an increase in CNEL of 1.5 dB or greater. For a discussion of CNEL, see Appendix O.

5.1.1.2.2 CEQA Thresholds

Under CEQA regulations the thresholds of significance are the same for aircraft noise as the regulations outlined above for NEPA. The criteria discussed above will be used in determining whether an impact is significant under CEQA. However, the comparisons to be used in the analysis will be the Proposed Action in 2010 and in 2023 compared to the Baseline Conditions. Under CEQA, construction noise and surface traffic noise impacts also are compared to Baseline Conditions. For impacts related to construction noise, these are considered to be significant if the noise level is greater than the existing background noise levels. For surface traffic impacts, project-related increases in cumulative surface traffic noise exposure using the DNL metric are considered significant if they are greater than 3 dB at a noise sensitive location and the resulting cumulative surface traffic noise level exceeds 60 DNL.

5.1.1.3 Methodologies

For determining the SEL values around the Airport, noise measurement sites were selected by the consultant in cooperation with San Luis Obispo County staff. These SEL values are provided for informational purposes only. The noise monitoring period occurred from August 30, 2005 through September 1, 2005. Noise monitoring locations and the primary noise sources affecting those locations are identified in Table 5.1-1. The locations of the noise monitoring sites with respect to the Airport are shown in Figure 5.1-1.

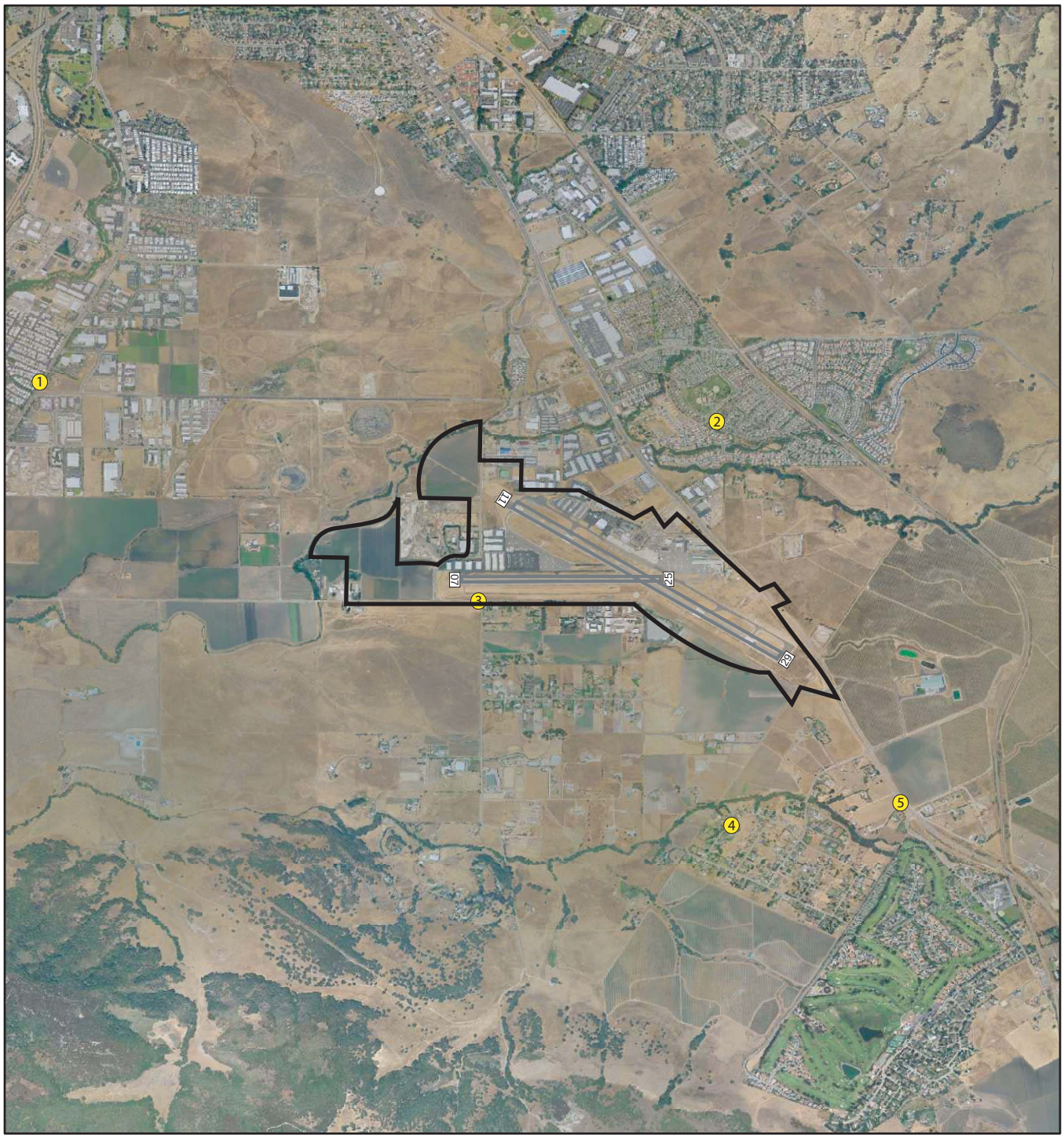
TABLE 5.1-1
NOISE MONITORING LOCATIONS

Number	Description	Primary Noise Sources
1	3860 South Higuera Street	aircraft, traffic on South Higuera Street
2	4329 Poinsettia Street	aircraft, traffic on State Route 227
3	Davenport Creek Road	aircraft, traffic on Buckley Road
4	260 Hacienda Avenue	aircraft, traffic on Hacienda Avenue
5	5414 Edna Road	aircraft, traffic on Edna Road

Note: Site number 3 was located 500 feet from the intersection of Davenport Creek Road and Buckley Road.

SOURCE: ESA, 2005

Noise monitoring consisted of setting up automated sound level analyzers at the locations described in Table 5.1-1 and situating the microphones so that there was an unobstructed view of the primary aircraft noise sources. For example, at Site 1, the primary aircraft noise source was aircraft in flight departing from Runway 29. In contrast, the primary aircraft noise sources at Site 4 were aircraft either moving about on the airfield or either landing on Runway 29 or departing to the south on Runway 11. A more detailed account of site-specific conditions and noise sources affecting each monitoring site is presented later in this section of the EA/EIR.



AERIAL SOURCE: Airphoto USA, 8-01-03

1 Noise Monitoring Sites

San Luis Obispo County Regional Airport (Sbp) Boundary

0 2600

Foot

SOURCE: ESA Airports, 2005

San Luis Obispo County Regional Airport Master Plan Update EA-EIR . 203092

Figure 5.1-1
Noise Monitoring Sites

Noise monitoring instrumentation consisted of Metrosonics Model db-308 sound level meters. The instrumentation was calibrated prior to use with a Metrosonics Model CL304 acoustic calibrator to ensure the accuracy of the measurements. The instrumentation complies with applicable requirements of the American National Standards Institute (ANSI) for Type II sound level meters. The dB-308s ran continuously throughout the two-day sampling period, measuring noise levels from *all sources affecting the monitoring site*. Additionally, a field analyst spent time at each of the monitoring sites to record single event levels associated with airport activity. Given the proximity of the monitors to traffic and other non-aircraft noise sources, the noise events recorded by the monitors included a combination of events caused by aircraft and other sources. A trained observer spent time at each site to specifically monitor and identify the noise levels associated with aircraft and other sources.

For determining the CNEL values around the Airport, Integrated Noise Model (INM) Version 6.1 was used. Version 6.1 is the latest version of the INM and represents the "state-of-the-art" in aircraft noise prediction models. It is also the noise model required by the FAA for use in quantifying aircraft noise exposure for the Federal Aviation Regulation (FAR) Part 150 noise compatibility planning process and for assessing the noise-related impacts of proposed airfield improvement projects. Compared to earlier versions of the INM, Version 6.1 contains an expanded aircraft noise level and performance data base, improved computational methods for adjusting aircraft departure profiles to account for the effects of airfield elevation and air temperature, and a new plotting program that produces a smoother final noise contour plot.

INM Version 6.1 accounts for local terrain when calculating the distance between aircraft and the ground they are passing over (slant range distance), but does not account for buildings or local topographic features that may provide localized acoustical shielding.

The INM calculates aircraft noise exposure by mathematically combining aircraft performance factors and noise generation characteristics with airport operations factors at a series of points within a Cartesian coordinate system that defines the location of airport runways and generalized aircraft flight tracks. The model then interpolates between points to plot contours of equal noise exposure. User inputs to the INM include the following:

- Airfield elevation and temperature
- Runway configuration
- Aircraft flight track definitions
- Distribution of aircraft to flight tracks
- Aircraft trip lengths and/or departure profiles
- Aircraft approach profiles
- Aircraft traffic volume and fleet mix
- Day/night distribution of flights

When the user specifies a particular aircraft type from the INM data base, the model automatically provides the necessary inputs concerning aircraft power settings, speed, departure profiles and noise levels. Since each airport is different in terms of the types of aircraft flown and local operating conditions, some differences between noise levels measured by a noise monitoring program and noise levels predicted by the INM may be expected. Such differences may be minimized by the careful selection of aircraft types and operating assumptions from the INM data base.

The INM is intended by the FAA for use in defining aircraft noise exposure at levels of 65 CNEL or above. At exposures of less than 65 CNEL, the INM becomes less accurate due to an increase in variables such as deviations from assumed generalized flight tracks, Federal Contract Tower (FCT) Air Traffic Control instructions that may affect aircraft altitude and power management, and atmospheric and other local conditions that can significantly affect noise propagation over larger distances. Nevertheless, the INM is required by the FAA for use in evaluating the noise implications of proposed airport improvement projects, and is the best methodology available for assessing the *relative changes in noise exposure* that could be anticipated by proposed modifications to airfield configuration or aircraft operating procedures.

5.1.2 Baseline Conditions

5.1.2.1 Overview

This section describes existing noise sources and noise levels in the Airport vicinity. Included are discussions of aircraft, railroad and surface traffic sources and the methods and assumptions used to prepare a CNEL contour map for existing aircraft operations. The noise monitoring study conducted specifically for this EA/EIR is described in Appendix B. Because no impacts were identified above 65 CNEL, no additional analysis was completed for those areas between 60 and 65 CNEL. For purposes of this analysis, 2004 is considered the base year because it is the most recent calendar year for which complete aircraft operations data were available when this noise analysis was commenced.

5.1.2.2 Aircraft CNEL Contours for Existing Conditions Using INM

Integrated Noise Model

Version 6.1 of INM was used to prepare CNEL contours for the Baseline Conditions (2004 calendar year) at SBP. Following is a discussion of various assumptions that were used to model existing aircraft noise exposure at SBP using the INM.

Aircraft Operations Data

The FAA and State of California require that annual average daily aircraft activity levels be used for the calculation of noise exposure as defined by the CNEL for federally-sponsored airport improvement projects. The annual average number of daily aircraft operations is determined by dividing the total number of aircraft operations occurring over the year by 365. This means that the number of aircraft operations assumed for the preparation of noise contours is likely to be less

than the number of operations that occur on a busy day and greater than the number of operations that occur on a slow day. As previously stated, annual average levels of aircraft activity are generally used for assessment of the long-term or cumulative effects of noise from aircraft and other transportation sources.

For the EA/EIR noise analysis, aircraft operations data have been taken from aviation demand and based aircraft fleet mix forecasts contained within the *San Luis Obispo County Regional Airport Master Plan* (2004) unless otherwise noted. Table 5.1-2 is a summary of the annual average daily operations used for noise modeling. Included in Table 5.1-2 are operations and fleet mix data for Baseline Conditions (2004).

TABLE 5.1-2
ANNUAL AVERAGE DAILY AIRCRAFT OPERATIONS: 2004-2023
SAN LUIS OBISPO COUNTY REGIONAL AIRPORT

Aircraft	Baseline Conditions (2004)	No Action Alternative (2010)	Proposed Action (2010)	Proposed Action (2023)
Itinerant Operations:				
EMB 120	20.0	18.63	6.99	0
20-35 Seat Commuter (Saab 340)	12.0	11.18	3.99	0
Embraer 140	2.0	2.30	4.39	8.22
CRJ-200/EMB 175/190	8.0	9.18	17.57	32.88
36-70 Seat Commuter (Q400)	0	4.58	3.66	0
Business Jets	21.03	22.4	22.40	26.3
Twin engine turboprop.	3.25	3.46	3.46	4.06
Twin engine piston prop.	12.13	12.68	12.68	14.88
Single engine prop.	133.41	139.36	139.36	163.56
Helicopter	6.12	6.40	6.40	7.50
Military	1.15	2.31	2.31	2.31
Subtotal	**219.09**	**232.48**	**223.21**	**259.71**
Local Operations:				
Twin engine piston prop.	7.70	8.44	8.44	9.92
Single engine prop.	84.58	92.82	92.82	109.04
Helicopter	3.88	4.26	4.26	5.00
Subtotal	**96.16**	**105.52**	**105.52**	**123.96**
Daily Totals	**315.25**	**338.00**	**328.73**	**383.67**
Annual Totals	**115,066**	**123,370**	**119,989**	**140,049**

NOTE: 2004 operations data was collected from the San Luis Obispo County Regional Airport

SOURCE: San Luis Obispo County Regional Airport Master Plan Update, 2005.

Temporal Distribution of Aircraft Operation

The assumed temporal distribution of aircraft operations is important for the calculation of the CNEL because, as previously described, evening operations (7:00 p.m.-10:00 p.m.) are weighted by a factor of three and nighttime operations (10:00 p.m.-7:00 a.m.) are weighted by a factor of ten. These weighting factors are mathematically equivalent to adding approximately 4.8 dB to the noise levels generated by individual evening flights and 10 dB to the noise levels generated by individual nighttime flights.

The day/evening/night distribution of commuter aircraft operations at SBP has been estimated by reviewing the airline schedules provided by the Airport. The day/evening/night distribution of other aircraft operations has been estimated based upon discussions with San Luis Obispo County staff, and previous noise studies conducted for the Airport. Table 5.1-3 presents a summary of the assumed temporal distribution of flights used for noise modeling.

TABLE 5.1-3
TEMPORAL DISTRIBUTION OF AIRCRAFT OPERATIONS FOR SAN LUIS OBISPO COUNTY REGIONAL AIRPORT

	Arrivals			Departures		
Aircraft Category	**7a–7p**	**7p–10p**	**10p–7a**	**7a–7p**	**7p–10p**	**10p–7a**
Commuter/Air Taxi	*67%*	*19%*	*14%*	*67%*	*19%*	*14%*
Twin Eng. Prop.	71%	21%	8%	71%	21%	8%
Single Eng. Prop.	85%	11%	4%	85%	11%	4%
GA Jet	90%	10%	-0-	90%	10%	-0-
Helicopter	80%	20%	-0-	80%	20%	-0-

SOURCE: Airline Schedules 2004; 1998 San Luis Obispo Airport Master Plan EA/EIR.

Runway Use and Generalized Flight Tracks

The existing main runway at SBP is Runway 11/29, which is 5,300 feet long and 150 feet wide. The crosswind runway, Runway 7/25, is 3,259 feet long and 100 feet wide. Runway 7/25 is used infrequently, and only by aircraft weighing 20,000 pounds or less with dual wheel configuration.

Based upon information provided by the FCT Air Traffic Manager at SBP, the runway use was 77 percent on Runway 29 and 23 percent on Runway 11. According to this source, this is representative of typical conditions in the San Luis Obispo area. Therefore, a runway use split of 77 percent/23 percent was used for noise modeling for Baseline Conditions and for future years within the planning period. Although Runway 7/25 is occasionally used by light single engine and twin engine aircraft, it was assumed that such operations have no effect on annual average noise exposure in the Airport vicinity as defined by the CNEL.

Generalized flight tracks for noise modeling were developed through discussions with the FCT Air Traffic Manager at SBP and San Luis Obispo County staff, and through field observations.

Generalized flight tracks represent areas of the community around the Airport with the highest concentrations of aircraft overflights. It is acknowledged that the generalized flight tracks do not indicate *all* areas where aircraft overflights occasionally occur. This is especially true for light single engine propeller aircraft and for all aircraft types at progressively greater distances from the Airport.

Figures 5.1-2 and 5.1-3 show the generalized departure, arrival and local pattern flight tracks that were used for noise modeling. Although it is desirable to show the most accurate generalized flight tracks possible in all areas around the Airport, the CNEL contours produced in the noise modeling process are confined to an area that is within the immediate Airport vicinity. This means that the locations of assumed aircraft flight tracks at greater distances from the Airport have no effect on the size or shape of CNEL contours and therefore no effect on the results of the noise impact analysis of the EA/EIR.

Table 5.1-4 summarizes the assignment of aircraft to the generalized flight tracks shown in Figures 5.1-2 and 5.1-3. Assignments are based upon input from the FCT Air Traffic Manager at SBP concerning the origin and destination of flights at the Airport. The flight track use factors reported in Table 5.1-3 include consideration of the aforementioned flight origin/destination points *and* annual average runway use.

INM Aircraft Assumptions

Table 5.1-5 provides a summary of the aircraft types from the INM Version 6.1 data base that were used to model noise exposure at SBP. The selection of aircraft types from the INM data base was based upon the consultant's experience with conducting studies at airports with operations that are similar to those at SBP, and the requirements of the FAA for use of the INM in evaluating proposed airfield improvement projects.

CNEL Contour Preparation

The INM was used to prepare CNEL contours representative of Baseline Conditions at SBP using the above-described operations assumptions. Figure 5.1-4 depicts CNEL contour values of 60, 65, 70, and 75 dB for the Baseline Conditions (2004) on the existing 5,300-foot-long runway. Although no significance criteria is related to the 60 CNEL noise contour, it is included because this is the County's noise compatibility standard.

The INM was also used to Calculate CNEL values due to aircraft operations at the five noise monitoring locations. Calculated *aircraft* CNEL values are less than the *total* CNEL values measured during the September 2005 noise monitoring study because measured values included contributions from all sources affecting the monitoring sites. In many cases, such non-aircraft noise sources were found to make a significant contribution to total noise exposure as defined by the CNEL. This means that aircraft noise can be clearly audible at the monitoring sites, especially during certain times of the day or night when noise levels from other sources are at a minimum or atmospheric conditions are particularly conducive to the transmission of sound from the Airport

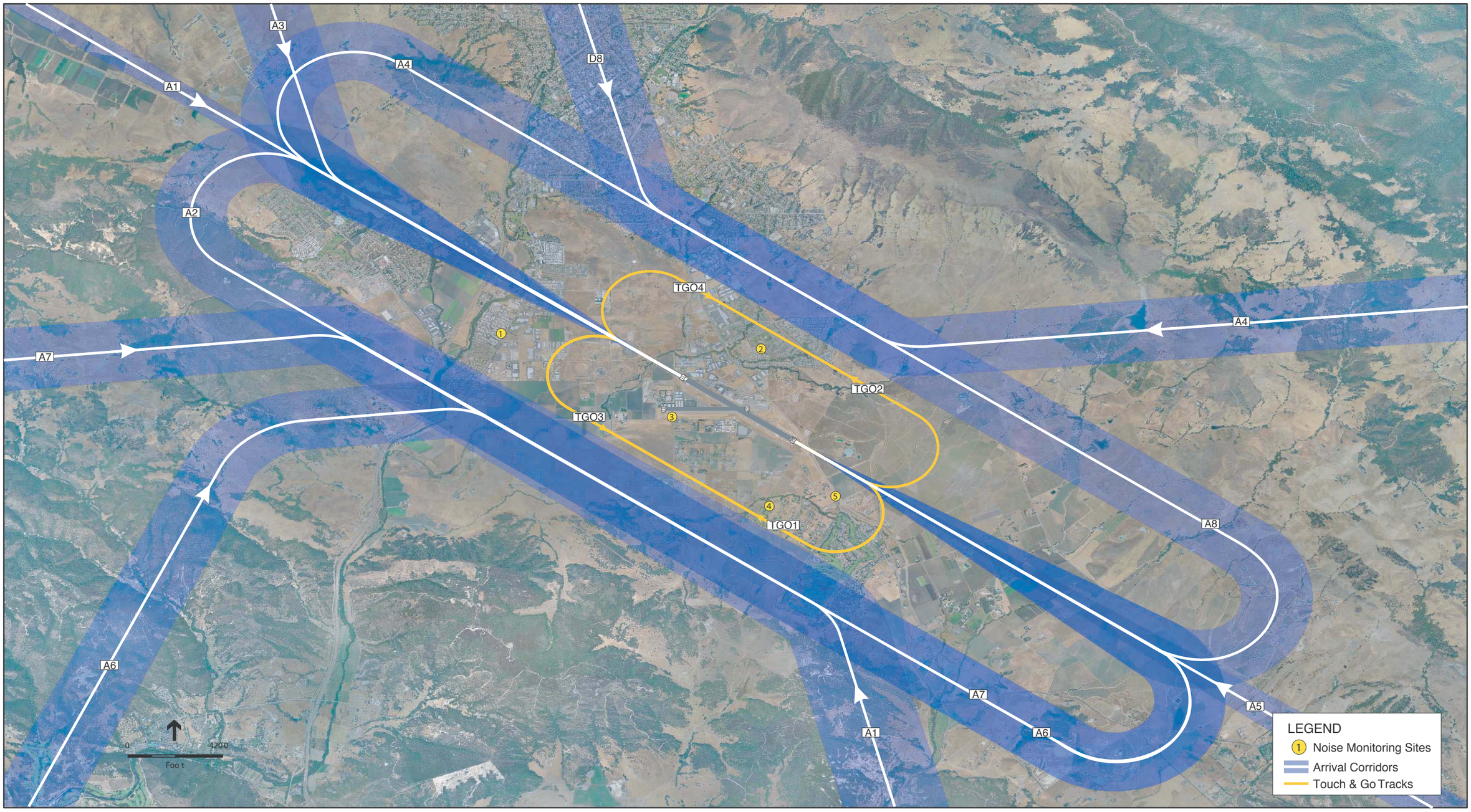
AERIAL SOURCE: Airphoto USA, 8-01-03

SOURCE: ESA Airports, 2005

San Luis Obispo County Regional Airport Master Plan Update EA-EIR . 203092

Figure 5.1-2
Departure Tracks at SBP

This page left intentionally blank



AERIAL SOURCE: Airphoto USA, 8-01-03

SOURCE: ESA Airports, 2005

Figure 5.1-3
Generalized Aircraft Departure Tracks
Used for Noise Modeling

This page left intentionally blank

TABLE 5.1-4
FLIGHT TRACK ALLOCATION FACTORS FOR NOISE MODELING – BASELINE AND FUTURE CONDITIONS

Runway	Operations	Track/a/	Origin/Destination	Factor (%)
11 (23%)	Departure	D1	East	2.3
	Departure	D2	NE/NW	5.3
	Departure	D3	SE	7.8
	Departure	D4	West/South	7.6
29 (77%)	Departure	D5	West	13.9
	Departure	D6	South	8.5
	Departure	D7	SE	26.2
	Departure	D8	NW	14.6
	Departure	D9	NE/East	10.8
25 (3%)	Departure	D10 to D4	West/NW	1.5
	Departure	D10 to D6	West/SW	1.5
Departure Total				**100.0**
11 (23%)	Arrival	A1	West	4.6
	Arrival	A2	SE/South	10.8
	Arrival	A3	NW	4.4
	Arrival	A4	NE/East	3.2
29 (77%)	Arrival	A5	East/SE	33.9
	Arrival	A6	South	10.0
	Arrival	A7	West	15.4
	Arrival	A8	NW/NE	17.7
Arrival Total				**100.0**
11 (23%)	Touch and Go	TG1	South	20.7
	Touch and Go	TG2	North	2.3
29 (77%)	Touch and Go	TG3	South	69.3
	Touch and Go	TG4	North	7.7
Touch & Go Total				**100.0**

Notes: Runway 25 has GA propeller operations only. All other percentages includes all the aircraft types.

/a/ See Figures 5.1-2 and 5.1-3.

SOURCE: San Luis Obispo County Regional Airport

TABLE 5.1-5
INM AIRCRAFT TYPES USED FOR NOISE MODELING

INM Aircraft Type	Aircraft Operations Modeled
GASEPF	Single engine fixed-pitch propeller operations
GASEPV	Single engine variable-pitch propeller operations
CNA 172	Single engine propeller operations - local pattern
BEC58P	Twin engine piston propeller operations
CNA441	Twin engine turboprop operations
EMB 120	Twin engine commuter (Brasilia) operations
SF340	Twin engine commuter (Saab 340) operations
MU 3001	Typical business jet operations
LEAR35	Typical business jet operations
CL601	Regional Jet (Canadair/Embraer) operations
DHC8	Twin engine commuter (Q400) operations - large
R22	Typical helicopter operations

/a/ This is a composite of GASEPV and GASEPF aircraft.

SOURCES: FAA Integrated Noise Model, Version 6.1; ESA, 2005.

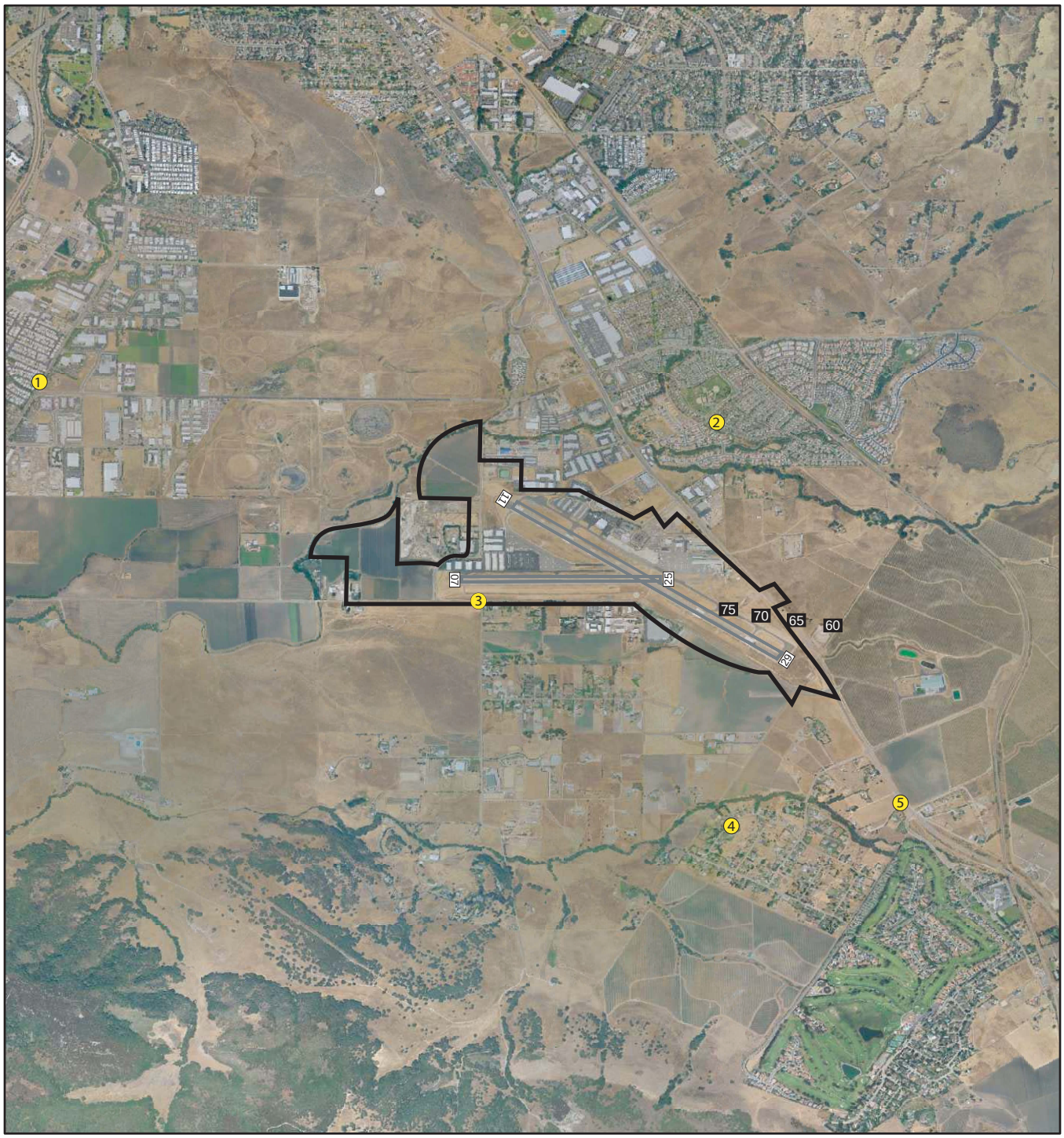
to surrounding areas. Table 5.1-6 summarizes calculated aircraft CNEL values at the five monitoring sites. As shown in Figure 5.1-5, no residents are within the 65 CNEL noise contour. The calculated aircraft CNEL values shown in Table 5.1-6 will serve as a basis for comparison in later sections of this EA/EIR that discuss the potential changes in noise exposure that could result with implementation of the Proposed Action. For that reason, the monitoring sites are hereinafter referred to as noise monitoring/reference grid point locations.

TABLE 5.1-6
AIRCRAFT CNEL VALUES AT NOISE MONITORING/REFERENCE GRID POINT LOCATIONS UNDER THE BASELINE CONDITIONS (2004)

Site/a/	2004 Aircraft CNEL, dB
1	51.8
2	46.1
3	54.6
4	48.2
5	53.3

/a/ See Figure 5.1-1 for reference site locations.

SOURCE: ESA, 2005



AERIAL SOURCE: Airphoto USA, 8-01-03

0 2600
Foot

1 Noise Monitoring Sites

San Luis Obispo County
Regional Airport (Sbp) Boundary

Note: The 60 CNEL noise contour is provided for informational purposes only and is not used to determine impact significance.

SOURCE: ESA Airports, 2005

San Luis Obispo County Regional Airport Master Plan Update EA-EIR . 203092

Figure 5.1-4
Baseline Conditions (2004)
CNEL Noise Contours at SBP

Existing Non-Aircraft Noise Levels

There are three principal sources of noise in the SBP environs and a number of minor sources. The most obvious principal source is aircraft noise. Depending upon the location of a specific receiver, aircraft noise may be mostly caused by aircraft in flight (i.e., landings, takeoffs, pattern operations) or aircraft moving about the airfield. However, like most urban or suburban areas, surface traffic noise, which is the second principal source, is pervasive in the Airport environs. The third principal source is railroad noise. Minor sources of noise in the Airport environs include commercial uses, agricultural operations and everyday sources associated with human activity, such as barking dogs and residential maintenance activities.

Surface Traffic Noise Levels

There are several major roadways that pass adjacent to the Airport or that are in the areas affected by existing aircraft noise levels of approximately 60 CNEL or greater. Those roadways are U.S. Highway 101, State Route 227 (Broad Street/Edna Road), South Higuera Street, and Tank Farm Road. There are many other smaller (i.e., less traveled) roadways that are located in the Airport environs that do not generate noise levels exceeding 60 DNL at typical residential setbacks.

Railroad Noise Levels

The Union Pacific Railroad (formerly the Southern Pacific Transportation Co.) mainline is located about ½ miles east of the Airport. The mainline track passes directly beneath the extended centerline of Runway 11-29 southeast of the Airport. According to the San Luis Obispo County Noise Element (1991), estimated future railroad operations include 10 freight and 4 passenger train movements per day.

Based upon noise measurements reported by the Noise Element, maximum noise levels generated by passing trains in the San Luis Obispo area ranged from approximately 78 to 104 dBA at 50 feet from the tracks, depending upon whether or not warning horns were in use. The approximate distances from the center of the track to the 60 DNL contour, are 352 feet in areas removed from grade crossings and 525 feet in areas within 1,000 feet of a grade crossing.

5.1.3. Impacts and Mitigation

This section presents the noise impacts of the Proposed Action for the future years of 2010 and 2023. The impacts are quantified using the descriptors described previously (i.e., CNEL and SEL). It was assumed that the temporal distribution of operations would remain constant throughout the planning period.

5.1.3.1. No Action Alternative

Aircraft Noise Levels

The No Action Alternative assumes that the airfield configuration would remain unchanged. Runway 11 would *not* be extended to accommodate future passenger loads by the larger regional jet aircraft such as the Canadair 601 or the Embraer 175 or Embraer 190.

Aircraft noise levels resulting from the 2010 No Action Alternative were analyzed using Version 6.1 of the INM. All inputs to the INM were the same as for preparation of the Baseline Conditions (2004) CNEL contours except for the changes in aircraft volume and fleet mix reported in Table 5.1-2.

Figure 5.1-5 shows the CNEL contours for the No Action Alternative for the year of 2010. Table 5.1-7 reports the aircraft CNEL values for the noise monitoring/ reference grid point locations.

Surface Traffic Noise Levels

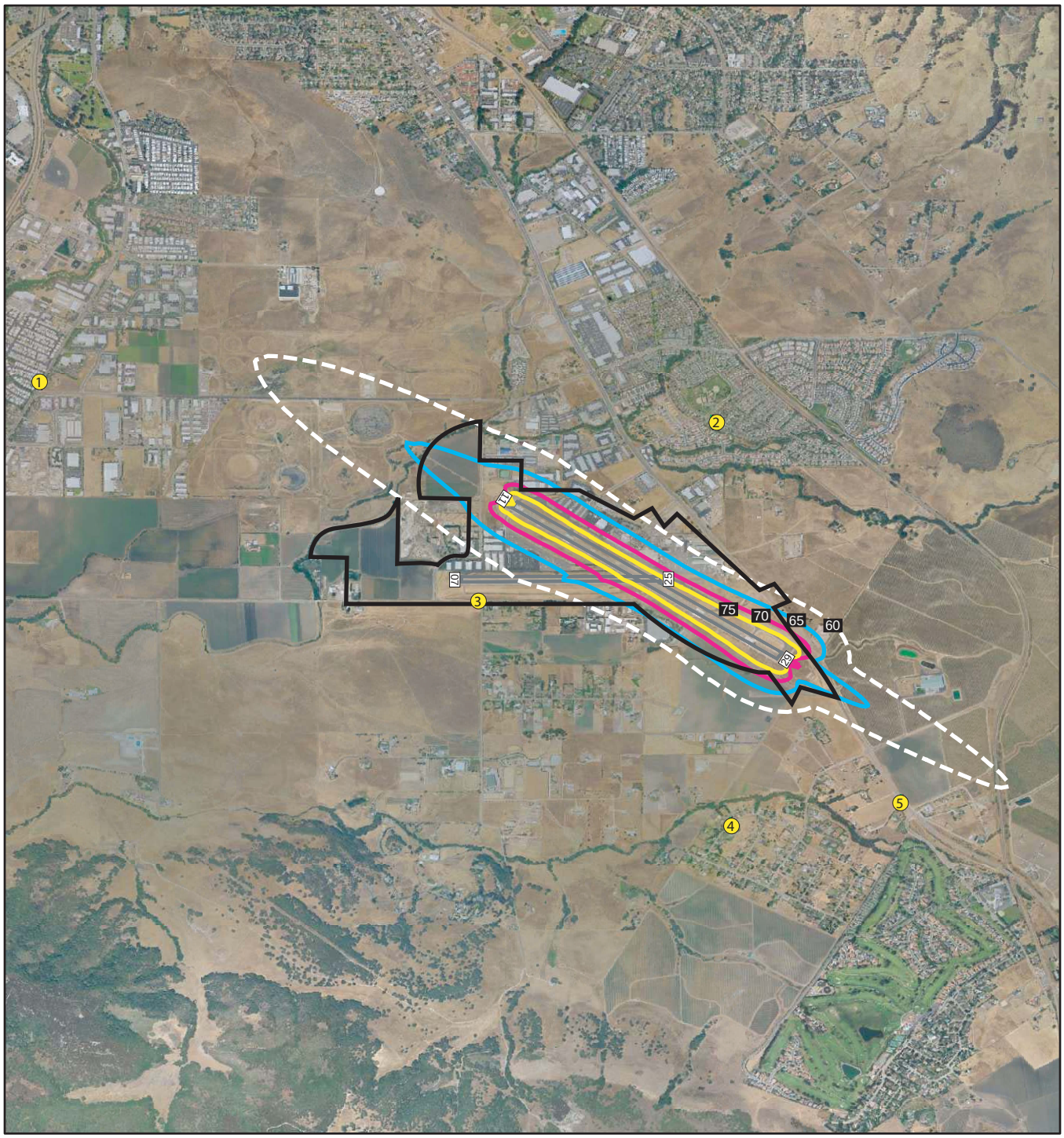
The increase in traffic volumes associated with the Airport would correspond to the increase in activity forecast for the Airport. Along State Route 227 between Tank Farm Road and Aero Drive, which is the roadway segment that would have the greatest increase in vehicle trips resulting from increases in Airport activity, there would be an increase of approximately 66 vehicle trips during the p.m. peak hour. This represents about three percent of the vehicle trips along State Route 227 during the p.m. peak hour.

TABLE 5.1-7
AIRCRAFT CNEL VALUES AT NOISE MONITORING/REFERENCE GRID POINT LOCATIONS UNDER THE NO ACTION ALTERNATIVE

	CNEL, dB
Location[/a/]	2010
1	52.1
2	46.5
3	54.9
4	48.5
5	53.6

/a/ Please refer to Figure 5.1-1 for reference site locations.

SOURCE: ESA, 2005



AERIAL SOURCE: Airphoto USA, 8-01-03

0 2600
Foot

1 Noise Monitoring Sites

San Luis Obispo County Regional Airport (Sbp) Boundary

Note: The 60 CNEL noise contour is provided for informational purposes only and is not used to determine impact significance.

SOURCE: ESA Airports, 2005

San Luis Obispo County Regional Airport Master Plan Update EA-EIR . 203092

Figure 5.1-5
No Action Alternative
2010 CNEL Noise Contours at SBP

5.1.3.2. Proposed Action

Phase I (2005 – 2010)

Impact 5.1-1: Changes in Aircraft Noise

The Proposed Action assumes that Runway 11 would be extended by 800 feet *to the west* to accommodate existing passenger loads by the regional jet aircraft that currently operate at SBP, such as the Canadair 601. According to airline representatives, these aircraft types could potentially depart from SBP fully loaded on warm days with the proposed runway extension. Aircraft noise levels resulting from the Proposed Action were analyzed for the future years using Version 6.1 of the INM. Inputs to the INM were the same as for preparation of the Baseline Conditions (2004) CNEL contours except for the changes in aircraft volume and fleet mix reported in Table 5.1-2 and the following factors:

- Aircraft departing to the east on Runway 11 would begin their takeoff roll 800 feet west of the present end of Runway 11.
- The maximum takeoff weight of Canadair 601 could be accommodated. This factor was accounted for in noise modeling by using an INM takeoff profile that approximates the maximum gross takeoff weight for the Canadair aircraft type. The CL601 INM aircraft type was used to model noise from regional jets.

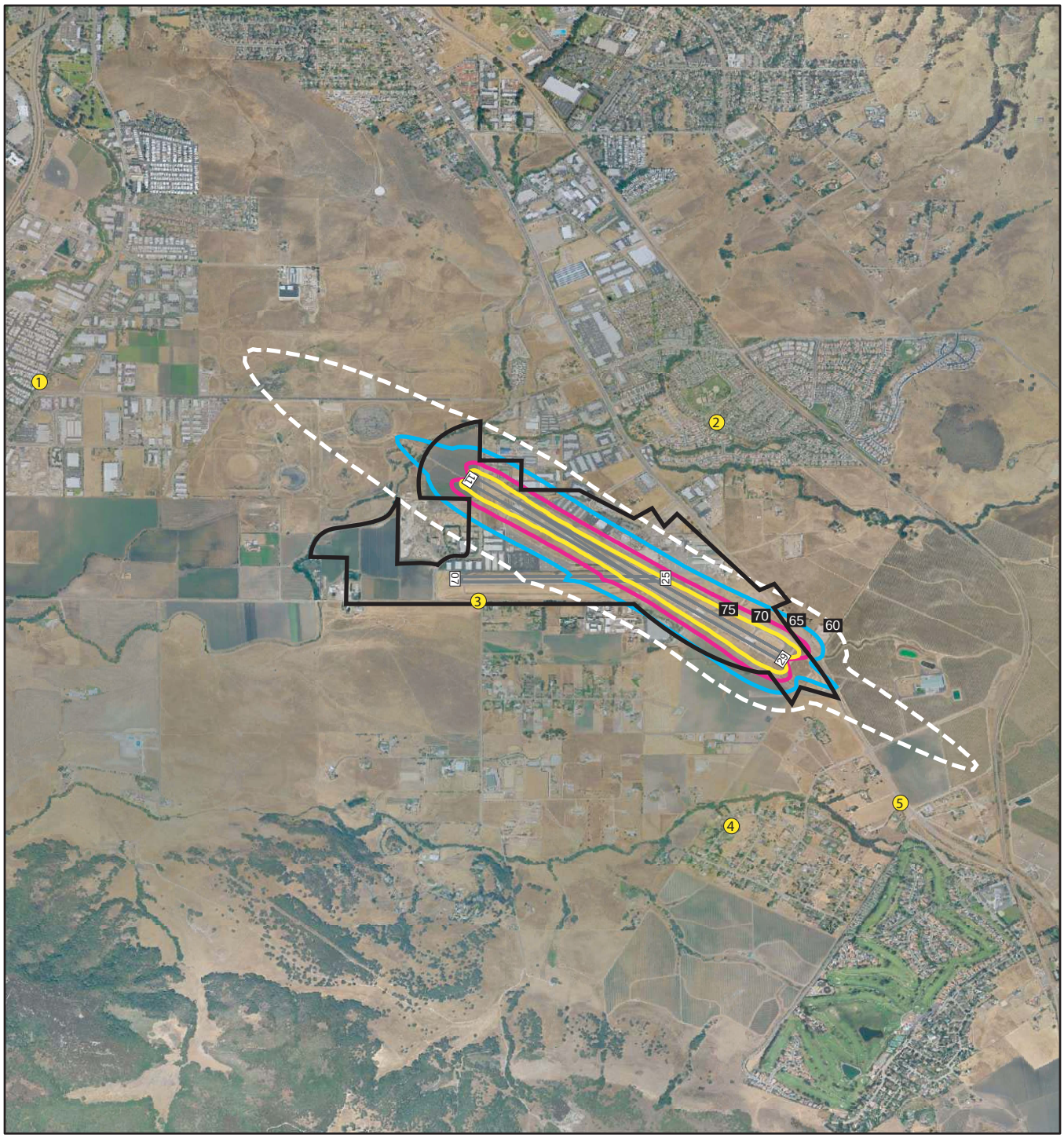
Figure 5.1-6 shows the CNEL contours for the Proposed Action for the year 2010.

NEPA Analysis

Figure 5.1-7 shows the changes in the 2010 CNEL contours for the Proposed Action compared to the 2010 CNEL contours for the No Action Alternative. Approximately 1.4 additional acres would be within the CNEL contour under the Proposed Action compared to the No Action Alternative in 2010. No noise-sensitive land uses exist within this area where this increase in noise would occur. Therefore, the number of residents within the 65 CNEL noise contour would be zero, which is the same as the number of residents within the 65 CNEL noise contour under the No Action Alternative.

Table 5.1-8 reports changes in aircraft CNEL values for typical aircraft departures at the noise monitoring/reference grid point locations that would be expected under the Proposed Action. These CNEL changes are the results of an 800-foot displacement of where aircraft departing from Runway 11 begin their takeoff roll and changes in the takeoff profile assumed for the Canadair 601 to account for maximum takeoff weight.

As shown in Table 5.1-8, no significant increases would occur in cumulative (CNEL) noise exposure at the reference grid point locations under the Proposed Action. Therefore, this is a less-than-significant impact.



AERIAL SOURCE: Airphoto USA, 8-01-03

0 2600
Foot

1 Noise Monitoring Sites

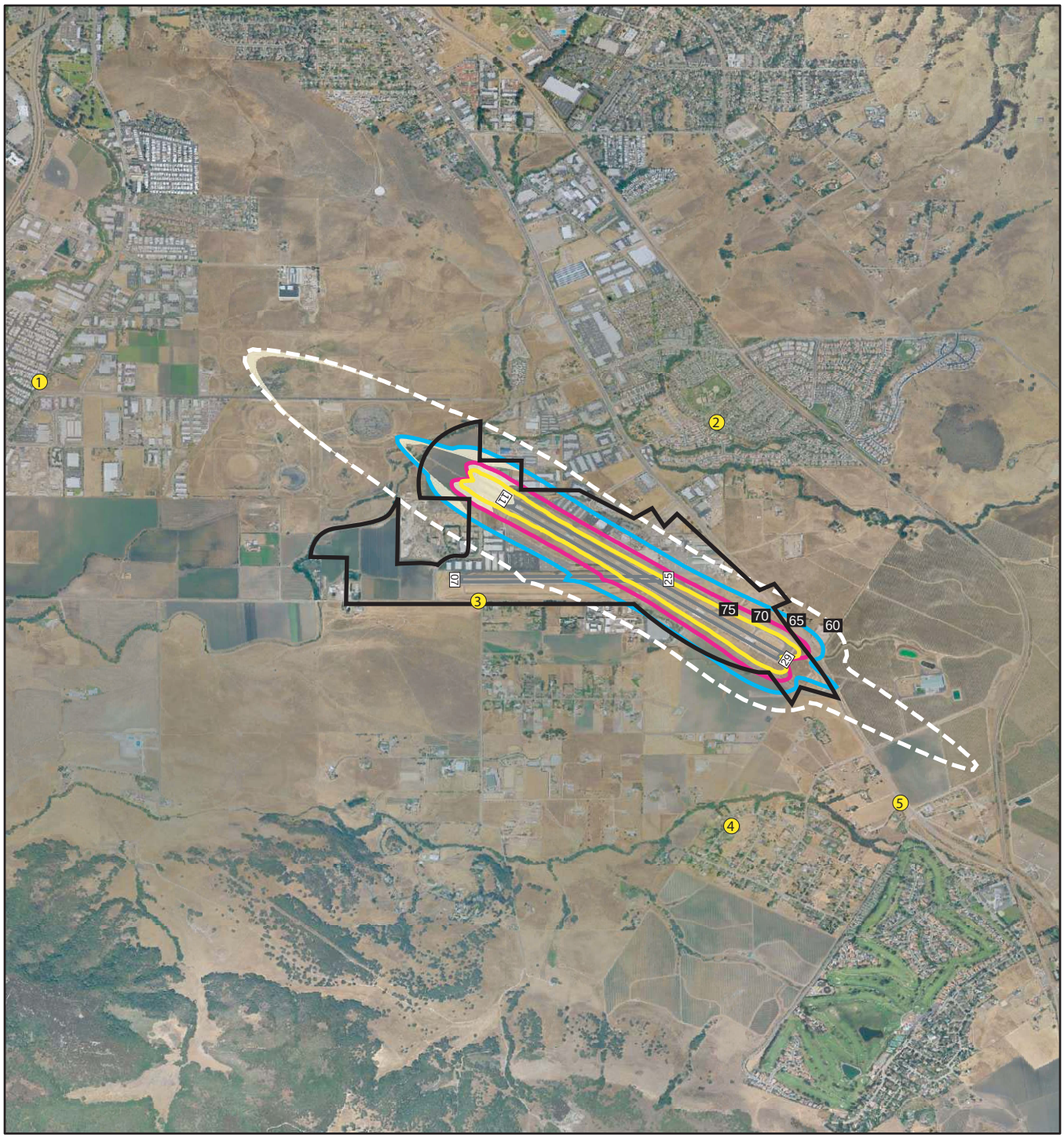
San Luis Obispo County
Regional Airport (Sbp) Boundary

Note: The 60 CNEL noise contour is provided for informational purposes only and is not used to determine impact significance.

SOURCE: ESA Airports, 2005

San Luis Obispo County Regional Airport Master Plan Update EA-EIR . 203092

Figure 5.1-6
Proposed Action
CNEL Noise Contours at SBP



AERIAL SOURCE: Airphoto USA, 8-01-03

1 Noise Monitoring Sites

San Luis Obispo County Regional Airport (Sbp) Boundary

Area of Noise Increase Compared to No Action Alternative

0 2600

Foot

Note: The 60 CNEL noise contour is provided for informational purposes only and is not used to determine impact significance.

SOURCE: ESA Airports, 2005

San Luis Obispo County Regional Airport Master Plan Update EA-EIR . 203092

Figure 5.1-7

Comparison of 2010 CNEL Noise Contours for the Proposed Action with the 2010 CNEL Noise Contours for the No Action Alternative

CEQA Analysis

Figure 5.1-8 shows the changes in the 2010 CNEL contours for the Proposed Action compared to the 2004 CNEL contours under the Baseline Conditions. Approximately 6.6 additional acres would be within the CNEL contour under the Proposed Action compared to the Baseline Condition in 2004. However, no noise-sensitive land uses or residents exist within this area where this increase in noise would occur.

Table 5.1-8 reports changes in aircraft CNEL values for typical aircraft departures at the noise monitoring/reference grid point locations that would be expected under the Proposed Action. These CNEL changes are the results of an 800-foot displacement in where aircraft departing from Runway 11 begin their takeoff roll and changes in the takeoff profile assumed for the Canadair 601 to account for maximum takeoff weight.

As shown in Table 5.1-8, no significant increases would occur in either cumulative (CNEL) noise exposure at the reference grid point locations under the Proposed Action compared to the Baseline Conditions. Therefore, this is a less-than-significant impact.

Mitigation Measure 5.1-1: None required.

TABLE 5.1-8
CHANGES IN AIRCRAFT CNEL VALUES AT NOISE MONITORING/REFERENCE GRID POINT LOCATIONS IN 2010 UNDER THE PROPOSED ACTION COMPARED TO THE NO ACTION ALTERNATIVE AND THE BASELINE CONDITIONS

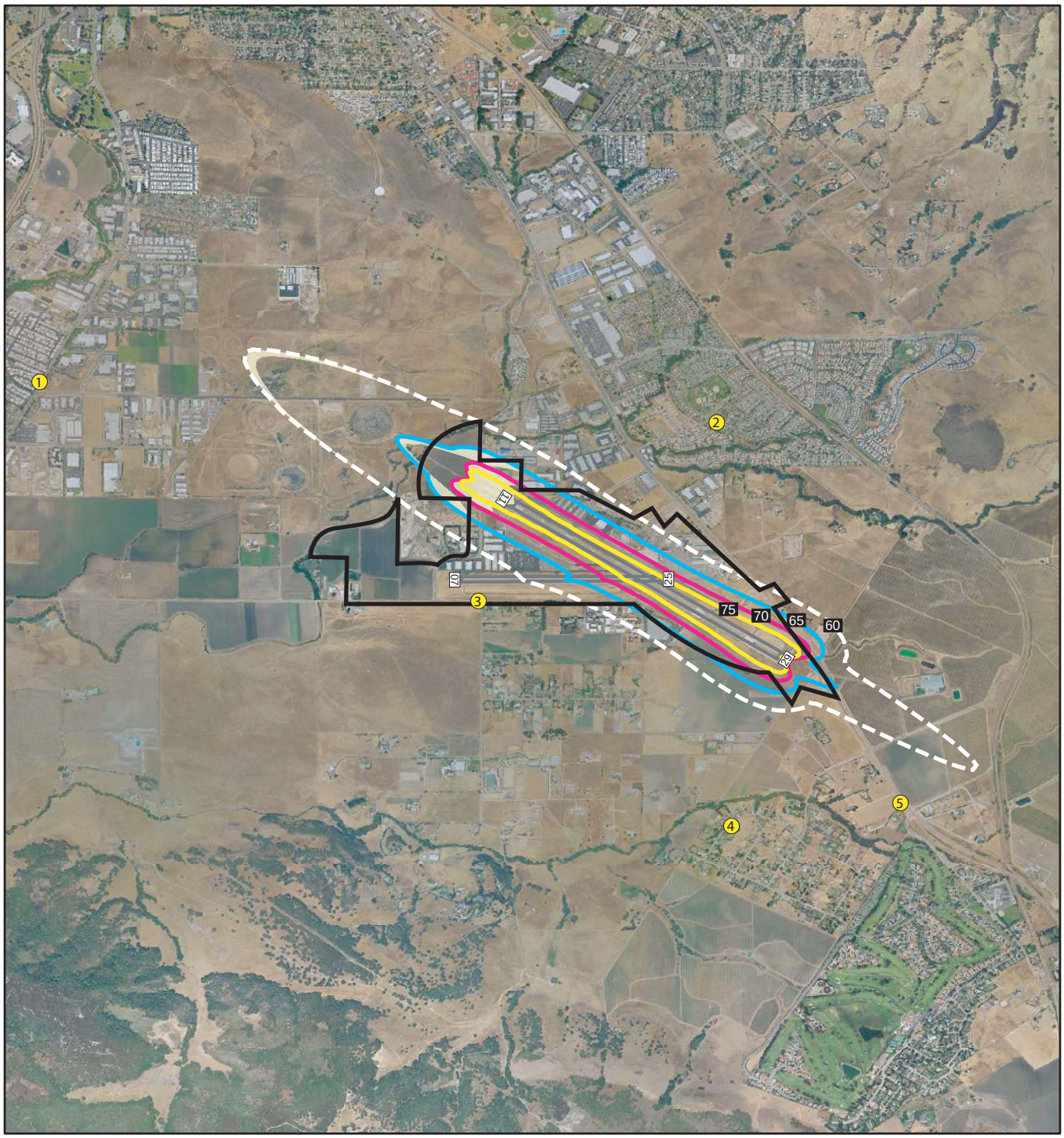
Location[/a/]	2004 Baseline Conditions	2010 Proposed Action	Change in CNEL	2010 No Action Alternative	2010 Proposed Action	Change in CNEL
1	51.8	52.3	0.5	52.1	52.3	0.2
2	46.1	46.2	0.1	46.5	46.2	-0.3
3	54.6	54.4	-0.2	54.9	54.4	-0.5
4	48.2	48.3	0.1	48.5	48.3	-0.2
5	53.3	53.3	0.0	53.6	53.3	-0.3

/a/ See Figure 5.1-1 for reference site locations.

SOURCE: ESA, 2005

Impact 5.1-2: Changes in Surface Traffic Noise (CEQA Only)

The increase in traffic volumes associated with the Airport would correspond to the increase in activity forecast for the Airport. Along State Route 227 between Tank Farm Road and Aero Drive, which is the roadway segment that would have the greatest increase in vehicle trips resulting from increases in Airport activity, there would be an increase of approximately



AERIAL SOURCE: Airphoto USA, 8-01-03

1 Noise Monitoring Sites

San Luis Obispo County Regional Airport (Sbp) Boundary

Area of Noise Increase Compared to No Action Alternative

0 2600

Foot

Note: The 60 CNEL noise contour is provided for informational purposes only and is not used to determine impact significance.

SOURCE: ESA Airports, 2005

San Luis Obispo County Regional Airport Master Plan Update EA-EIR . 203092

Figure 5.1-8

Comparison of 2010 CNEL Noise Contours for the Proposed Action with the 2010 CNEL Noise Contours for the No Action Alternative

66 vehicle trips during the p.m. peak hour. This represents about three percent of the vehicle trips along State Route 227 during the p.m. peak hour.

CEQA Analysis

Compared to the Baseline Conditions, the Proposed Action would result in an increase in traffic volumes on State Route 227 of about three percent. This is substantially less than the doubling in traffic volumes that would be required for a 3.0 dB increase to occur on roadways in the SBP vicinity. This is a less-than-significant impact.

Mitigation Measure 5.1-2: None required.

Impact 5.1-3: Construction Noise (CEQA Only)

During the construction phases of the Proposed Action, noise from construction activities would occur. The closest noise-sensitive uses from any proposed construction location would be residential areas to the south and west of the Airport. Construction equipment generates single-event noise levels in the range of 70 to 90 dBA at a 50-foot distance from the source and has the potential for disturbing surrounding land uses when equipment is operating in their vicinity. However, noise levels from a point source, such as construction equipment, decrease at the rate of approximately 6 dB with each doubling of distance from the source. Therefore, at a distance of 1,000 feet, the resulting construction equipment noise levels would range from 44 dBA to 64 dBA. In some cases, intervening buildings or topography would further reduce noise at noise-sensitive locations. These are exterior noise levels, and interior noise levels typically would be 15 to 25 dB lower.

CEQA Analysis

The construction noise that would occur under the Proposed Action would result in noise levels that are comparable to common noise events that occur in any residential neighborhood. Therefore, this is a less-than-significant impact.

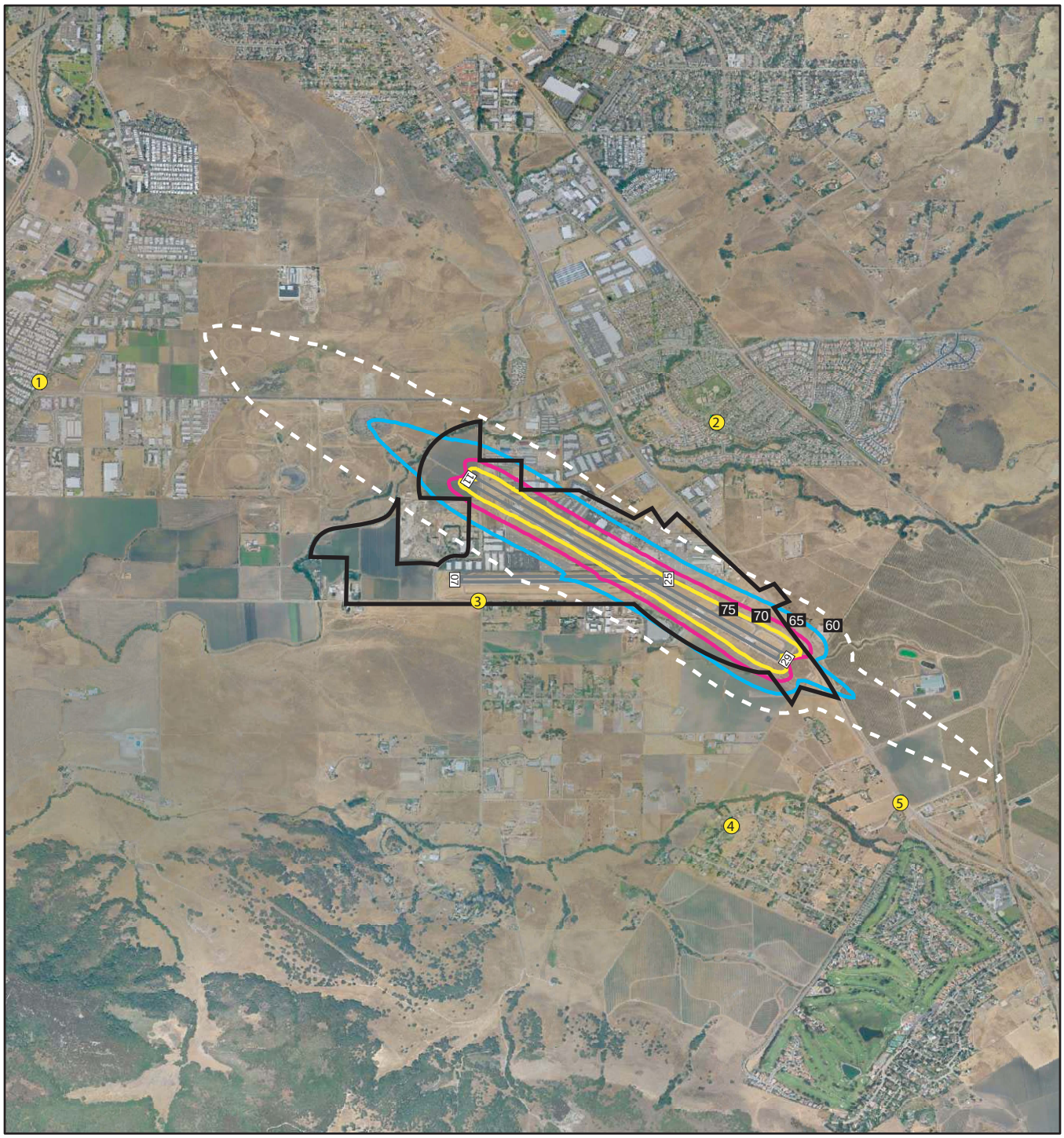
Mitigation Measure 5.1-3: None required.

Phase II (2011 – 2023)

Impact 5.1-1: Changes in Aircraft Noise

Under the Proposed Action, it is assumed that operations would continue to increase with the growth of passenger demand at the Airport. Figure 5.1-9 shows the CNEL contours for the Proposed Action in 2023.

Consistent with the Master Plan projections, there is a gradual change over the planning period from smaller (less than 35 seats) to larger (36 seats or more) commuter aircraft and regional jets. Also, it is assumed by the year 2023 that all of the passenger demand at SBP will be served by



AERIAL SOURCE: Airphoto USA, 8-01-03

0 2600
Foot

1 Noise Monitoring Sites

San Luis Obispo County
Regional Airport (Sbp) Boundary

Note: The 60 CNEL noise contour is provided for informational purposes only and is not used to determine impact significance.

SOURCE: ESA Airports, 2005

San Luis Obispo County Regional Airport Master Plan Update EA-EIR . 203092

Figure 5.1-9
Proposed Action
2023 CNEL Noise Contours at SBP

Regional Jet aircraft. It was assumed that the general aviation fleet mix would remain the same through the planning period.

CEQA Analysis

Figure 5.1-10 shows the changes in the 2023 CNEL contours for the Proposed Action compared to the 2004 CNEL contours under the Baseline Conditions. Approximately 39.9 additional acres would be within the CNEL contour under the Proposed Action compared to the Baseline Condition in 2004. No noise-sensitive land uses exist within this area where this increase in noise would occur. Therefore, no residents would be within the 65 CNEL noise contour in 2023.

Table 5.1-9 reports changes in aircraft CNEL values for typical aircraft departures at the noise monitoring/reference grid point locations that would be expected under the Proposed Action and compares these CNEL values with the CNEL values under the Baseline Conditions (2004). Similar to the Proposed Action under Phase I, these CNEL changes are the results of an 800-foot displacement in where aircraft departing from Runway 11 begin their takeoff roll and changes in the takeoff profile assumed for the Canadair 601 to account for maximum takeoff weight.

As shown in Table 5.1-10, no significant increases would occur in CNEL noise exposure at the reference grid point locations under the Proposed Action compared to the existing (2004) conditions. Therefore, this is a less-than-significant impact.

Mitigation Measure 5.1-1: None required.

TABLE 5.1-9
CHANGES IN AIRCRAFT CNEL VALUES AT NOISE MONITORING/REFERENCE GRID POINT LOCATIONS IN 2023 UNDER THE PROPOSED ACTION COMPARED TO THE BASELINE CONDITIONS

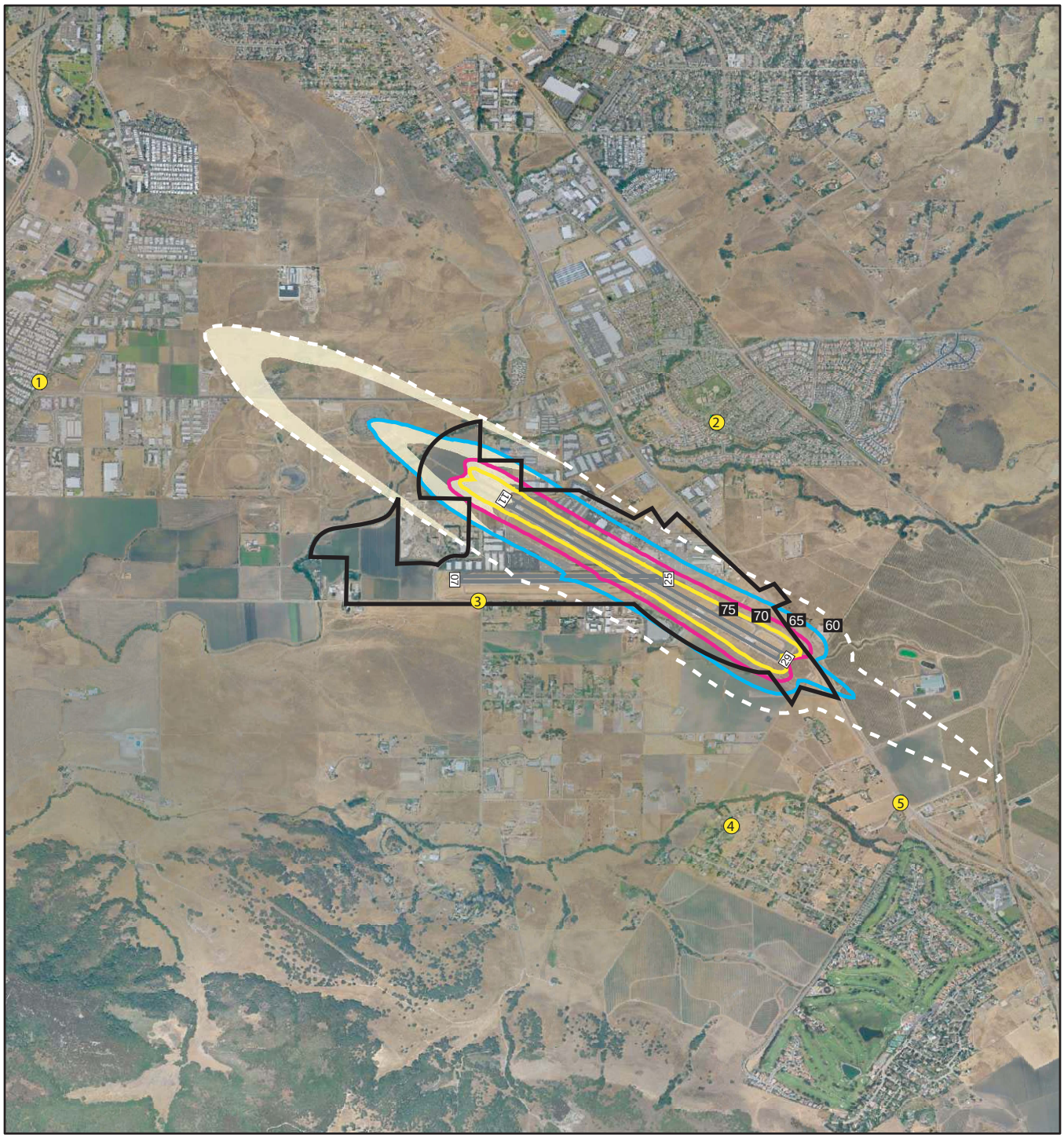
Location/a/	2004 Baseline Conditions	2023 Proposed Action	Change in CNEL
1	51.8	53.4	1.6
2	46.1	46.8	0.7
3	54.6	54.9	0.3
4	48.2	49.0	0.8
5	53.3	54.2	0.9

/a/ See Figure 5.1-1 for reference site locations.

SOURCE: ESA, 2005

Impact 5.1-2: Changes in Surface Traffic Noise

The increase in traffic volumes associated with the Airport would correspond to the increase in activity forecast for the Airport. Along State Route 227 between Tank Farm Road and Aero Drive, which is the roadway segment that would have the greatest increase in vehicle trips resulting from increases in Airport activity, there would be an increase of approximately



AERIAL SOURCE: Airphoto USA, 8-01-03

0 2600
Foot

1 Noise Monitoring Sites

San Luis Obispo County Regional Airport (Sbp) Boundary

Area of Noise Increase Compared to Baseline Conditions

Note: The 60 CNEL noise contour is provided for informational purposes only and is not used to determine impact significance.

SOURCE: ESA Airports, 2005

Figure 5.1-10

Comparison of 2023 CNEL Noise Contours for the Proposed Action with the 2004 CNEL Noise Contours for the Baseline Conditions

66 vehicle trips during the p.m. peak hour. This represents about three percent of the vehicle trips along State Route 227 during the p.m. peak hour.

CEQA Analysis

Compared to the Baseline Conditions, the Proposed Action would result in an increase in traffic volumes on State Route 227 of about three percent. This is substantially less than the doubling in traffic volumes that would be required for a 3.0 dB increase to occur on roadways in the SBP vicinity. This is a less-than-significant impact.

Mitigation Measure 5.1-2: None required.

Impact 5.1-3: Construction Noise

During the construction phases of the Proposed Action, noise from construction activities would occur. The noise impacts would be similar to those described for the construction of the Phase I project components.

CEQA Analysis

The construction noise that would occur under the Proposed Action would result in noise levels that are comparable to common noise events that occur in any residential neighborhood. Therefore, this is a less-than-significant impact.

Mitigation Measure 5.1-3: None required.

5.1.4. Summary of Impacts

Table 5.1-10 summarizes noise impacts as they relate to implementation of Phase I and Phase II of the Proposed Action.

For Phase I of the Proposed Action, the number of residents within the 65 CNEL noise contour would be the same (0 residents) as compared to the No Action Alternative. Compared to Baseline Conditions, both Phase I and Phase II of the Proposed Action would result in less-than-significant noise impacts and no mitigation is required.

TABLE 5.1-10
NOISE IMPACTS SUMMARY MATRIX

Impact	Phase I (2005-2010)		Phase II (2011-2023)
	Compared to No Action Alternative	Compared to Baseline Conditions	Compared to Baseline Conditions
Changes in Aircraft Noise	No change in number of residents (0) within 65 CNEL noise contour	LTS	LTS
Changes in Surface Traffic Noise	N/A	LTS	LTS
Construction Noise	N/A	LTS	LTS

LTS = Less than significant
N/A = Not Applicable
S = Significant

SOURCE: ESA, 2006

5.2 Compatible Land Use

5.2.1 Background and Methodology

This section describes existing land use conditions in the vicinity of SBP and potential development allowed under existing zoning and comprehensive plan designations. Various federal, state, regional, and local agency plans and regulations were reviewed for applicability. Section 5.1, Noise of this document was also reviewed in the context of land use compatibility.

5.2.1.1 Regulatory Context

For a discussion of the regulatory context for compatible land use, see Appendix O.

5.2.1.2 Thresholds of Significance

NEPA Thresholds

Determining significance under NEPA is guided by FAA Order 1050.1E, *Environmental Impacts: Policies and Procedures.* Section 5.1, Noise analyzed Community Noise Equivalent Level (CNEL) values at five locations that represent sensitive land uses that are closest to SBP. In accordance with FAA Order 1050.1E, for sensitive land use types (i.e., residences, churches, schools), a noise impact is significant if the noise level increases 1.5 dB and the resultant noise level is above 65 CNEL. Since the analysis in Section 5.1, Noise found the impacts to be less than significant in all cases this issue will not be discussed further.

Other sections in this document that discuss related land use issues include Section 5.3, Social Impacts; Section 5.5, Air Quality; Section 5.7, Department of Transportation Act Section 4(f); Section 5.8, Historic, Architectural, Archaeological, and Cultural Resources; Section 5.10, Endangered and Threatened Species of Flora and Fauna; Section 5.11, Wetlands; and Section 5.18, Light Emissions. These issues will not be discussed further in this section.

CEQA Thresholds

The CEQA *Guidelines* state that a project may be deemed to have a significant effect if it were to conflict with any applicable land use plan, policy, or regulations of an agency with jurisdiction over the project. The CEQA *Guidelines* also state that a project may be deemed to have a significant effect if it were to conflict with any applicable habitat conservation plan or natural community conservation plan; these impacts are discussed in Section 5.10, Endangered and Threatened Species of Flora and Fauna.

5.2.1.3 Methodologies

This section evaluates consistency with existing City, County, and Airport plans and policies and federal regulations, and the Airport's potential effects on neighboring residences and businesses. In the case of FAA Order 5200.5A *Waste Disposal Sites on or near Airports*, the nearest disposal site (Cold Canyon Landfill) is located about five miles south of SBP. Since the Airport and

landfill are separated by considerably more than the 10,000 foot minimum, and the Proposed Action will not change this situation, this issue will not be discussed further.

5.2.2 Baseline Conditions

5.2.2.1 Existing Airport Land Use

For a discussion of existing land uses, see Section 4.2 of this EA/EIR. Under the San Luis Obispo County General Plan, the land use designation for SBP is *Public Facility*. The *Public Facility* land use category is intended only for lands owned by public agencies. Figure 5.2-1 shows the County's General Plan (*San Luis Obispo Area Plan*) land use designations for SBP and areas surrounding the Airport. The Airport is located within the San Luis Obispo Urban Reserve Area and the City of San Luis Obispo has designated SBP as *Facility* under the Airport Area Specific Plan (AASP) as shown in Figure 5.2-2.

Airside Land Uses

Airside facilities include two runways, ten taxiways, and airport lighting (identification lighting, runway and taxiway lighting, and approach lighting). A more detailed description of existing airside facilities is provided in Section 2.1.2, Existing Airport Facilities.

Landside Land Uses

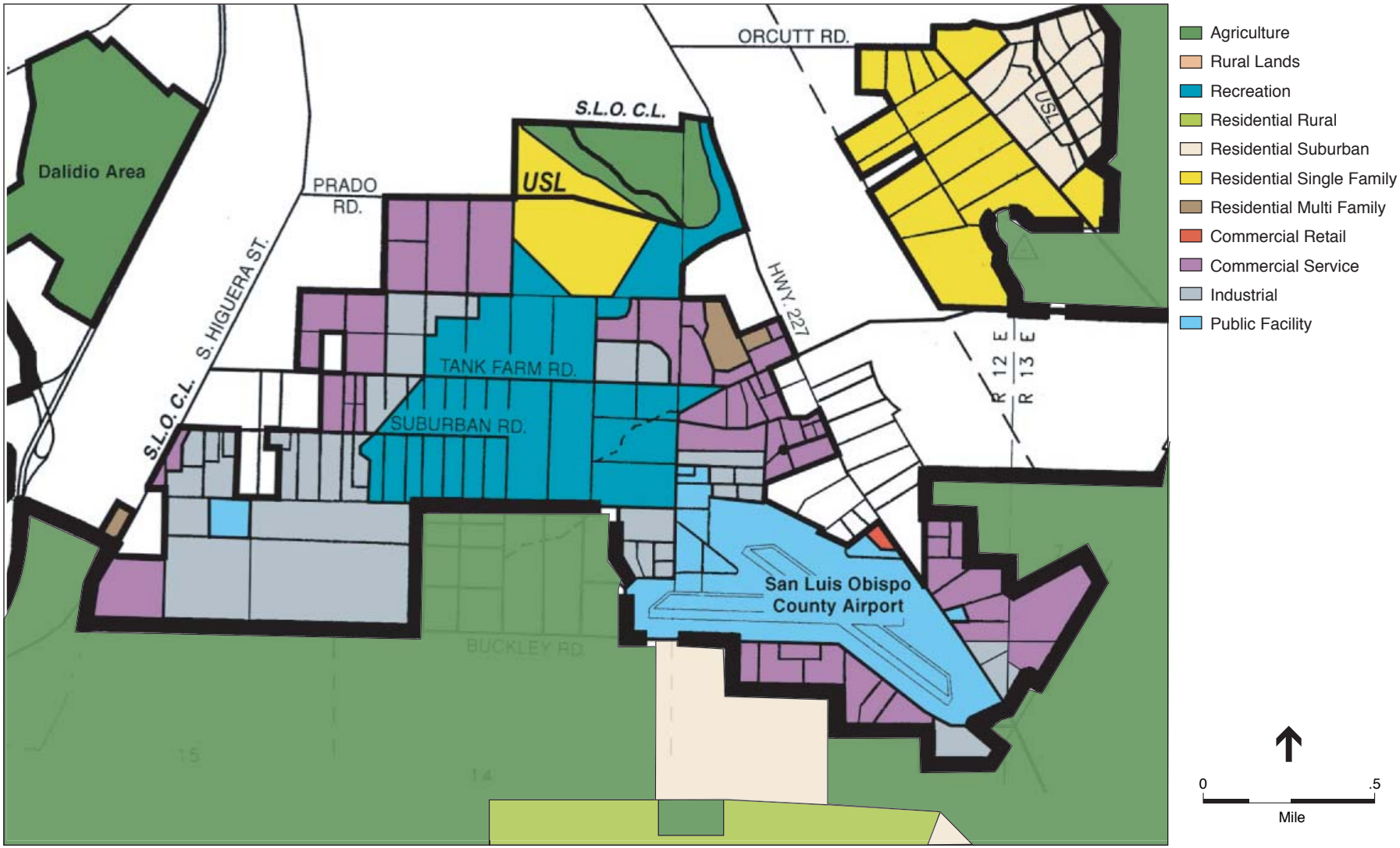
Current landside building facilities consist of a passenger terminal, surface parking lots, an airport traffic control tower, a restaurant, general aviation facilities (hangars, fixed base operators), and an ARFF. A more detailed description of existing landside facilities is provided in Section 2.1.2, Existing Airport Facilities.

5.2.2.2 Land Use Designations and Existing Land Uses

San Luis Obispo County

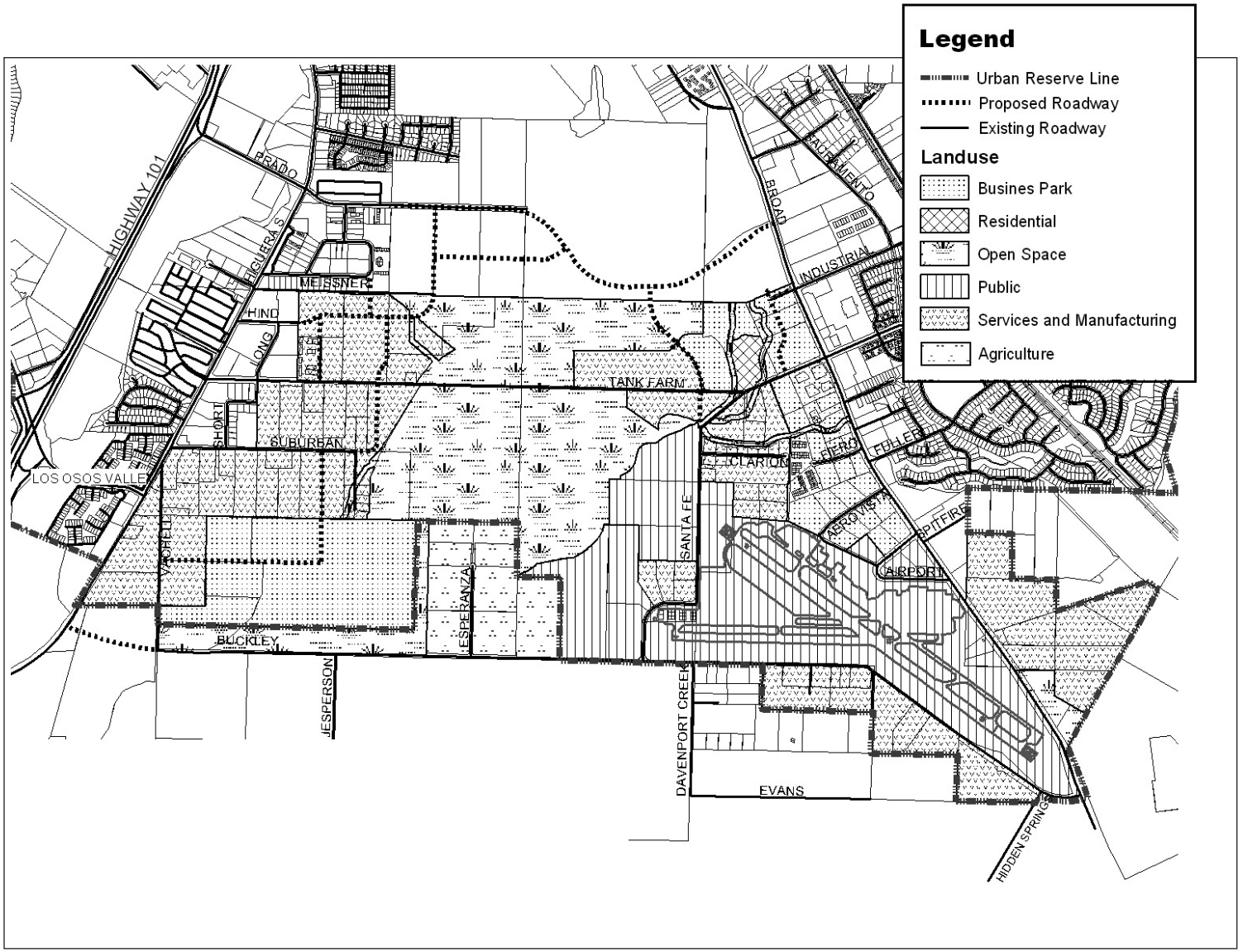
The Airport and land immediately surrounding the Airport are generally under County jurisdiction. However, the Airport and the surrounding area are within the San Luis Obispo AASP and the City plans to annex much of the area, as discussed below. The County designates land immediately adjacent to the Airport as either *Commercial Service* or *Industrial*. One parcel at the intersection of SR 227 and Aero Drive is designated *Commercial Retail* and land to the northwest is designated *Recreation*.

Existing land use is generally consistent with the land use designations. Development directly north of the Airport, on either side of Tank Farm Road, is light industrial, commercial, and residential, including a mobile home park. Development east of the Airport along SR 227 includes commercial/light industrial businesses, as well as a winery and vineyard, single family residences, a church, and a driving range. Much of the land to the south is undeveloped, but is being farmed; developed areas include industrial and commercial uses south of Buckley Road, with single-family residences extending from Thread Lane to Davenport Creek Road. Agricultural



SOURCE: County of San Luis Obispo, San Luis Obispo Area Plan

Figure 5.2-1
San Luis Obispo County General Plan Land Use Designations in the Vicinity of SBP



SOURCE: City of San Luis Obispo, Airport Area Specific Plan

Figure 5.2-2
City of San Luis Obispo Airport Area Specific Plan Land Use Designations in the Vicinity of SBP

activities such as row crops and light agricultural businesses also occur along Buckley Road. Development to the west includes light industrial activities, commercial businesses, as well as some farming along Santa Fe Road.

City of San Luis Obispo

Although SBP is currently under the County's jurisdiction, the Airport vicinity lies within the City of San Luis Obispo Urban Reserve Area. The City has identified this area for future urban expansion as described in the AASP. The City recently adopted the AASP after it was modified and determined by the ALUC to be consistent with the ALUP. Among the changes were new policies for Airport compatibility, including identifying all County land around the Airport as *Public* and meeting the open space requirements of the ALUP. Besides designating the Airport and County-owned properties as *Public,* the AASP designates land immediately to the southeast and southwest as *Services and Manufacturing*, and a small parcel to the southeast as *Open Space*. Land to the northeast is designated *Services and Manufacturing Business Park.* The Chevron Tank Farm property is designated *Open Space* and a small amount of property to the northwest is designated *Agriculture.* The AASP does not designate any additional land for development. The City's next step will be to rezone the land within its jurisdiction and pre-zone unincorporated properties. Existing land use is described above under the discussion of San Luis Obispo County Land Uses.

5.2.2.3 County and City Plans

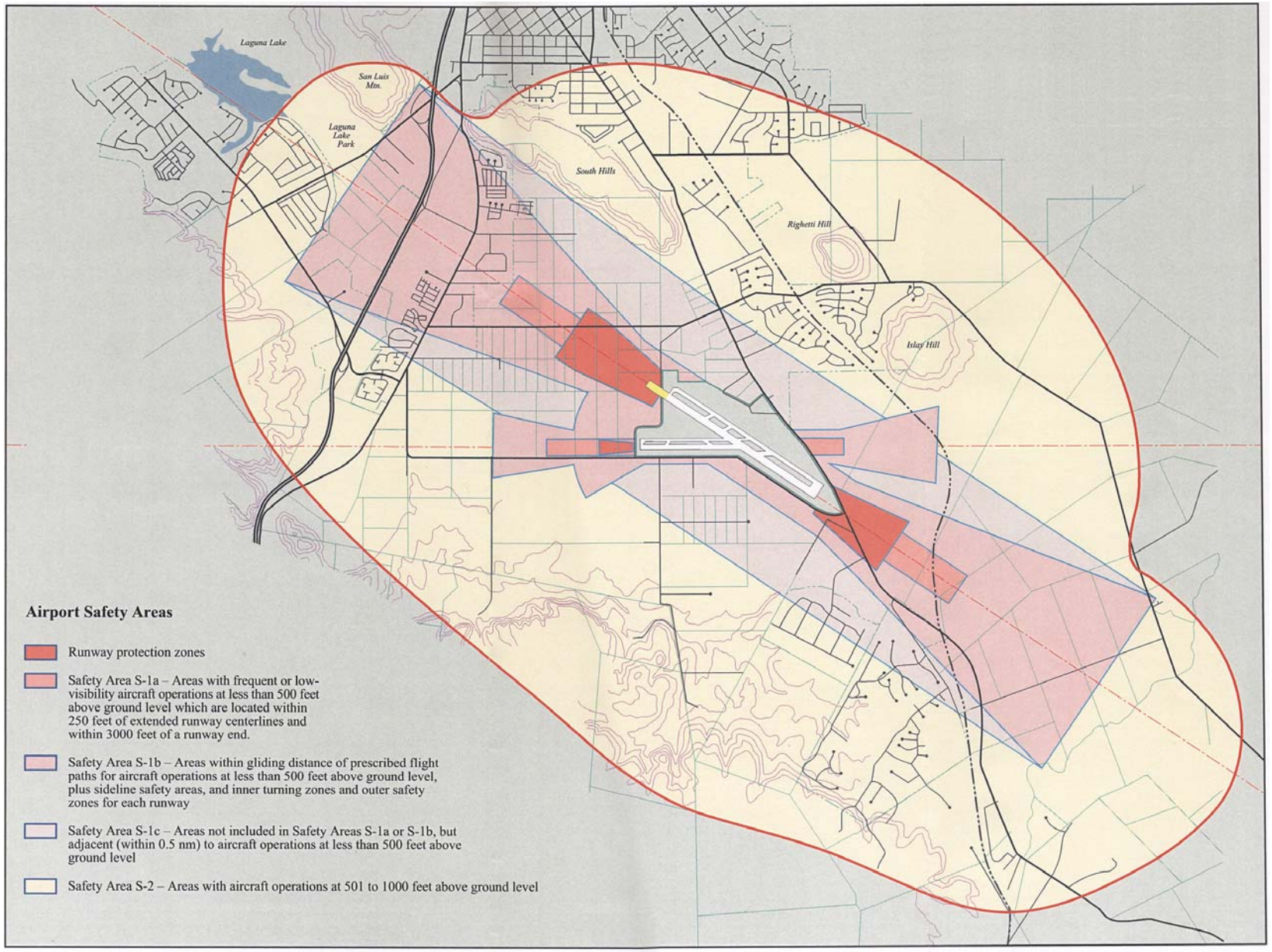
Airport Land Use Plan

The County's ALUP, amended in May, 2005, identifies five Aviation Safety Areas. These areas are delineated based on an assessment of aviation risk and are shown in Figure 5.2-3. Land uses are permitted in each area based on compatibility and proximity to Airport runways and aircraft flight paths. The five Aviation Safety Areas at SBP are summarized below:

- Runway Protection Zones (RPZ) – Areas immediately adjacent to the ends of each active runway, within which the level of aviation safety risk is very high and within which, consequently, structures are prohibited and human activities are restricted to those which require only very low levels of occupancy. The size and configuration of the Runway Protection Zones are specified by FAA regulations. The Runway Protection Zones are referred to as the "clear zones" for each runway.

    - Safety Area S-1a– Areas with frequent or low-visibility aircraft operations at less than 500 feet above ground level which are located within 250 feet of extended runway centerlines and within 3,000 feet of runway end.

    - Safety Area S-1b – Areas within gliding distance of prescribed flight paths for aircraft operations at less than 500 feet above ground level, plus sideline safety areas, and inner turning zones and outer safety zones for each runway.



SOURCE: San Luis Obispo County Regional Airport Land Use Plan, 2004

San Luis Obispo County Regional Airport Master Plan Update EA-EIR . 203092

Figure 5.2-3
Aviation Safety Areas

- Safety Area S-1c – Areas not included in Safety Areas S-1a or S-1b, but adjacent (within 0.5 nm) to aircraft operations at less than 500 feet above ground level.

- Safety Area 2 – Areas with aircraft operations at 501 to 1,000 feet above ground level.

Generally, land uses surrounding SBP are compatible with Airport activities and do not conflict with Aviation Safety Areas. However, several incompatible uses exist, including single-family residences and a small church. These incompatible land uses are identified in Table 5.2-1.

TABLE 5.2-1
EXISTING INCOMPATIBLE LAND USES WITHIN AVIATION SAFETY AREAS

Incompatible Land Use	Aviation Safety Area(s)	Location
Agricultural		
Farm equipment and supplies	S-1b, S1-c	South of Runway 7
Vineyards and other staked crops	RPZ & S-1a	East of Runway 25 Southeast of Runway 29
Cultural, Educational, and Recreational		
Church	RPZ	North of Runway 11/29
Manufacturing and Processing		
Hazardous, corrosive, or flammable chemicals	RPZ, S-1a	West of Runway 11 Northwest of Runway 7
Other manufacturing and processing	RPZ, S-1a	West of Runway 11 Northwest of Runway 7
Residential Uses		
Single-Family Residences	S-1c S-1c S-1b, S-1c	South of Runway 7 Southwest of Runway 29 Northwest of Runway 11

SOURCES: ALUP for SBP July, 2004 and ESA

City's Airport Area Specific Plan

The recently-adopted AASP is intended to ensure that planned land uses are compatible with Airport operations and consistent with the ALUP. The City modified the AASP prior to adoption to incorporate changes requested by the ALUC. Among these changes were new policies for Airport compatibility, including identifying the Airport and nearby County-owned land as *Public* and meeting the open space requirements of the ALUP. Besides designating the Airport and County-owned land as *Public,* the AASP designates land immediately to the southeast and southwest as *Services and Manufacturing*, and a small parcel to the southeast as *Open Space*. Land to the northeast is designated *Services and Manufacturing Business Park.* The Chevron Tank Farm property is designated *Open Space* and a small amount of property to the northwest is designated *Agriculture.* The AASP does not designate any additional land for development. The AASP as adopted ensures that future land use in the vicinity is compatible with the Airport.

5.2.3 Impacts and Mitigation

5.2.3.1 No Action Alternative

Changes in On-Airport Land Uses

The No Action Alternative would have increased passenger enplanements at SBP and increased flight operations. The No Action alternative would also include additional airside and landside facilities, including a new passenger terminal, as described in Section 3.1, No Action Alternative. Existing on-Airport land uses would continue to be consistent and compatible with relevant County and City plans and policies. One component, acquiring the Filbin property, would increase compatibility by removing this incompatible use southwest of Runway 7, within Aviation Safety Areas S-1b and S-1c.

Adjacent Land Use Compatibility

Under the No Action Alternative, adjacent land use would continue as allowed under the County's *San Luis Obispo Area Plan* and the City's AASP. These plans both reflect the policies and standards of the ALUP for SBP and require consistency between new development and the ALUP. The most recent changes to the AASP ensure this consistency regardless of whether land in the vicinity remains under County jurisdiction or is annexed by the City. For less common situations, such as non-conforming land uses or major new development projects, the ALUP provides methods, policies, and procedures for working with the County or City to assess Airport compatibility.

5.2.3.2 Proposed Action

Phase I (2005–2010)

Impact 5.2-1: Changes in On-Airport Land Uses

Phase I of the Proposed Action would generate the same number of passenger enplanements at SBP, but fewer flight operations, compared to the No Action Alternative. Phase I of the Proposed Action would include additional airside and landside facilities, including extending Runway 11, 800 feet to the west, as described in Section 1.1.1, Phase I – 2010 (Proposed Near-Term Projects).

NEPA Analysis

Existing on-Airport land uses would continue to be consistent and compatible with relevant County and City plans and policies. Two components, acquiring an easement on a portion of the CB&I property and acquiring a portion of the Saes property, would increase compatibility by removing incompatible uses generally west of Runway 11 and northwest of Runway 7, within Aviation Safety Areas RPZ and S-1a. The changes in on-Airport land uses would be less than significant.

CEQA Analysis

The impacts associated with changes in on-Airport land uses would be the same as those described under the NEPA Analysis, above. Therefore, the changes in on-Airport Land Uses would be less than significant.

Mitigation Measure 5.2-1: None required.

Impact Statement 5.2-2: Adjacent Land Use Compatibility

Under Phase I of the Proposed Action adjacent land use would continue as allowed under the County's *San Luis Obispo Area Plan* and the City's AASP. These plans both reflect the policies and standards of the ALUP for SBP and require consistency between new development and the ALUP. The most recent changes to the AASP ensure this consistency regardless of whether land in the vicinity remains under County jurisdiction or is annexed by the City. For less common situations, such as non-conforming land uses or major new development projects, the ALUP provides methods, policies, and procedures for working with the County or City to assess Airport compatibility.

NEPA Analysis

As noted in the discussion of on-Airport land uses, two components, acquiring an easement on a portion of the CB&I property and acquiring a portion of the Saes property, would increase compatibility by removing incompatible adjacent land uses generally west of Runway 11 and northwest of Runway 7, within Aviation Safety Areas RPZ and S-1a. Phase I of the Proposed Action also includes several off-Airport projects, including relocating Santa Fe Road, as described in Section 1.1.1, Phase I – 2010 (Proposed Near-Term Projects). These projects would be consistent with applicable land use designations. The changes to adjacent land use compatibility would be less than significant.

CEQA Analysis

The impacts associated with adjacent land use compatibility would be the same as those described under the NEPA Analysis, above. Therefore, the adjacent land use compatibility impacts would be less than significant.

Mitigation Measure 5.2-2: None required.

Phase II (2011 – 2023)

Impact 5.2-1: Changes in On-Airport Land Uses

Phase II of the Proposed Action would generate about 84 percent more passenger enplanements at SBP, but slightly fewer flight operations, compared to Baseline Conditions due to increasing reliance on larger regional jet aircraft. Phase II of the Proposed Action would include additional airside and landside facilities, including extending Runway 7, 500 feet to the southwest, as described in Section 1.1.2, Phase II – 2023 (Proposed Long-Term Projects).

CEQA Analysis

Existing on-Airport land uses would continue to be consistent and compatible with relevant County and City plans and policies. Two components, acquiring the remainder of the CB&I and Saes properties and demolishing incompatible structures, would increase compatibility generally west of Runway 11 and northwest of Runway 7, within Aviation Safety Areas RPZ and S-1a. The changes in on-Airport Land Uses would be less than significant.

Mitigation Measure 5.2-1: None required.

Impact 5.2-2: Adjacent Land Use Compatibility

Under Phase II of the Proposed Action adjacent land use would continue as allowed under the County's *San Luis Obispo Area Plan* and the City's AASP. These plans both reflect the policies and standards of the ALUP for SBP and require consistency between new development and the ALUP. The most recent changes to the AASP ensure this consistency regardless of whether land in the vicinity remains under County jurisdiction or is annexed by the City. For less common situations, such as non-conforming land uses or major new development projects, the ALUP provides methods, policies, and procedures for working with the County or City to assess Airport compatibility.

CEQA Analysis

As noted in the discussion of on-Airport land uses, two components, acquiring the remainder of the CB&I and Saes properties and demolishing incompatible structures, would increase compatibility generally west of Runway 11 and northwest of Runway 7, within Aviation Safety Areas RPZ and S-1a. The changes to adjacent land-use compatibility would be less than significant.

Mitigation Measure 5.2-2: None required.

5.2.4 Summary of Impacts

Table 5.2-2 summarizes the land use impacts as they relate to Phase I and Phase II of the Proposed Action.

For Phase I of the Proposed Action, land use compatibility impacts would be somewhat less than the No Action Alternative because flight operations would be reduced. Compared to Baseline Conditions, both Phase I and Phase II of the Proposed Action would result in increased flight operations. However, land use compatibility impacts, in both 2010 and 2023, would be less than significant and no mitigation is warranted.

TABLE 5.2-2
LAND USE IMPACTS SUMMARY MATRIX

Impact	Phase I (2005-2010)		Phase II (2011-2023)
	Compared to No Action Alternative	Compared to Baseline Conditions	Compared to Baseline Conditions
Changes in On-Airport Land Uses	No change in on-Airport land uses	LTS	LTS
Adjacent Land Use Compatibility	Proposed Action would not result in any land use incompatibilities	LTS	LTS

LTS = Less than significant
N/A = Not Applicable
S = Significant

SOURCE: ESA, 2006

Airport Sponsor's Assurance Related to Existing and Planned Land Uses

The Airport has provided assurance that it is, and will continue to be, in compliance with 49 USC 47107(a)(10), as amended. This assurance relates to existing and planned land use and involves the adoption of zoning laws and other measures, to the extent reasonable, to restrict the use of land adjacent to or in the immediate vicinity of the Airport to activities and purposes compatible with normal airport operations, including aircraft landings and departures. Appendix C contains a letter dated 18 January 2006 confirming this assurance.

5.3 Socioeconomic Impacts

5.3-1 Transportation

5.3-1.1 Background and Methodology

5.3-1.1.1 Regulatory Context

For a discussion of the regulatory context for transportation, see Appendix O.

5.3-1.1.2 Thresholds of Significance

5.3-1.1.2.1 NEPA Thresholds

FAA Order 1050.1E, *Environmental Impacts: Policies and Procedures* and FAA Order 5050.4A, *Airport Environmental Handbook* do not provide specific NEPA thresholds of significance for impacts on surface transportation.

5.3-1.1.2.2 CEQA Thresholds

San Luis Obispo County has established a minimum acceptable level of service (LOS) as LOS D for urban areas of the county, including the Airport area. In addition, as stated in their 2003 *State Route 227 Corridor Study*, Caltrans applies an intersection LOS goal of LOS D/E within urban areas (which it defined as crossing SR 227 at Buckley Road), and therefore, all of this EA/EIR's study intersections on SR 227 are within an urban area. A significant traffic impact would occur if operations were to degrade from LOS D or better under the No Action Alternative to worse than LOS D (i.e., LOS E or F) as a result of the Proposed Action, or if the Proposed Action would cause further deterioration at a location already operating worse than LOS D (i.e., from LOS E to LOS F) under the No Action Alternative. For purposes of this EA/EIR, a significant impact would occur if the Proposed Action would cause the average vehicle delay to increase by two or more seconds at a location already operating worse than LOS D.

A significant parking impact would occur if the estimated parking demand would exceed the supply of parking spaces available to SBP air passengers and employees.

A significant traffic safety impact would occur if safety conditions would deteriorate as a result of the Proposed Action.

5.3-1.1.3 Methodologies

Current annual passenger enplanement forecasts (2010 and 2023) were used as a measure of vehicle trip generation related to air passenger activity at the Airport, specifically in comparison to current enplanements (and associated vehicle trip generation). Baseline traffic conditions were ascertained (based on traffic volumes obtained from various sources), as were future (2010 and

2023) baseline conditions (based on traffic volume projections from the San Luis Obispo Citywide Traffic Model).

Impacts were assessed for four future traffic growth scenarios, as follows:

1. Year 2010 Background Growth — Projected Growth (2005-2010) in Surrounding Area
2. Year 2010 Airport Growth — Projected Growth plus Forecast Airport Growth
3. Year 2023 Background Growth — Projected Growth (2005-2023) in Surrounding Area
4. Year 2023 Airport Growth — Projected Growth plus Forecast Airport Growth

5.3-1.2 Baseline Conditions

5.3-1.2.1 Regional Setting

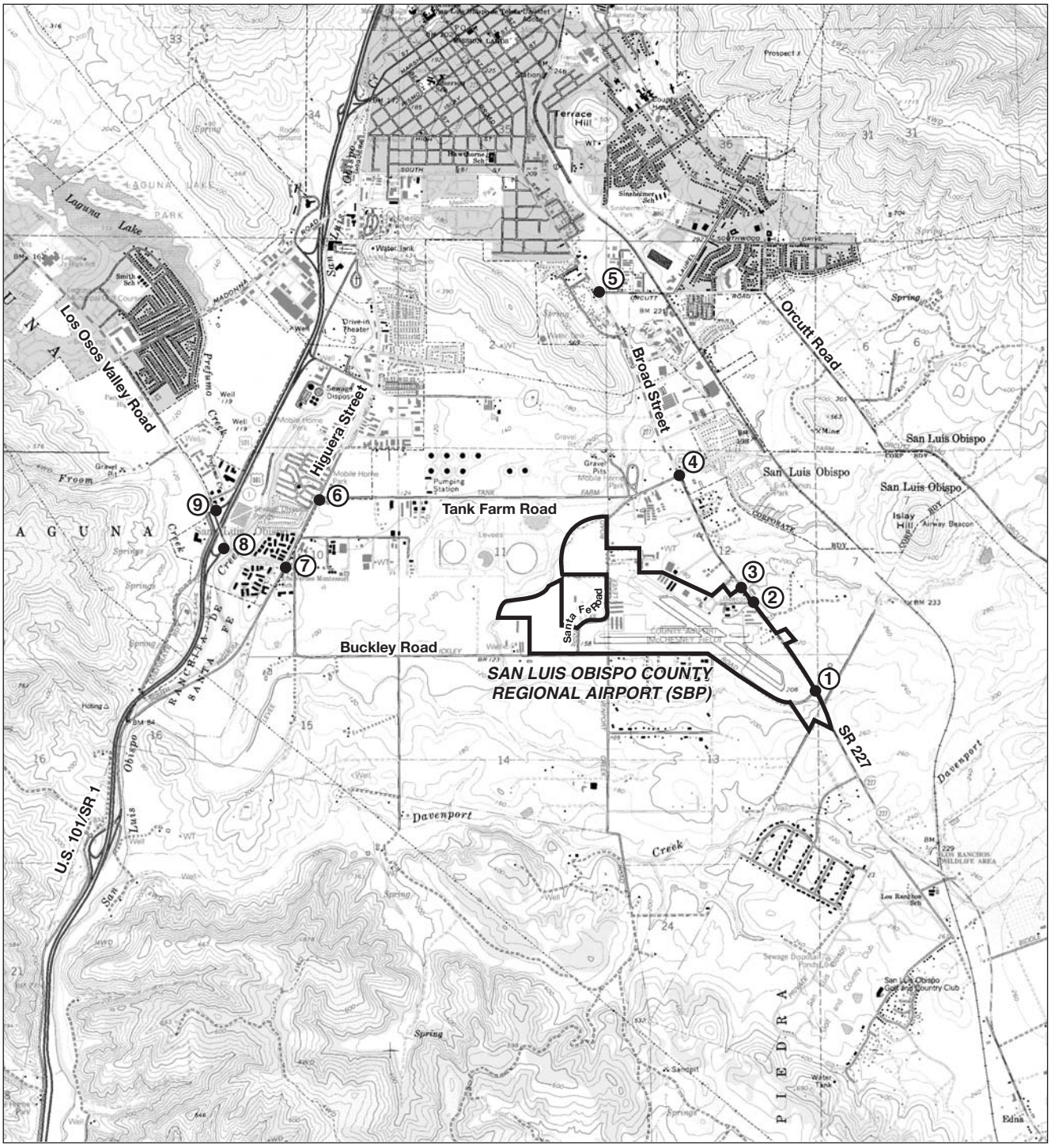
The roadway system serving the San Luis Obispo County Airport (SBP) area includes regional highways (i.e., U.S. 101, State Route (SR) 1 and SR 227), and local roadways (see Figure 5.3-1-1). *U.S. 101 and SR 1* overlap as a four-lane freeway in the vicinity of SBP, with three interchanges (i.e., Madonna Road, Prado Road (northbound only), and Los Osos Valley Road) that can be used to access the Airport area. Peak-month average daily traffic (ADT) on U.S. 101 / SR 1 ranges from about 60,000 to 84,000 vehicles (Caltrans, 2005).

State Route 227 is a State highway that begins in the City of San Luis Obispo (on South Street), and is adjacent to SBP, on Broad Street (the name of the road changes to Edna Road south of the Airport). The lane configuration of SR 227 varies. Between Tank Farm Road and Aero Drive, there are two southbound lanes and one northbound lane with a center left-turn lane; south of Aero Drive to Airport Drive, there are one southbound lane and one northbound lane with a center left-turn lane; and south of Airport Drive there are two travel lanes except for left-turn pockets at intersections. The peak-month ADT on SR 227 (Broad Street) is about 17,000 vehicles near SBP and about 27,000 vehicles north of SBP in the City of San Luis Obispo (Caltrans, 2005).

5.3-1.2.2 Local Setting

Roadways

Local roadways serving the Airport area include Tank Farm Road, Orcutt Road, Higuera Street, Los Osos Valley Road, Aero Drive, Airport Drive, Santa Fe Road, and Buckley Road. *Tank Farm Road* is a two-lane east-west arterial that connects Higuera Street to SR 227 (Broad Street), with traffic signals at those intersections; Tank Farm Road continues as a four-lane road east of



● Numbers indicate study intersections; see text and Table A.5.3-1 in Appendix 5.3.

SOURCE: ESA Airports, 2005

San Luis Obispo County Regional Airport Master Plan Update EA-EIR . 203092

Figure 5.3-1-1
Roadways and Study Intersections in the Vicinity of SBP

SR 227. Tank Farm Road carries about 17,400 vehicles per day west of SR 227 (City of San Luis Obispo, 2005). *Orcutt Road* is a two-lane arterial that connects to SR 227 (at a signalized intersection) north of Tank Farm Road. *Higuera Street* is a north-south arterial that parallels U.S. 101 / SR 1 in the study area, with four travel lanes between signalized intersections at Los Osos Valley Road and Tank Farm Road. Higuera Street carries about 17,460 vehicles per day between Tank Farm Road and Los Osos Valley Road (City of San Luis Obispo, 2005). *Los Osos Valley Road*, a principal arterial, has three lanes at the eastern end, widening to five to seven lanes in sections. Los Osos Valley Road carries about 19,700 vehicles per day west of the U.S. 101 / SR 1 interchange (City of San Luis Obispo, 2005).

Primary local access to SBP (with direct access to the terminal building and parking lots) is provided by *Aero Drive* from SR 227, with secondary access from *Airport Drive* (off SR 227) and *Santa Fe Road* (off Tank Farm Road). The intersections of Aero Drive / SR 227, Airport Drive / SR 227, and Santa Fe Road / Tank Farm Road are currently unsignalized. The latter's configuration (i.e., Santa Fe Road intersects Tank Farm Road at a relatively flat angle) causes traffic safety concerns that are addressed by prohibiting left turns from westbound Tank Farm Road to Santa Fe Road. *Buckley Road*, a two-lane collector, is adjacent to the Airport and intersects with SR 227 at a signalized intersection.

Parking

Vehicular parking in the terminal area includes spaces in four public parking lots and in an employee lot; Lot 3, which provided spaces for both long-term public parking and rental cars in 1998, now is used for rental cars only. The public spaces predominantly serve long-term parking (including spaces for drivers with disabilities), though short-term (30-minute and 12-hour) metered parking spaces are also provided. Long-term public parking is managed by a parking permit system, under which prepayment of a per-calendar-day fee (for a maximum of 14 calendar days) is required.

There is a paved employee parking lot behind the terminal building, with an additional unpaved area available adjacent to the maintenance building, and on-street parking spaces for employees on Airport Drive west of Aero Drive.

Parking occupancy rates in each of the four public lots range from about 40 percent to 100 percent (see Appendix D). Overall occupancy for long-term spaces is about 70 to 75 percent.

Existing Airport Transportation Characteristics

The predominant mode of travel to/from the Airport is private vehicle (by people living in the surrounding area), rental car (by people flying into the area), taxi, and RIDE-ON (direct door-to-door airport transportation by a local transportation management association).

Existing Intersection Traffic Conditions

The following nine intersections in the project vicinity were selected as study locations:

1. State Route 227 at Buckley Road (*signalized*)
2. State Route 227 at Airport Drive (*unsignalized*)
3. State Route 227 at Aero Drive (*unsignalized*)
4. State Route 227 at Tank Farm Road (*signalized*)
5. State Route 227 at Orcutt Road (*signalized*)
6. Higuera Street at Tank Farm Road (*signalized*)
7. Higuera Street at Los Osos Valley Road (*signalized*)
8. U.S. 101 Northbound Ramps at Los Osos Valley Road (*signalized*)
9. U.S. 101 Southbound Ramps at Los Osos Valley Road (*signalized*)

Traffic turning movement volumes at seven signalized intersections and two unsignalized intersections were obtained from various sources, including traffic counts conducted for the city and county of San Luis Obispo, and traffic counts conducted by Environmental Science Associates (ESA). Traffic level of service (LOS), a measure of the average driver's perceptions of traffic flow conditions, using a six-level scale from LOS A (free flow conditions, with little or no delays) to LOS F (extreme congestion, with long delays), was analyzed using methodologies formulated by the Transportation Research Board (TRB, 2000).

All except one of the study intersections currently operate at an acceptable LOS D or better during both the a.m. and p.m. peak hours (see Appendix D). The intersection of Los Osos Valley Road and the U.S. 101 Southbound Off-ramp operates at LOS E during both peak hours. (The LOS calculation sheets are on-file and available for review at the San Luis Obispo County Department of Public Works.)

5.3-1.2.3 Traffic Growth

Background Traffic Growth

Plots of roadway volumes (2003 Base and 2020 Buildout) from the City of San Luis Obispo's Travel Demand Model (included in the *San Luis Obispo Fringe Circulation Study*) provided the basis for derivation of traffic volume projections for analysis years 2010 and 2023 (San Luis Obispo County, 2004). Peak-hour traffic volumes at the study intersections under 2010 and 2023 Baseline Conditions were estimated by applying annual growth rates (2003-2020) that the City's model projected.

Airport Traffic Growth

The number of vehicle trips per enplanement is typically used as a measure of trip generation related to air passenger activity at commercial airports. Research of trip generation rates applicable to commercial airports indicates that a trip rate of 2.67 daily vehicle trips per daily enplanement is appropriate for smaller airports, and that trip rate was used for forecasting the increase in Airport-related trips in both 2010 and 2023 (see Appendix D).

Trip distribution for Airport-related traffic was developed on the basis of turning movement patterns at the Airport access intersections on SR 227 at Aero Drive and Airport Drive, and at the other study intersections, during traffic counts conducted in 2000-2005.

Planned Transportation Improvements

The City of San Luis Obispo and state and regional transportation authorities have planned a number of transportation improvements in the vicinity of, or affecting, the study area (see Appendix D). These improvements are subject to the availability of funding from various sources, including traffic mitigation fees paid by development projects in the area. Future traffic volumes projected by the San Luis Obispo Citywide Traffic Model for an assumed buildout year (about 2020), and used by San Luis Obispo County for the 2004 *San Luis Obispo Fringe Circulation Study*, which serves as a basis for analysis of traffic conditions for this report, assumed the planned roadway improvements.

Analysis Scenarios

Background Growth (Year 2010)

The Background Growth scenario (for 2010) would increase traffic volumes on study area roadways associated with planned/approved development in the City of San Luis Obispo and in the areas of San Luis Obispo County surrounding the Airport.

Intersections. The signalized intersection of Los Osos Valley Road / U.S. 101 Southbound Off-Ramp would operate at an unacceptable LOS F during both peak hours, and the signalized intersection of SR 227 / Tank Farm Road is expected to operate at an unacceptable LOS E during the p.m. peak hour. Those conditions would represent changes in intersection level of service from Baseline Conditions. All other study intersections would operate at an acceptable level of service (i.e., LOS D or better).

Background Growth (Year 2023)

The Background Growth scenario (for 2023) would increase traffic volumes on study area roadways associated with planned/approved development in the City of San Luis Obispo and in the areas of San Luis Obispo County surrounding the Airport.

Intersections. Six of the nine study intersections would operate at an unacceptable LOS E or F during one or both of the peak traffic hours level of service. Those conditions would represent substantial changes in intersection level of service from Baseline Conditions. The three other study intersections would operate at an acceptable level of service.

5.3-1.3 Impacts and Mitigation

5.3-1.3.1 No Action Alternative

The No Action Alternative assumes that the Proposed Action would not occur at SBP. However, with or without the Airport Master Plan improvements, the number of annual passengers and

operations at SBP is projected to increase, as is the use of regional jet aircraft. Therefore, the Airport's demand forecasts for air passenger and air cargo activity would be the same for the No Action Alternative as for the Proposed Action (see Chapter 2, Purpose and Need for the Project). The Airport facilities under the No Action Alternative would be limited to those now existing at SBP and other projects that have been approved, but not constructed. These approved projects include a new terminal building and parking facility, and a reconfigured access roadway system.

Intersections

Under the No Action Alternative, the signalized intersection of Los Osos Valley Road / U.S. 101 Southbound Off-Ramp would operate at an unacceptable LOS F during both peak hours, and the signalized intersection of SR 227 / Tank Farm Road is expected to operate at an unacceptable LOS E during the p.m. peak hour (see Appendix D). All other study intersections would operate at an acceptable level of service (i.e., LOS D or better).

Parking

The on-Airport parking supply would increase to 1,065 spaces under the No Action Alternative (225 spaces for employees, 635 long-term public spaces, and 205 spaces for both rental cars and short-term parking). Parking demand would increase due to the growth in Airport activity, primarily due to projected increases in passenger enplanements. Parking demand under 2010 conditions was estimated on the basis of percent increases in enplanements from Baseline Conditions. The short-term parking spaces are currently underutilized. Except for Lot 5, which is the farthest away from the terminal, long-term parking spaces are essentially at capacity. Therefore, demand for long-term parking spaces is considered the critical element of the Airport parking supply when adequacy of supply to accommodate demand is evaluated.

The estimated 30 percent increase in passenger enplanements from 2004 to 2010 translates to an increase in SBP long-term parking demand to about 330 spaces. The supply of 635 long-term spaces under the No Action Alternative would accommodate the estimated demand, and the occupancy rate would be about 52 percent.

Access

Through traffic on Santa Fe Road would be maintained at all times under the No Action Alternative. Motorists would access land uses on Santa Fe Road from either Buckley Road or Tank Farm Road.

Traffic Safety (CEQA Only)

Traffic increases on roadways that provide access to and from the project site would not substantially affect traffic conditions on those roads (see discussion of traffic impacts at intersections, above). The physical and traffic characteristics of those roadways (e.g., lane widths, traffic control at intersections, speed limits, sight distance, etc.) would remain largely unchanged, though in cooperation with Caltrans, the main Airport access intersection at Aero Drive would be reconfigured (to align with driveway intersection on the opposite side of SR 227) and signalized.

5.3-1.3.2 Proposed Action

Phase I (2005–2010)

Implementation of the Proposed Action in 2010 would not result in substantial changes to the transportation infrastructure in the SBP vicinity. Santa Fe Road would be relocated and the new alignment of Santa Fe Road would eliminate the series of turns on the existing alignment. Santa Fe Road would intersect Buckley Road about 800 feet west of its current location.

In cooperation with Caltrans, the proposed signalization of the reconfigured main Airport access intersection at Aero Drive (to align with driveway intersection on the opposite side of SR 227) would improve the levels of service for left-turn and right-turn movements at that intersection. Signalization was identified in the 1998 Master Plan EA/EIR as an improvement to mitigate unacceptable levels of service at the SR 227 / Aero Drive intersection.

Impact 5.3-1-1: Intersection Congestion Impacts

Under the Proposed Action, the signalized intersection of Los Osos Valley Road / U.S. 101 Southbound Off-Ramp would operate at an unacceptable LOS F during both peak hours, and the signalized intersection of SR 227 / Tank Farm Road is expected to operate at an unacceptable LOS E during the p.m. peak hour (see Appendix D). All other study intersections would operate at an acceptable level of service (i.e., LOS D or better).

NEPA Analysis

No degradations in levels of service would occur under Phase I of the Proposed Action compared to conditions under the No Action Alternative. FAA Order 1050.1E, *Environmental Impacts: Policies and Procedures* and FAA Order 5050.4A, *Airport Environmental Handbook* do not provide specific NEPA thresholds of significance for impacts on surface transportation.

CEQA Analysis

No degradations in levels of service would occur under Phase I of the Proposed Action compared to conditions under Baseline Conditions. The increased delay due to traffic generated by growth in Airport activity would not be high enough to have a significant effect on traffic circulation patterns and congestion. Therefore, the impact of the Proposed Action on intersection congestion would be less than significant.

Mitigation Measure 5.3-1-1: None required.

Impact 5.3-1-2: Construction-Related Impacts

Construction of airfield facilities, aviation support facilities, and non-aviation projects would generate off-site traffic, which would include the initial delivery of construction vehicles and equipment to the project site, the daily arrival and departure of construction workers, and the delivery of materials and removal of construction debris throughout the construction period. It is expected that fill material from the Flower Mound on the north side of Tank Farm Road would be

used for the grading and fill associated with the runway extension project component. This would require haul trucks to use Tank Farm Road and Santa Fe Road to transport the fill material. The impact of construction-related traffic would be a temporary and intermittent lessening of the capacities of project area streets because of the slower movements and larger turning radii of construction trucks compared to passenger vehicles. To minimize these temporary impacts to traffic on Tank Farm Road, the County would implement a traffic control program that would include, but not be limited to, the following:

- All transport of fill materials would occur at night (i.e., after the p.m. peak hour and before the a.m. peak hour on Tank Farm Road).
- A dedicated flagger(s), flashing beacons, and appropriate signage would be used to alert motorists on Tank Farm Road that construction vehicles could be using Tank Farm Road.
- Application of an encroachment permit to allow the placement of the appropriate signage.
- All debris associated with the transport of the fill material would be swept up every morning upon completion of the last trip transporting the fill material.
- Coordination with the replacement of the existing culvert on Tank Farm Road to ensure that the transport of fill materials does not occur while this other construction project occurs.

Through traffic on Santa Fe Road would be temporarily blocked during the period after construction of the Runway 11 extension starts and before the realigned Santa Fe Road is completed. However, access to land uses on Santa Fe Road would be maintained from Buckley Road (for uses south of the road closure) and from Tank Farm Road (for uses north of the road closure).

NEPA Analysis

A temporary and intermittent lessening of the capacities of project area streets, and a short-term closure of Santa Fe Road to through traffic, would occur under the Proposed Action compared to conditions under the No Action Alternative. The effect would be a temporary inconvenience to individual motorists who currently drive on Tank Farm Road during the nighttime hours, on Santa Fe Road from Buckley Road to land uses north of the road closure, or on Santa Fe Road from Tank Farm Road to land uses south of the road closure. Given that the transport of fill material would occur during nighttime hours and that the daily traffic volume on Santa Fe Road is about 1,400 and 2,100 vehicles near Buckley Road and Tank Farm Road, respectively, the impact on traffic circulation patterns would be less than significant.

CEQA Analysis

A temporary and intermittent lessening of the capacities of project area streets, and a short-term closure of Santa Fe Road to through traffic, would occur under the Proposed Action compared to conditions under Baseline Conditions. These short-term effects would not have a significant effect on traffic circulation patterns and congestion, and as described above, would be a temporary inconvenience to individual motorists who currently drive on Tank Farm Road during the nighttime hours, on Santa Fe Road from Buckley Road to land uses north of the road closure, or on Santa Fe Road from Tank Farm Road to land uses south of the road closure. Therefore, the impact of the Proposed Action Alternative during the construction period would be less than significant.

Mitigation Measure 5.3-1-2: None required.

Impact 5.3-1-3: Parking Impacts

The on-Airport parking supply would not be changed by the Proposed Action.

NEPA Analysis

The estimated parking supply and demand would be unchanged from conditions under the No Action Alternative. The impact of the Proposed Action Alternative on parking conditions would be less than significant.

CEQA Analysis

Parking demand would increase compared to Baseline Conditions, due to the growth in Airport activity. The estimated 30 percent increase in passenger enplanements from 2004 to 2010 translates to an increase in SBP long-term parking demand to about 330 spaces. The supply of 635 long-term spaces would accommodate the estimated demand, and the occupancy rate would be about 52 percent. The impact of the Proposed Action Alternative on parking conditions would be less than significant.

Mitigation Measure 5.3-1-3: None required.

Impact 5.3-1-4: Traffic Safety Impacts (CEQA Only)

Traffic increases on roadways that provide access to and from the Airport would not substantially add to traffic conditions on those roads (see the discussion of traffic impacts at intersections, above). The physical and traffic characteristics of those roadways (e.g., lane widths, traffic control at intersections, speed limits, sight distance, etc.) would be unchanged from the No Action Alternative, and largely unchanged from Baseline Conditions, except that in cooperation with Caltrans, the main Airport access intersection at Aero Drive would be reconfigured (to align with driveway intersection on the opposite side of SR 227) and signalized.

CEQA Analysis

Reconfiguration and signalization of the SR 227 / Aero Drive intersection would reduce the potential for traffic turning conflicts. The impact of Phase I of the Proposed Action on traffic safety conditions compared to Baseline Conditions could be potentially beneficial.

Mitigation Measure 5.3-1-4: None required.

Phase II (2011 – 2023)

Implementation of the Proposed Action in 2023 would not result in substantial changes to the transportation infrastructure in the SBP vicinity.

Impact 5.3-1-1: Intersection Congestion Impacts

Under Phase II of the Proposed Action, five of the eight signalized study intersections are projected to operate at an unacceptable LOS E or F during one or both of the peak traffic hours (see Appendix D). The three other signalized study intersections would operate at an acceptable level of service (i.e., LOS D or better).

In addition, the level of service for critical movements (e.g., left turns from stop-sign-controlled side streets) at the unsignalized study intersection of SR 227 / Airport Drive is projected to operate at an unacceptable LOS F in 2023. Growth in traffic generated by Airport activities would increase outbound left turns, exacerbating delays to complete those turns. SR 227 / Airport Drive currently is a "T"-intersection, but is assumed to be reconfigured by 2023 to form a four-leg intersection, with the fourth leg providing access for the proposed Senn/Glick and Moribito/Burke development. The traffic volume making the affected minor-street left turns (eastbound and westbound) would be about two and three percent of the total intersection volume, without and with the traffic increase due to increased Airport activities, respectively.

CEQA Analysis

No degradations in levels of service at the signalized study intersections would occur under Phase II of the Proposed Action compared to Baseline Conditions. The increased delay due to traffic generated by growth in Airport activity would not be high enough to have a significant effect on traffic circulation patterns and congestion. However, the impact of Phase II of the Proposed Action at the unsignalized intersection of SR 227 / Airport Drive would be significant.

Mitigation Measure 5.3-1-1: At a time that Caltrans determines that traffic conditions warrant it, San Luis Obispo County would coordinate with Caltrans for the design, funding, and timing of installation of traffic signals at the intersection of SR 227 and Airport Drive.

Signalization of the SR 227 / Airport Drive intersection would improve the peak-hour LOS to an acceptable level (mitigating the impact to a less-than-significant level). However, traffic volumes would not satisfy Caltrans' Traffic Signal Warrant No. 11 [Peak-Hour Volumes] under projected 2023 conditions.

Impact 5.3-1-2: Construction-related Impacts

Construction of airfield and aviation support facilities would generate off-site traffic, which would include the initial delivery of construction vehicles and equipment to the project site, the daily arrival and departure of construction workers, and the delivery of materials and removal of construction debris throughout the construction period. The impact of construction-related traffic would be a temporary and intermittent lessening of the capacities of streets in the Airport vicinity because of the slower movements and larger turning radii of construction trucks compared to passenger vehicles.

CEQA Analysis

A temporary and intermittent lessening of the capacities of streets in the Airport vicinity would occur under the Proposed Action compared to the Baseline Conditions. These short-term effects would not have a significant effect on traffic circulation patterns and congestion. Therefore, the impact of Phase II of the Proposed Action during the construction period would be less than significant.

Mitigation Measure 5.3-1-2: None required.

Impact 5.3-1-3: Parking Impacts

The on-Airport parking supply would be unchanged from 2010 conditions (i.e., 635 long-term parking spaces).

CEQA Analysis

Parking demand would increase compared to Baseline Conditions, due to the growth in Airport activity. The estimated 84 percent increase in passenger enplanements from 2004 to 2023 translates to an increase in SBP long-term parking demand to about 607 spaces. The supply of 635 long-term spaces would accommodate the estimated demand, although the occupancy rate would increase from about 74 percent to about 96 percent. The impact of Phase II of the Proposed Action on parking conditions would be less than significant.

Mitigation Measure 5.3-1-3: None required.

Impact 5.3-1-4: Traffic Safety Impacts

Traffic increases on roadways that provide access to and from the Airport would not substantially affect traffic conditions on those roads; see discussion of traffic impacts at intersections, above. The physical and traffic characteristics of those roadways (e.g., lane widths, traffic control at intersections, speed limits, sight distance, etc.) would be largely unchanged from Baseline Conditions, except that in cooperation with Caltrans, the main Airport access intersection at Aero Drive would be reconfigured (to align with driveway intersection on the opposite side of SR 227) and signalized.

CEQA Analysis

Reconfiguration and signalization of the SR 227 / Aero Drive intersection would reduce the potential for traffic turning conflicts. The impact of Phase II of the Proposed Action on traffic safety conditions compared to Baseline Conditions could be potentially beneficial.

Mitigation Measure 5.3-1-4: None required.

5.3-1.4 Summary of Impacts

Table 5.3-1-1 summarizes transportation impacts as they relate to implementation of Phase I and Phase II of the Proposed Action.

TABLE 5.3-1-1
TRANSPORTATION IMPACTS SUMMARY MATRIX

	Phase I (2005-2010)		Phase II (2011-2023)
Impact	**Compared to No Action Alternative**	**Compared to Baseline Conditions**	**Compared to Baseline Conditions**
Intersection Congestion Impacts	No degradation of level of service would occur	LTS	LTS
Construction-Related Impacts	Temporary impacts to motorists on Tank Farm Road during transport of fill material	LTS	LTS
Parking Impacts	Demand for parking would be met with existing and proposed parking spaces	LTS	LTS
Traffic Safety Impacts	N/A	LTS	LTS

LTS = Less than significant
N/A = Not Applicable
S = Significant

SOURCE: ESA, 2006

For Phase I of the Proposed Action, transportation impacts compared to the No Action Alternative would be less than significant. Compared to Baseline Conditions, both Phase I and Phase II of the Proposed Action would result in less than significant transportation impacts and no mitigation is warranted.

5.3-2 Environmental Justice (NEPA Only)

5.3-2.1 Background and Methodology

Executive Order 12898*, Federal Actions to address Environmental Justice in Minority and Low-Income Populations,* requires all federal agencies to identify and address disproportionately high and adverse impacts on minority and low-income populations. U.S. Department of Transportation (DOT) Order 5610.2 presents DOT's policy to promote the principles of environmental justice through the incorporation of those principles in all DOT programs, policies and activities. The DOT Order defines a low-income person as an individual whose median household income is at or below the poverty level. Minorities are defined as individuals or populations who are considered in the black, Asian/Pacific Islander, or American Indian/Alaskan Native racial categories, or individuals of Hispanic origins.

5.3-2.1.1 Regulatory Context

For a discussion of the regulatory context for environmental justice, see Appendix O.

5.3-2.1.2 Thresholds of Significance

To determine whether an environmental justice population is present, Federal agencies must refer to U.S Census data to establish the demographic and socioeconomic baseline. If a Proposed Action causes disproportionately high and adverse human health or environmental effects on a minority- and low-income population, it would represent a significant impact associated with environmental justice. These disproportionate impacts must be analyzed and the FAA must ensure that its NEPA process provides public involvement opportunities for disproportionately affected low income and minority populations to comply with Executive Order 12898 and DOT Order 6510.2.

5.3-2.1.3 Methodologies

Population demographics were obtained from the 2000 Census for San Luis Obispo County and represent the most recent decennial census information available from the U.S. Census Bureau. Data was obtained to the block group level, which is the smallest geographical entity for which the U.S. Census Bureau collects and tabulates decennial census information. SBP is located within a portion of Census Tract 115.02, Block 1. This analysis considered the population within this census tract block group and the block groups nearest to the airport boundaries, which include: Census Tract 111.03, Block Group 1; Census Tract 115.01, Block Group 1 and Census Tract 116, Block Groups 2 and 4.

Data pertaining to race and income for persons living in the Airport vicinity were evaluated at the County level and at the Census Tract Block Group level to identify and quantify the minority and low-income populations that could be disproportionately affected by any adverse effects of the Proposed Action.

5.3-2.2 Baseline Conditions

Residential development is not permitted on Airport property, but residential development is present within each of the block groups included in the environmental justice analysis. According to the 2000 Census, the total population within the block groups nearest the Airport totaled 10,486 (U.S. Census Bureau, 2000). For a discussion of the minority and low-income populations within the census tract block groups nearest to the Airport, see Appendix P.

As shown in Appendix P, Census Tract 111.03, Block Group 1 contains both a minority population (20.1% minority) and portion of individuals living below the poverty level (20.2%) that are greater than those identified for the County as a whole. Census Tract 115.01, Block Group 1 also contains a greater percentage of persons living the poverty level (17.7%) compared that is greater than those identified for the County as a whole. Based on this data, the populations of Census Tract 111.03, Block Group 1 and Census Tract 115.01, Block Group 1 are considered environmental justice populations.

5.3-2.3 Impacts and Mitigation

5.3-2.3.1 No Action Alternative

The No Action Alternative assumes that the Proposed Action would not occur at SBP. However, the number of annual passengers and operations and the use of regional jet aircraft are projected to increase. The No Action Alternative would include the construction of previously approved projects such as taxiways, and additional structures such as hangars, a new fuel storage facility, and a new terminal and parking structure. The No Action Alternative would not bring aircraft closer to the environmental justice populations identified (Block Group 1 in Census Tracts 111.03 and 115.01). Traffic volumes would increase throughout the study area and at intersections adjacent to the block groups, such as the intersections of State Route 227 (SR 227) and Tank Farm Road, SR 227 and Orcutt Road, and Higuera Street and Tank Farm Road as a result of increased operations at SPB and planned growth by the City and County of San Luis Obispo.

5.3-2.3.2 Proposed Action

Phase I (2005–2010)

Impact 5.3-2.1: Disproportionately High and Adverse Human Health or Environmental Effects on Minority or Low-income Populations.

Phase I improvements would include an 800-foot extension of Runway 11 and its associated taxiway, as well as the extension of perimeter roadway to accommodate these airfield changes, the realignment of Santa Fe Road, construction of a temporary bridge and haul road over San Luis Obispo Creek, and the relocation of navigational aids. Excavation, grading and filling activities would be required as part of construction. Construction of the Phase I project components could lead to temporary effects associated with traffic, air quality (vehicle and dust emissions), and noise. Phase I project components would create an increased amount of

impervious surface and greater stormwater volumes, generate a greater number of fugitive dust emissions, and decrease the distance between aircraft movement areas and the nearby Damon Garcia ball fields.

NEPA Analysis

As discussed throughout Chapter 5, no significant impacts were identified under NEPA for any of the Phase I project components. Therefore, the Proposed Action would not disproportionately affect minority and low-income populations and specific public involvement opportunities are not warranted.

Mitigation Measure 5.3-2-1: None required.

5.3-2.4 Summary of Impacts

Table 5.3-2-1 summarizes potential impacts to environmental justice populations as they relate to implementation of Phase I and Phase II of the Proposed Action. The impacts of the Proposed Action are less than significant.

TABLE 5.3-2-1
ENVIRONMENTAL JUSTICE IMPACT SUMMARY MATRIX

	Phase I (2005-2010)		Phase II (2011-2023)
Impact	**Compared to No Action Alternative**	**Compared to Baseline Conditions**	**Compared to Baseline Conditions**
Disproportionately high and adverse human health or environmental effects on minority and low-income populations.	No disproportionate impacts to minority or low-income populations	N/A	N/A

LTS = Less than significant
N/A = Not applicable
S = Significant

SOURCE: ESA, 2006

5.3-3 Children's Environmental Health and Safety Risks (NEPA Only)

5.3-3.1 Background and Methodology

5.3-3.1.1 Regulatory Context

Children may suffer disproportionately from environmental health and safety risks as a result of their developing bodies and systems and from the effect of products or substances with which they are likely to come in contact or ingest (e,g., air, food, drinking water, recreational waters, soil, or products to which they might use or be exposed). Pursuant to Executive Order 13045, *Protection of Children from Environmental Health Risks and Safety Risks,* FAA Order 1050.1E (Section 16.1b) directs federal agencies to make it a high priority to identify and assess environmental health risks and safety risks to children (i.e., the portion of the population under 18 years of age). Federal agencies are encouraged to ensure that their policies, programs, and activities, and standards address disproportionate risks to children that result from environmental health risks or safety risks.

5.3-3.1.2 Thresholds of Significance

5.3-3.1.2.1 NEPA Thresholds

Environmental health risks and safety risks include those attributable to products or substances that a child is likely to come into contact with or ingest. Although no specific criteria have been identified to evaluate potential impacts, disproportionate health and safety risks to children that would result from a proposed action may represent a significant impact.

For the purpose of this analysis, a significant impact to drinking water sources, air quality, schools, or public recreational facilities would be considered a significant risk to children's health and safety. (For more detailed discussions of the potential impacts of the proposed project on air quality, drinking water, or public recreation facilities [considered Section 4(f) facilities], please refer to those sections of the Environmental Assessment / Environmental Impact Report [EA/EIR].)

5.3-3.1.2.2 CEQA Thresholds

CEQA does not provide specific criteria for identifying significant impacts associated with changes in children's environmental health and safety. Therefore, no CEQA analysis is required.

5.3-3.1.3 Methodologies

When considering the environmental health and safety risks posed to children, the location, population, and duration of time that children spend within the project area or its affected area must be considered. Then, it must be determined whether the Proposed Action would produce products or substances that a child is likely to come into contact with or ingest. To do so, U.S. Census tract information was evaluated to the block group level to identify the presence of

children (i.e., individuals under 18 years of age) in the census tract block groups surrounding the Airport. Information was also obtained about the schools within the San Louis Coastal Unified School District (SLCUSD), private educational institutions, and day care facilities to identify their presence within the Airport vicinity.

5.3-3.2 Baseline Conditions

5.3-3.2.1 Demographics

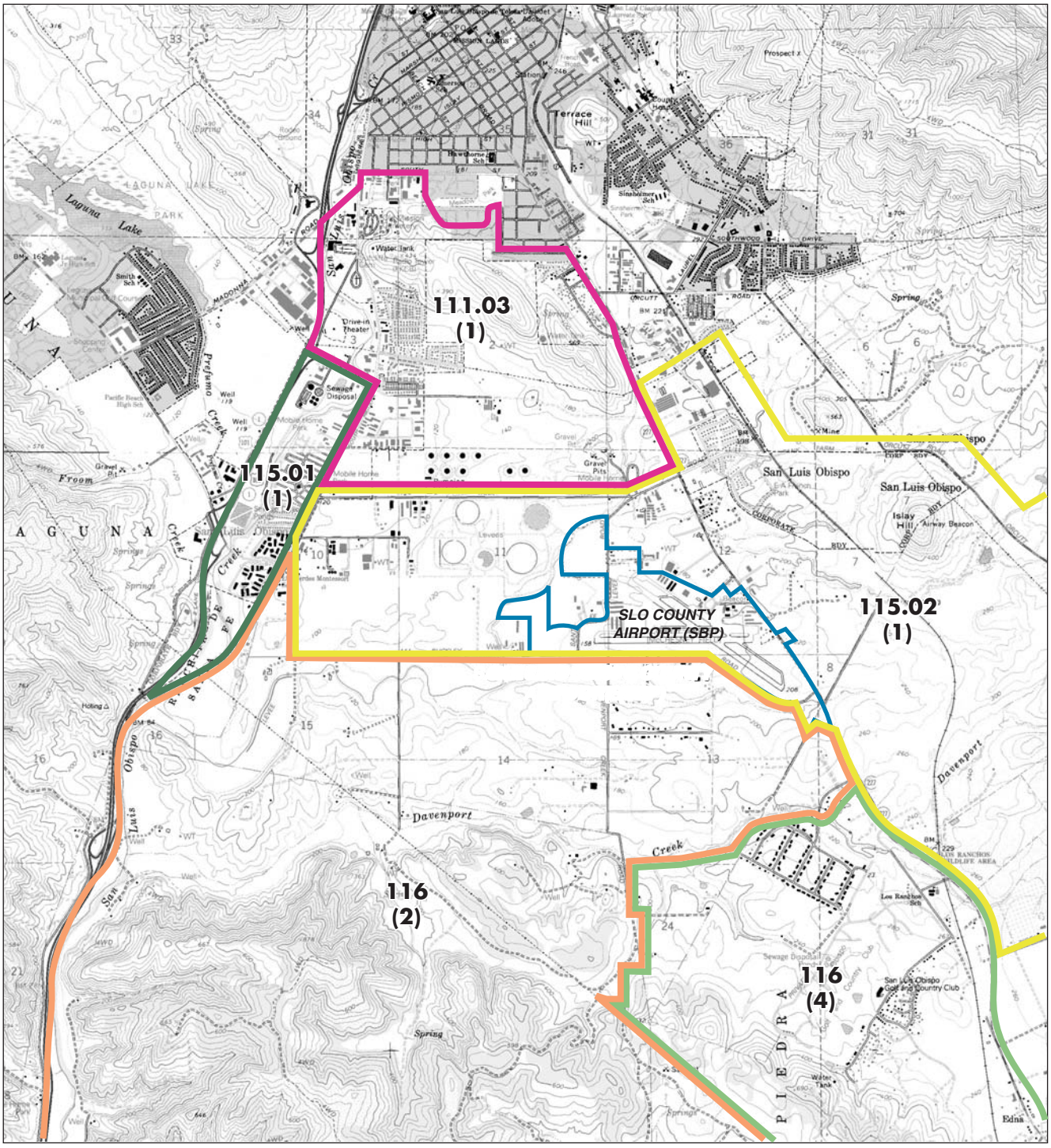
Population demographics were obtained from the 2000 Census for San Luis Obispo County and represent the most recent decennial census information available from the U.S. Census Bureau. Data was obtained to the block group level, which is the smallest geographical entity for which the U.S. Census Bureau collects and tabulates decennial census information. As shown on Figure 5.3-3-1, SBP is located within a portion of Census Tract 115.02, Block Group 1. This analysis considered the population within this census tract block group and the block groups nearest to the Airport boundaries, which include: Census Tract 111.03, Block Group 1; Census Tract 115.01, Block Group 1; Census Tract 115.02, Block Group 1; and Census Tract 116, Block Groups 2 and 4.

TABLE 5.3-3-1
POPULATION OF CHILDREN IN ADJACENT CENSUS BLOCK GROUPS

Area	Total Population (2000)	Children (Under 18 years) (2000)	Children as Portion of the Total Population (2000)
San Luis Obispo County	246,681	53,530	21.7%
Census Tract 111.03, Block Group 1	2,476	335	13.5%
Census Tract 115.01, Block Group 1	1,701	316	18.6%
Census Tract 115.02, Block Group 1	3,615	1,176	32.5%
Census Tract 116, Block Group 2	748	173	23.1%
Census Tract 116, Block Group 4	1,600	402	25.1%
TOTAL Airport Vicinity	**10,140**	**2,403**	**23. 6%**

SOURCE: U.S. Census Bureau, 2000 (www.factfinder.census.gov).

As shown on Table 5.3-3-1, the ratio of children residing in the project vicinity is 23.6 percent, which exceeds the percentage of children within the population of San Luis Obispo County as a whole. Two of the four block groups associated with the project vicinity, Census Tract 115.02, Block Group 1 (32.5 percent) and Census Tract 116, Block Groups 2 (23.1 percent) and 4 (25.1 percent), contain populations of children at percentages that surpass the percentage of children within the county population as a whole (21.7 percent). The block group that contains the densest population of children is the same block group that contains the Airport. While there are no residences on the Airport, the block group that includes the Airport includes a densely



SOURCE: U.S. Census Bureau, 2000 (www.factfinder.census.gov);
USGS 7.5-minute topographic quad (Pismo Beach, CA.)

San Luis Obispo County Regional Airport Master Plan Update EA-EIR . 203092

Figure 5.3-3-1
U.S. Census Tracts and Block Groups
in the Vicinity of SBP

populated area on the east side of Broad Street (State Route 227) and northeast of the Airport. Schools and daycare centers are locations in which there is the potential for children to be exposed to environmental health risks since a higher concentration of children are located in these facilities during the day. The San Luis Coastal Unified School District includes nine elementary schools, two middle schools, and three high schools, most of which are located within the City of San Luis Obispo and its immediate vicinity (SLCUSD, 2005). Several of these schools also provide preschool and after school programs. Six private schools, some of which provide preschool programs, and seven facilities that provide only preschool or daycare service also were identified within or near the City of San Luis Obispo. The nearest schools to SBP runways are the Montessori Children's School (Census Tract 115.01, Block Group 1) and Los Ranchos Elementary School (Census Tract 116, Block Group 4). The nearest day care center is the Child Care Center. Each of these facilities is more than one mile from Airport property. Figure 5.3-3-2 shows the location of schools, preschools, and child care facilities nearest to the Airport.

5.3-3.2.2 Drinking Water

As described in Section 5.4-2, Utilities, drinking water is provided to residents of San Luis Obispo from three sources: the Salinas Reservoir at Lake Margarita, which receives water from the Salinas River; Whale Rock Reservoir, which receives water from Old Creek; and groundwater wells. As described in Section 5.6, Water Quality, approximately 4 percent of the public water supply is provided by groundwater wells, and there are no sole source aquifers that provide drinking water beneath the project area.

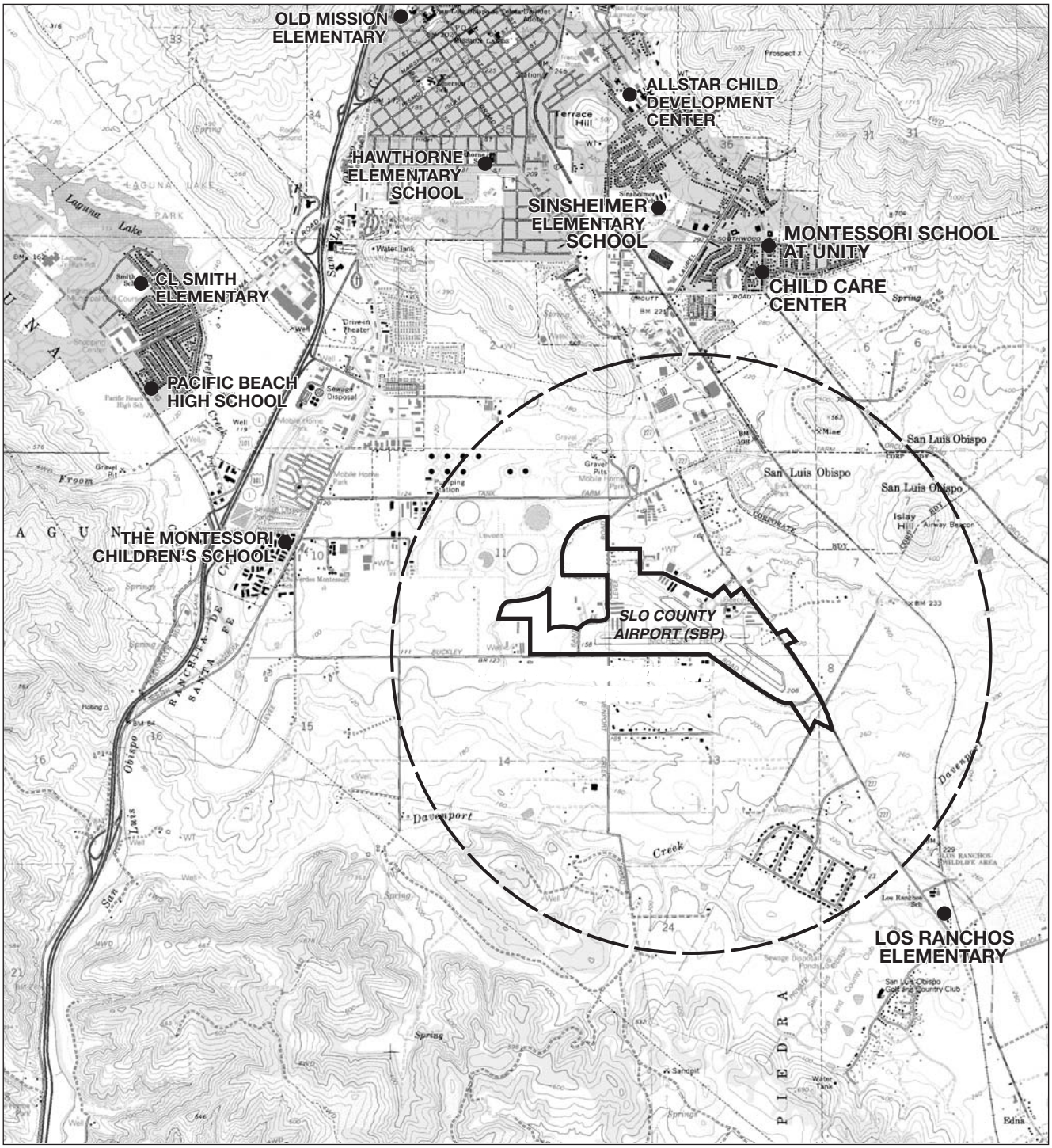
Margarita Lake, which is formed by a dam across the Salinas River, is located more than 10 miles northeast of San Luis Obispo. The Whale Rock Reservoir, which also provides drinking water to the City of San Luis Obispo and its environs, receives water from Old Creek. Old Creek originates as a mountain creek near Cuesta Pass and flows from northeast to southeast until it enters the Pacific Ocean at Avila Beach. Neither drinking water source is directly related to the activities at the Airport. Even in the unlikely event of a discharge to San Luis Obispo Creek, these waterbodies would not be affected because there is no connection between San Luis Obispo Creek the surface water sources upstream of the dams.

5.3-3.2.3 Air Quality

As discussed in Section 5.5, Air Quality," San Luis Obispo County meets all national ambient air quality standards.

5.3-3.2.4 Recreational Facilities/Section 4(f) Facilities

As discussed in Section 5.7, Section 4(f) Resources, and shown on Figure 5.3-3-2, the nearest public recreation facility to SBP is the Damon Garcia Sports Fields. These lighted fields are owned by the City of San Luis Obispo and located at the corner of Broad Street (State Route 227) and Industrial Way. The 20-acre facility includes fields for sports such as soccer, rugby, football, and lacrosse and serves as a venue for special events. The field is located approximately 0.65 mile from the end of Runway 11 and approximately 0.25 mile from Airport property.



SOURCE: ESA Airports, 2005;
USGS 7.5-minute topographic quad (Pismo Beach, CA.)

San Luis Obispo County Regional Airport Master Plan Update EA-EIR . 203092

Figure 5.3-3-2
School and Day Care Facilities
in the Vicinity of SBP

5.3-3.3 Impacts and Mitigation

5.3-3.3.1 No Action Alternative

The No Action Alternative would include the construction of previously approved projects such as taxiways, and additional structures such as hangars, a new fuel storage facility, and a new terminal and parking structure. These facilities would create new impervious surface to increase the amount of stormwater runoff. In addition, the number of enplanements and use of regional jet aircraft is projected to increase. The No Action alternative would not include airfield improvements that would bring aircraft closer to the schools and daycare centers nearest to SBP.

Drinking Water

The proposed project would not contribute contaminants to surface waters that are upstream of impounded drinking water sources. Construction activities, including grading and earthmoving activities, and increases in impervious surface that could lead to groundwater impacts would be prevented through ongoing permit compliance and the incorporation of appropriate mitigation measures (see Section 5.6, Water Quality).

The Airport will continue to comply with all requirements of its National Pollutant Discharge Elimination System (NPDES) Permits for General Construction activities and General Industrial Permit requirements, which includes the development of a Stormwater Pollution Prevention Plan (SWPPP) for construction and industrial activities. These plans include measures to prevent non-stormwater waste from entering local waterways and to prevent hazardous materials from entering stormwater or infiltrating to groundwater. The plans will continue to be implemented and updated to prevent water quality impacts. The No Action Alternative would not result in risks to children's health and safety as a result of potential impacts to drinking water sources.

Air Quality

Aircraft emissions would increase under the the No Action Alternative, but these increases would not exceed regulatory standards. Therefore, children would not be subject to a disproportionate increase in health risks as a result of air quality associated with airport operations.

Construction activities have the potential to produce substantial amounts of dust as a result of earthmoving activities and emissions from construction equipment. However, construction impacts would be reduced to less than significant impacts or decreased compared to baseline conditions.

Section 4(f) Resources (Parkland and Recreation Areas)

The Damon Garcia Playing fields are located approximately 0.63 mile from the end of Runway 11. Construction impacts associated with the No Action Alternative would be localized, and mitigation measures would be incorporated to reduce and prevent construction-related effects.

5.3-3.3.2 Proposed Action

Phase I (2005 – 2010)

Impact 5.3.3-1: Disproportionate Environmental Health and Safety Effect on Children

Phase I project components would create an increased amount of impervious surface and greater stormwater volumes, generate a greater number of fugitive dust emissions, and decrease the distance between aircraft movement areas and the nearby Damon Garcia ball fields. Phase I improvements would include an 800-foot extension of Runway 11 and its associated taxiway, as well as the extension of perimeter roadway to accommodate these airfield changes, the realignment of Santa Fe Road, construction of a temporary bridge and haul road over San Luis Obispo Creek, and the relocation of navigational aids. Excavation, grading and filling activities would be required as part of construction.

NEPA Analysis

The proposed runway and taxiway extension would bring aircraft 800 feet closer to the nearest schools located north of the project area. However, all of these schools are more than 1 mile from the nearest runway, and each facility would remain more than 1 mile away from the nearest runway following construction (see Figure 5.3-3-2). As shown in Section 5.1, Noise, these schools would remain outside the 65 CNEL noise contour, and construction noise would not extend over the 1-mile distance between the Airport and schools to affect these facilities.

Water Quality

Compared to the No Action Alternative, no additional impacts to drinking water are anticipated, as the Airport would continue to comply with all requirements of its NPDES Permit for General Construction activities and General Industrial Permit requirements, which prevent hazardous materials from entering stormwater or infiltrating to groundwater. Therefore, compared to the No Action Alternative, the Phase I project components associated with the Proposed Action would not result in disproportionate risks to children's health and safety as a result of potential impacts to drinking water sources.

Air Quality

Although the number of enplanements that would occur under Phase I of the Proposed Action, the number of operations associated with the Proposed Action is less than the number of operations associated with the No Action Alternative. However, the fleet mix would change as the runway extension able to accommodate regional jet aircraft. Therefore, children would not be subject to a disproportionate increase in health risks as a result of air quality associated with Airport operations under Phase I of the Proposed Action.

Construction activities have the potential to produce substantial amounts of dust as a result of earthmoving activities and emissions from construction equipment. However, no air quality analysis would be required under NEPA and construction-related impacts would be less than significant. Therefore, children would not be subject to a disproportionate increase in health risks as a result of air quality associated with airport operations.

Section 4(f) Resources

The Damon Garcia Playing fields are located approximately 0.63 mile from the end of Runway 11. The Proposed Action would extend Runway 11 by 800 feet. This extension would decrease the distance between the playing field and nearest runway by 370 feet, so that the facilities would be separated by 0.56 mile. This change is less than significant, as it would not cause the park to be included any of the noise contours associated with the Proposed Action.

Mitigation Measure 5.3-3-1: None required.

5.3-3.4 Summary of Impacts

Table 5.3-3-2 summarizes children's environmental health and safety risk impacts as they relate to implementation of the Proposed Action.

TABLE 5.3-3-2
CHILDREN'S ENVIRONMENTAL HEALTH AND SAFETY RISK IMPACT SUMMARY MATRIX

	Phase I (2005-2010)		Phase II (2011-2023)
Impact	**Compared to No Action Alternative**	**Compared to Baseline Conditions**	**Compared to Baseline Conditions**
Disproportionate environmental health and safety effects to children	No impacts to children's health and safety	N/A	N/A

LTS = Less than significant
N/A = Not applicable
S = Significant

SOURCE: ESA, 2006

5.4 Induced Socioeconomic Impacts

FAA Order 1050.1E, *Environmental Impacts: Policies and Procedures, Section 15,* states that when a Proposed Action involves induced or secondary impacts to surrounding communities, the EA shall describe such factors in general terms. The CEQA *Guidelines* also require consideration of effects to population and housing (often tied to employment), public services, and utilities. This section discusses induced impacts related to employment, public services, and utilities.

5.4-1 Employment

5.4-1.1 Background and Methodology

5.4-1.1.1 Regulatory Context

For a discussion of the regulatory context for induced socioeconomic impacts, see Appendix O.

5.4-1.1.2 Thresholds of Significance

5.4-1.1.2.1 NEPA Thresholds

FAA Order 1050.1E, *Environmental Impacts: Policies and Procedures* and FAA Order 5050.4A, *Airport Environmental Handbook* do not provide specific NEPA thresholds of significance for evaluating changes in employment or housing demand.

For the purpose of this analysis, an appreciable difference is considered to be a change of greater than 5 percent in the ratio of SBP employment to total employment in San Luis Obispo County when compared to the Baseline Conditions (2004). A difference of 5 percent or more is considered a significant impact.

Similarly, an appropriate measure of residential housing demand is indicated by the difference in new housing generated by implementation of the Proposed Action and the number of dwelling units forecasted for San Luis Obispo County. The relative importance of the housing demand that would be generated by the projected increase in employment at SBP can be identified by comparing the local employment generated to the proportion of local housing needed to accommodate the number of new employees. For the purpose of this analysis, a significant impact would occur if the number of new housing units needed for new SBP employees would exceed 5 percent of the proposed change in available housing for the County as a whole.

5.4-1.1.2.2 CEQA Thresholds

CEQA does not provide specific criteria for identifying significant impacts associated with changes in employment. However, the CEQA Guidelines require project sponsors to determine whether a project would create a significant impact if it would induce substantial population growth in an area, either directly (by proposing new homes and businesses) or indirectly (through the extension of roads or other infrastructure). For the purpose of this analysis, the same criterion used to identify an appreciable change in employment under NEPA was used for the CEQA

analysis (e.g., a 5 percent increase in the ratio of SBP employment to total employment in San Luis Obispo County when compared to the base year).

5.4-1.1.3 Methodologies

To identify potential impacts associated with employment and housing, the number of existing and projected jobs associated with the No Action Alternative and the Proposed Action, and the amount of required housing associated with the No Action Alternative and the Proposed Action were identified.

5.4-1.2 Baseline Conditions

5.4-1.2.1 Direct Employment

In 2004, a total of 24 private employers operated at the Airport, and the SBP operations supported 365 daily jobs in the following categories:

- Commercial/charter airlines (including flight crews, passenger service personnel, aircraft support personnel, ramp maintenance employees, and management),
- Ground transportation (including rental car facilities),
- Fixed-base operators (including fuel services),
- Food services (airport bar and restaurant),
- Government agencies (including SBP staff, fire and police services, and FAA airport traffic control tower, and Transportation Security Agency personnel),
- Aviation supplies and services (including avionics sales and repair, fuel sales, aircraft cleaning and maintenance), and
- Flight instruction and pilot supplies.

In addition to daily employment, contractors were also engaged to carry out various capital projects during the year. Table 5.4-1-1 summarizes the estimated number of Airport jobs by employment sector.

As discussed in Chapter 4, Affected Environment, the economy in San Luis Obispo County is largely based on four types of industry: tourism, education, government, and retail services. In 2004, San Luis Obispo County itself was the top-ranked employer providing 3,200 jobs. By comparison, Mid-state Bank & Trust was ranked as number 20 on the County's list of top employers by providing 464 jobs in the finance and insurance industry. A total of 365 persons were employed in 2004 to support SBP activities and operations (McPheters, 2004). If the combined on-airport employers were considered as a single entity, the Airport would be considered a major employer in the County.

TABLE 5.4-1-1
EMPLOYMENT AT SAN LUIS OBSIPO COUNTY REGIONAL AIRPORT IN 2004

Employment Sector	Employees	Percentage of Total Employees
Airport Businesses (Private Employees)	288	79%
Airport Administration (Federal, State and Local Government Employees)	59	16%
On-Site Contractors	18	5%
TOTAL	**365**	**100%**

NOTE: Data in the table are based on the results of a survey distributed to on-site Airport businesses and agencies.

SOURCE: McPheters, 2004

Most employees work on-site at SBP, however, some employees may spend a portion of the work day at other locations. Examples include airline flight crews who may begin or end a flight at the airport, and ground transportation personnel, such as taxi and van drivers, who bring or convey passengers to and from off-site locations. Although no residential survey has been completed, this analysis assumes that all SBP employees reside within San Luis Obispo County. This assumption was made to provide a conservative analysis.

5.4-1.2.2 Secondary Employment

Direct employment at the airport generates secondary employment, including indirect employment through firms that provide business supplies and services in support of Airport operations and travelers. Induced employment is created whenever an aviation-related firm or agency purchases supplies and services locally, pays wages to its workers, or undertakes capital expenditures. Table 5.4-1-2 summarizes the economic benefits of SBP calculated based on the number of direct jobs currently at the Airport.

TABLE 5.4-1-2
TOTAL EMPLOYMENT RESULTING FROM SBP OPERATIONS

Employment Sector	Employees
Direct Employment	365
Indirect Employment	511
Induced Employment	657
TOTAL	**1,533**

NOTE: Using the methodology developed for previous airport master plans, indirect employment was calculated using a factor of 1.4 as compared to direct employment, and induced employment was calculated using a factor of 1.8 as compared to direct employment.

SOURCE: McPheeters, 2004; ESA 2005.

5.4-1.2.3 Regional Employment

Since 1993, the unemployment rate in San Luis Obispo County has been consistently lower than California as a whole. As described in Section 4, Affected Environment, San Luis Obispo's economy is based largely on tourism and education, and the Airport plays an important role in supporting these sectors of the economy. Industry projections through the year 2023 indicate that the total employment for San Luis Obispo County will increase at an average annual range of 1.8 percent to yield of total work force of 198,250 in 2023. Table 5.4-1-3 presents the projected employment for the period during the periods associated with the Airport Master Plan.

TABLE 5.4-1-3
TOTAL PROJECTED EMPLOYMENT IN SAN LUIS OBISPO COUNTY THUR 2023

Employment Year	Projected Employment Countywide
2004	141,257
2005	143,800
2010	157,215
2015	171,883
2023	198,250

SOURCE: Coffman and Associates, 2005; U.S. Census Bureau; California State Department of Finance, Demographic Unit.

Based on the data shown above, the 365 permanent jobs at SBP in 2004 accounted for approximately 0.024 percent of the labor force of San Luis Obispo County as a whole.

5.4-1.2.4 Housing

San Luis Obispo County has sustained enormous growth over the past two decades. During the period from 1990 to 2000, the number of housing units increased from 84,385 to 96,793 (U.S. Census Bureau, 2000), for a total increase of 14.7 percent. More recent census data indicate that the county included 105,976 housing units in 2002, indicating an additional increase of 9.4 percent in the number of housing units (U.S. Census Bureau, 2005).

The overall housing element goal as set forth in the County's General Plan is to achieve an adequate supply of safe and decent housing that is affordable to all residents of San Luis Obispo County. To achieve this goal, the County has established a Regional Housing Needs Plan that will facilitate the development of 3,554 new housing units to accommodate residents of various income levels by January 1, 2009 (San Luis Obispo County, 2004). Regional housing goals beyond 2009 were not available.

5.4-1.3 Impacts and Mitigation

5.4-1.3.1 No Action Alternative

The No Action Alternative assumes that the Proposed Action would not occur, and only previously approved projects would be developed. Projects components associated with the No Action Alternative that would lead to the creation of additional permanent employment include the development of a new fixed base operator and fuel storage facility, and the development of a new terminal building and parking structure. In addition, the number of enplanements would be expected to increase.

Permanent Employment

Based on the increased number of enplanements and discussions with airport staff, approximately 20 new permanent jobs would be created by the No Action Alternative. Assuming that each of these new employees would require housing in San Luis Obispo County, approximately 20 new housing units would be required to accommodate these additional residents.

Although some construction employment would be required to create the components including within the No Action Alternative, these jobs would be temporary, based on the level-of-effort and construction schedule associate with the specific project component. These jobs would not contribute to permanent employment.

Secondary and Induced Employment

Based on the number of additional permanent jobs associated with the No Action Alternative, 28 indirect jobs would be created indirectly through firms that provide services to support airport operations and travelers, and 36 induced jobs would be created through the purchase of local goods or services to support aviation related firms or agencies.

Employees holding indirect or induced jobs resulting from the No Action Alternative would not create additional demands on the San Luis Obispo County Housing stock, since it is assumed that these jobs would be held by residents who already reside in the County. Therefore, secondary employment would not generate a need for new housing in San Luis Obispo County.

5.4-1.3.2 Proposed Action

Phase I (2005 – 2010)

Phase I of the Proposed Action would include the construction of airside facilities including the extension of Runway 11 and Taxiway A, grading and filling activities to accommodate safety areas, and other aviation support facilities. However, none of these improvements would create the need for additional permanent employees. As described in Section 2, Purpose and Need for the Proposed Action, the projected increase in the number of enplanements associated with Phase I of the Proposed Action is the same as for the No Action Alternative.

Impact 5.4-1-1: Increased Permanent Employment

NEPA Analysis

Compared to the No Action Alternative, there would be no change in the number of employees or subsequent demand for housing stock. The same number of permanent employees would be required to accommodate the projected increase in enplanements and to operate the facilities would not change. Although construction of the Phase I project components would create temporary employment during construction, these jobs would not be permanent. Therefore, the change in permanent employment would be less than significant.

CEQA Analysis

Compared to Baseline Conditions, Phase I of the Proposed Action would create 20 additional jobs. Approximately 28 indirect jobs and 26 induced jobs also would be created. As shown on Table 5.4-1-2, the number of jobs in San Luis Obispo County is projected to increase by 13,415 during the period from 2005 to 2010. A significant impact would occur if the projected increase in employment at SBP would cause the ratio of SBP employees compared to the total employment in San Luis Obispo County to increase by more than 5 percent compared to the base year. Under Baseline Conditions, the labor force at SBP would account for 0.24 percent of the County's 141,257 jobs. Under Phase I of the Proposed Action, SBP would support a total of 385 of the County's 157,215 jobs in the year 2010, or approximately 0.27 percent of the total number of jobs in the County. The increase in jobs at SBP between 2004 (the base year used for analysis) and 2010 is 0.03 percent. Therefore, this increase is less than significant.

Mitigation Measure 5.4-1-1: None required.

Impact 5.4-1-2: Increased Demand for Housing Stock

NEPA Analysis

Compared to the No Action Alternative, there would be no change in the demand for housing stock in San Luis Obispo County as result of the Phase I project components. Temporary construction jobs associated with the Phase I project components would be held by those who already reside in the County or nearby. Therefore, the increased demand for housing stock is considered to be less than significant.

CEQA Analysis

The additional 20 employees at SBP associated with Phase I of the Proposed Action could lead to an increased need for up to 20 additional housing units to accommodate permanent employees. Temporary construction workers and those holding indirect or induced jobs associated with Phase 1 are assumed to reside in the county already.

If the 20 additional permanent jobs resulted in the need for 20 additional housing units, it would represent approximately 0.5 percent of the 3,554 units identified for development in the County's

General Plan during the period from 1994 to 2009. Therefore, this increased demand for housing stock is less than significant.

Mitigation Measure 5.4-1-2: None required.

Impact 5.4-1-3: Relocation of Businesses

NEPA Analysis

Compared to the No Action Alternative, the Proposed Action would result in the relocation of several existing businesses on properties that would be acquired for the extension of Runway 11 and for runway protection purposes. If the County is required to relocate these existing businesses, the relocations would be accomplished in accordance with the Uniform Relocation and Real Properties Acquisition Assurances Act of 1970. Therefore, the potential for relocation of businesses would be a less than significant impact.

CEQA Analysis

Compared to Baseline Conditions, the Proposed Action would result in the relocation of several existing businesses on properties that would be acquired for the extension of Runway 11 and for runway protection purposes. If the County is required to relocate these existing businesses, the relocations would be accomplished in accordance with the Uniform Relocation and Real Properties Acquisition Assurances Act of 1970. Therefore, the potential for relocation of businesses would be a less than significant impact.

Mitigation Measure 5.4-1-3: None required.

Phase II (2011 – 2023)

Impact 5.4-1-1: Increased Employment

The number of new jobs at SBP following Phase II development is almost entirely associated with the projected changes in enplanements. Most project components would support existing aircraft operations by improving infrastructure rather than create additional services that would require additional employees. Based on discussions with Airport staff, approximately 20 new jobs would be created by Phase II project components. Approximately 24 indirect and 36 induced jobs would also be created.

CEQA Analysis

As shown on Table 5.4-1-2, the number of jobs in San Luis Obispo County is projected to increase by 41,035 the period from 2011 to 2023. Under Baseline Conditions, the labor force at SBP would account for 0.24 percent of the County's 141,257 jobs. Under Phase II of the Proposed Action, SBP would support a total of 405 of the County's 198,250 jobs in the year 2023, or approximately 0.20 percent of the total number of jobs in the County. Although the number of jobs at SBP would increase during Phase II, the rate of increase would be less than the rate of increase for the County as a whole. Therefore, this increase is less than significant.

Mitigation Measure 5.4-1-1: None required.

Impact 5.4-1-2: Increased Demand for Housing Stock

The additional 20 employees at SBP associated with Phase II of the Proposed Action could lead to an increased need for up to 20 additional housing units. No increase in housing demand would be required to accommodate construction workers or those associated with indirect or induced employment.

Although the number of new housing units created after January 1, 2009 is unknown at this time, it is likely that at least the same number of units would be created between the period from 2011 to 2023. Therefore, the additional demand for housing stock would represent approximately 0.5 percent of the 3,554 units identified for development in existing County's General Plan. Therefore, this increased demand for housing stock is less than significant.

Mitigation Measure5.4-1-2: None required.

Impact 5.4-1-3: Relocation of Businesses

CEQA Analysis

Compared to Baseline Conditions, no additional properties would be acquired under Phase II of the Proposed Action. Therefore, no relocation of existing businesses would occur and would be a less-than-significant impact.

Mitigation Measure 5.4-1-3: None required.

5.4-1.4 Summary of Impacts

Table 5.4-1-4 summarizes employment impacts as they relate to implementation of Phase I and Phase II of the Proposed Action.

For Phase I of the Proposed Action, employment impacts compared to the No Action Alternative would be less than significant. Compared to Baseline Conditions, both Phase I and Phase II of the Proposed Action would result in less than significant employment impacts and no mitigation is warranted.

TABLE 5.4-1-4
EMPLOYMENT IMPACT SUMMARY MATRIX

Impact	Phase I (2005-2010)		Phase II (2011-2023)
	Compared to No Action Alternative	Compared to Baseline Conditions	Compared to Baseline Conditions
Increased Permanent Employment	No change in the number of employees	LTS	LTS
Increased Demand for Housing Stock	No change in the demand for housing stock	LTS	LTS
Relocation of Businesses	Relocation of existing businesses would be accomplished in accordance with the Uniform Relocation and Real Properties Acquisition Assurances Act of 1970	LTS	LTS

LTS = Less than significant
N/A = Not Applicable
S = Significant

SOURCE: ESA, 2006

5.4-2 Public Services

5.4-2.1 Background and Methodology

5.4-2.1.1 Regulatory Context

For a discussion of the regulatory context for public services, see Appendix O.

5.4-2.1.2 Thresholds of Significance

5.4-2.1.2.1 NEPA Thresholds

Determining significance under NEPA is guided by FAA Order 1050.1E, *Environmental Impacts: Policies and Procedures, Section 15,* which states that, a major airport development proposal could potentially have induced or secondary impacts on public services in surrounding communities. Normally, induced socioeconomic impacts on public services would not be considered significant unless there were significant impacts in other categories, such as land use or direct social impacts. For purposes of analysis, an action is considered to have a significant impact on public services if construction of major new facilities, such as a permanent new school building or hospital building, is required to accommodate the projected demand from the action.

5.4-2.1.2.2 CEQA Thresholds

The CEQA *Guidelines* state that a project may be deemed to have a significant effect on public services if project construction could cause significant environmental impacts in order to maintain acceptable service ratios, response times, or other performance objectives for any of the public services.

5.4-2.1.3 Methodologies

Based on the NEPA and CEQA significance criteria, the impact discussion will focus on whether major new facilities (e.g., school or hospital) would be required to accommodate projected demand and whether construction of new facilities could cause significant environmental impacts in order to maintain acceptable service ratios, response times, or other performance objectives.

5.4-2.2 Baseline Conditions

5.4-2.2.1 Schools

The Airport is within the San Luis Coastal Unified School District (SLCUSD). The SLCUSD operates a total of 15 schools (on 14 campuses), including 10 elementary schools, two middle schools, and three high schools. Of these, seven elementary schools, one middle school and two high schools serve the Airport vicinity. Table 5.4-2.1 compares current enrollment to intended capacity at the schools that serve the Airport vicinity. As the table indicates, all but one of the schools are under capacity. Although San Luis Obispo High School is slightly over capacity, high

TABLE 5.4-2.1
SCHOOLS WITHIN THE AIRPORT VICINITY

School	Capacity	Enrollment (06/16/05)	Percent Capacity
Elementary Schools			
Bishop's Peak / C.E. Teach[1]	350 / 171	310 / 84	89 / 49
Hawthorne	350	292	83
Los Ranchos	575	383	67
Pacheco	525	461	88
Sinsheimer	500	469	94
C.L. Smith	475	339	71
Laguna Middle School	850	786	92
Pacific Beach Continuation High School	100	56	56
San Luis Obispo High School	1,550	1,650	106

[1] C.E. Teach Elementary School is a separate school on the Bishop's Peak campus

SOURCE: San Luis Coastal Unified School District, 2005

school enrollments are projected to decline as the baby boom echo passes through the system (Schoolhouse Services, 2005).

5.4-2.2.2 Hospital Services

There are two hospitals within a five-mile radius of SBP. The two hospitals, French Hospital Medical Center and Sierra Vista Regional Medical Facility, are described in more detail below.

French Hospital Medical Center is located about four miles from the Airport in San Luis Obispo, just down the street from the former San Luis Obispo County General Hospital which closed in 2003. French Hospital is an acute care hospital with an in-patient bed capacity of 112 and specialties that include emergency services, a cardiac center, a family birthing center, and a women's diagnostic center (French Hospital Medical Center, 2005).

Sierra Vista Regional Medical Center is located about four miles from the Airport in San Luis Obispo. Sierra Vista Regional Medical Center has an in-patient bed capacity of 200 and provides a comprehensive range of obstetric and infant services and a full-service pediatric unit. Sierra Vista Regional Medical Center also provides comprehensive rehabilitation services that include acute inpatient as well as outpatient programs (Sierra Vista Regional Medical Center, 2005).

5.4-2.2.3 Fire Protection and Emergency Services

Fire protection and emergency services, including the airport rescue and fire fighting (ARFF) station for the Airport, are provided by the California Department of Forestry and Fire Protection (CDF)/San Luis Obispo (SLO) County Fire Department. The CDF/SLO County Fire Department

services about 2.1 million acres within San Luis Obispo County. This includes providing comprehensive fire protection for the unincorporated areas of the County, the City of Pismo Beach, and the communities of Los Osos and Avila Beach. CDF/SLO County Fire Department comprises 21 fire stations. These stations generally have two-person professional coverage 24 hours a day and 15-person paid-call firefighter companies that respond to all incidents (Lewin, 2005).

The CDF/SLO County Fire Department ARFF is located on the Airport, about 300 feet from the nearest runway, with three paid staff on duty at all times along with a paid-call fire company. Equipment at this station consists of one fire engine, one ARFF vehicle, one water tender, and one heavy rescue vehicle. The ARFF services provided by CDF/SLO County Fire Department meet or exceed FAA requirements, including the ability to be able to reach the midpoint of the furthest runway within three minutes (Lewin, 2005).

According to the CDF/SLO County Fire Department, fire protection service in the planning area is generally adequate, although onsite wells that provide water to properties in the vicinity of the Airport may not be adequate. Future commercial development in the vicinity may necessitate additional community water systems to provide required fire flow for fire hydrants.

CDF/SLO County Fire responds to all emergency medical service incidents with San Luis Ambulance Company, which provides transportation and paramedic services. Two air ambulances are available in the County; they are a California Highway Patrol (CHP) helicopter from the Paso Robles Airport and a Cal Star 7 helicopter from the Santa Maria Airport.

5.4-2.2.4 Police Protection Services

The County Sheriff and the CHP provide police services to the entire planning area. The County of San Luis Obispo Sheriff's Office, Coast Station in Los Osos, serves the Airport. Total staff at Coast Station is 22 patrol deputies, two sergeants, and one commander. The number of cars and officers on patrol varies. A typical shift at this patrol station includes two to eight deputies on patrol, plus three deputies assigned specifically to SBP (Weckerly, 2005). The CHP is primarily responsible for traffic-related calls along highways and streets in unincorporated areas of the County. They may respond upon request as backup to the sheriff, if available; however, the CHP does not normally provide police protection services. In addition, the County Sheriff has a mutual agreement with the City of San Luis Obispo Police Department.

Emergency response times for the Los Osos Coast Station are dependent on where the patrol vehicles are in relation to a call, as well as the nature of the call. Estimated response time to the Airport is 20 minutes. Currently, the Sheriff's Office is understaffed, with calls for service increasing. However, new trainees should improve staffing over time. The three sheriff deputies assigned to SBP provide coverage seven days per week, generally from 4:30 am to 10:30 pm or until the last flight of the day (Weckerly, 2005). The deputies perform patrol duties when there are no flights departing or arriving.

5.4-2.3 Impacts and Mitigation

5.4-2.3.1 No Action Alternative

In 2010, in response to increased enplanements and the new terminal building, the Airport anticipates about 20 additional employees for a total of 385 employees living in the vicinity of SBP. Assuming 2.49 persons per household (San Luis Obispo County, 2004), then the Airport would account for about 50 additional residents for a total of about 960 residents (employees and families).

Schools

The Airport would not generate much demand for additional school facilities under the No Action Alternative. During this time period, SLCUSD projects that enrollment would increase at the elementary school level, change little in grades 7-8, and decline at the high school level, reflecting the passing of the baby boom echo (Schoolhouse Services, 2005). Existing school facilities are expected to have sufficient capacity to meet the increased student demand that would be generated by new jobs at SBP under the No Action Alternative.

Hospital Services

There are two hospitals in the vicinity of SBP with an estimated service area (County) population base of about 258,127 persons (California Department of Finance, 2005). The total number of net new persons that would be served by area hospitals under the No Action Alternative is already part of the service base population of the two hospitals. New or expanded hospital facilities would not be required to serve the additional population base generated by the No Action Alternative.

Fire Protection and Emergency Services

The increase in use of the Airport (aircraft operations, passenger activity, and air cargo activity) and the construction of new facilities (i.e., new and expanded terminal facilities, new hangar facilities, etc.) would not affect the CDF/SLO County Fire Department's ability to respond to emergency medical service calls at SBP. The AARF is located at the Airport and response time would continue to meet FAA requirements.

Police Protection Services

The increase in passenger activity under the No Action Alternative at SBP would result in an increased demand for police protection services at SBP. This increase is associated with the increase in the general population within San Luis Obispo County and is not attributable to the operation of the Airport. Furthermore, the Sheriff's Office would continue to dedicate three sheriff deputies to SBP seven days per week, from about 4:30 am to 10:30 pm or until the last flight of the day (Weckerly, 2005).

5.4-2.3.2 Proposed Action

Phase I (2005 – 2010)

In response to increased enplanements and the new terminal building, the Airport anticipates about 20 additional employees for a total of 385 employees living in the vicinity of SBP under Phase I of the Proposed Action. Assuming 2.49 persons per household (San Luis Obispo County, 2004), then the Airport would account for about 50 additional residents for a total of about 960 residents (employees and families).

Impact 5.4-2-1: Increase in Demand on Schools

NEPA Analysis

In 2010, the Proposed Action would have the same number of SBP worker households within the SLCUSD as the No Action Alternative. SBP area schools have sufficient capacity to handle the expected demand for school services and construction of new or expanded permanent classroom facilities would not be required. The impact of Phase I of the Proposed Action on school services would be less than significant.

CEQA Analysis

In 2010, the Proposed Action would have 20 more SBP worker households within the SLCUSD compared to Baseline Conditions. SBP area schools have sufficient capacity to handle the expected demand for school services and construction of new or expanded permanent classroom facilities would not be required. The impact of Phase I of the Proposed Action on school services would be less than significant.

Mitigation Measure 5.4-2-1: None required.

Impact 5.4-2-2: Increase in Demand for Hospital Services

NEPA Analysis

Phase I of the Proposed Action would add the same number of new employees as the No Action Alternative. New or expanded hospital facilities would not be required to serve this population under Phase I of the Proposed Action. Therefore, demand for hospital services generated by Phase I of the Proposed Action would be a less-than-significant impact.

CEQA Analysis

Phase I of the Proposed Action would add 20 more SBP worker households within the County service area of the two hospitals. This increase is minor and new or expanded hospital facilities would not be required to serve this population under Phase I of the Proposed Action. Therefore, demand for hospital services generated by Phase I of the Proposed Action would be a less-than-significant impact.

Mitigation Measure 5.4-2-2: None required

Impact 5.4-2-3: Increase in Demand for Fire Protection and Emergency Services

NEPA Analysis

The increase in use of the Airport (aircraft operations, passenger activity, and air cargo activity) and the construction of new facilities (i.e., extended runways and taxiways, etc.) under Phase I of the Proposed Action would be comparable to the No Action Alternative and would not affect the CDF/SLO County Fire Department's ability to respond to emergencies at SBP. Because of the increased reliance on regional jet aircraft, the number of operations under Phase I of the Proposed Action would be less than under the No Action Alternative. Since the fire station is located at the Airport, response time to all portions of the Airport would continue to meet FAA requirements. Demands on fire protection and emergency services would not increase and the impact would be less than significant.

CEQA Analysis

Passenger enplanements and flight operations would increase under Phase I of the Proposed Action compared to Baseline Conditions. However, this would not affect the CDF/SLO County Fire Department's ability to respond to emergencies at SBP. Since the fire station is located at the Airport, response time to all portions of the Airport would continue to meet FAA requirements. Demands on fire protection and emergency services would not increase and the impact would be less than significant.

Mitigation Measure 5.4-2-3: None required.

Impact 5.4-2-4: Increase in Demand for Police Protection Services

NEPA Analysis

The development proposed by Phase I of the Proposed Action, given the larger overall improved area, may require changes to police and security service procedures. However, the impact of additional passenger activity would be the same as with the No Action Alternative and the numbers of commercial operations would be reduced. Furthermore, the Sheriff's Office would continue to dedicate three sheriff deputies to SBP seven days per week, from about 4:30 am to 10:30 pm or until the last flight of the day (Weckerly, 2005) and facility design would include security considerations. The increased demand on police services would be a less-than-significant impact.

CEQA Analysis

The development proposed by Phase I of the Proposed Action, given the larger overall improved area, may require changes to police and security service procedures. Passenger enplanements would also increase compared to Baseline Conditions. The Sheriff's Office would continue to dedicate three sheriff deputies to SBP seven days per week, from about 4:30 am to 10:30 pm or until the last flight of the day (Weckerly, 2005) and facility design would include security considerations. The increased demand on police services would be a less-than-significant impact.

Mitigation Measure 5.4-2-4: None required.

Phase II (2011 – 2023)

In response to increased enplanements during Phase II of the Proposed Action, the Airport anticipates 20 additional employees for a total of 405 employees living in the vicinity of SBP. Assuming 2.49 persons per household (San Luis Obispo County, 2004), then the Airport would account for about 100 additional residents for a total of about 1010 residents (employees and families).

Impact 5.4-2-1: Increase in Demand on Schools

CEQA Analysis

Phase II of the Proposed Action would add 40 additional worker households within the SLCUSD, compared to Baseline Conditions. SBP area schools have sufficient capacity to handle the expected demand for school services and construction of new or expanded permanent classroom facilities would not be required. The impact of Phase II of the Proposed Action on school services would be less than significant.

Mitigation Measure 5.4-2-1: None required

Impact 5.4-2-2: Increase in Demand for Hospital Services

CEQA Analysis

Phase II of the Proposed Action would add 40 more SBP worker households within the County service area of the two hospitals, compared to Baseline Conditions. This increase is minor and new or expanded hospital facilities would not be required to serve this population under Phase II of the Proposed Action. Therefore, increased demand for hospital services would be a less-than-significant impact.

Mitigation Measure 5.4-2-2: None required

Impact 5.4-2-3: Increase in Demand for Fire Protection and Emergency Services

CEQA Analysis

Passenger enplanements and flight operations would increase under Phase II of the Proposed Action compared to Baseline Conditions. However, this would not affect the CDF/SLO County Fire Department's ability to respond to emergencies at SBP. Since the fire station is located at the Airport, response time to all portions of the Airport would continue to meet FAA requirements. Demands on fire protection and emergency services would not increase and the impact would be less than significant.

Mitigation Measure 5.4-2-3: None required.

Impact 5.4-2-4: Increase in Demand for Police Protection Services

CEQA Analysis

The development proposed by Phase II of the Proposed Action may require changes to police and security service procedures. Passenger enplanements would also increase compared to Baseline Conditions. The Sheriff's Office would continue to dedicate three sheriff deputies to SBP seven days per week, from about 4:30 am to 10:30 pm or until the last flight of the day (Weckerly, 2005) and facility design would include security considerations. The increased demand on police services would be a less-than-significant impact.

Mitigation Measure 5.4-2-4: None required.

5.4-2.4 Summary of Impacts

Table 5.4-2.2 summarizes impacts to public services as they relate to Phase I and Phase II of the Proposed Action.

TABLE 5.4-2.2
PUBLIC SERVICES IMPACTS SUMMARY MATRIX

	Phase I (2005-2010)		Phase II (2011-2023)
Impact	**Compared to No Action Alternative**	**Compared to Baseline Conditions**	**Compared to Baseline Conditions**
Increase in Demand for Schools	No increase in the demand for schools	LTS	LTS
Increase in Demand for Hospital Services	No increase in the demand for hospital services	LTS	LTS
Increase in Demand for Fire Protection and Emergency Services	No increase in the demand for fire protection and emergency services	LTS	LTS
Increase in Demand for Police Services	No increase in the demand for police services	LTS	LTS

LTS = Less than significant
N/A = Not Applicable
S = Significant

SOURCE: ESA, 2006

For Phase I of the Proposed Action, the demand for schools and hospital services would be similar to the demand under the No Action Alternative; demand for fire protection, emergency services, and police protection services would be slightly greater than demand under the No Action Alternative. Compared to Baseline Conditions, both Phase I and Phase II of the

Proposed Action would generate slightly increased demand for schools and hospital services; demand for fire protection, emergency services, and police protection would increase somewhat proportional to the increase in facility size, passenger enplanements, and aircraft operations. However, the demands on schools and hospital services is minor compared to the service area population and demands on fire protection, emergency services, and police protection will be met by the on-site staff and facilities dedicated to providing services to SBP. Therefore, impacts related to public services would be less than significant and no mitigation is warranted.

5.4-3 Utilities (CEQA Only)

5.4-3.1 Background and Methodology

5.4-3.1.1 Regulatory Context

For a discussion of the regulatory context for compatible land use, see Appendix O.

5.4-3.1.2 Thresholds of Significance

The CEQA *Guidelines* state that a project may be deemed to have a significant effect if it were to exceed wastewater treatment standards of the applicable RWQCB or require construction of new water or wastewater systems (the construction of which would cause significant environmental effects).

5.4-3.1.3 Methodologies

Based on the NEPA and CEQA criteria, the impact discussion will focus on whether major new facilities (e.g., water or wastewater systems) would be required to accommodate projected demand and whether utility construction could cause significant environmental impacts in order to maintain acceptable wastewater treatment or water supply standards. Water use is based on Airport records and wastewater generation is assumed to be at historic levels of about 75 percent of water consumption.

5.4-3.2 Baseline Conditions

5.4-3.2.1 Water

The Airport is located in the San Luis Obispo Creek Ground Water Basin. The groundwater condition underlying the project site and the project's potential impacts to groundwater resources are discussed in Section 5.6, Water Quality. Currently, the water supply for the Airport comes from the City of San Luis Obispo. The City supply of water comes from Whale Rock Reservoir and Salinas Reservoir, with a small contribution coming from municipal groundwater wells. The City treats the surface water at its treatment plant and delivers potable water to the Airport via a 12-inch line in Broad Street (Gilmore, 2005). The County has entered into an agreement with the City regarding the provision of water to the Airport. In accordance with the Sewer and Water Agreement between the City and the County, water to the Airport is limited to 70,300 gallons per day (City and County, 1977). The Airport currently uses about 9,500 gallons of water per day and has implemented a water conservation program to reduce water usage (Pehl, 2005).

5.4-3.2.2 Wastewater

The City of San Luis Obispo Water Reclamation Facility provides treatment and disposal of sanitary and industrial wastewater from the Airport. Commercial and industrial wastes discharged to the City's wastewater system must comply with the City's Industrial Waste and Wastewater

Pretreatment Program. The City's wastewater treatment plant currently has a dry weather treatment capacity of 5.2 million gallons per day (Gilmore, 2005). The wastewater treated at the treatment plant meets federal and state regulations regarding wastewater quality and effluent disposal. The wastewater system at the Airport includes an 8-inch line that serves the entire Airport. The Sewer and Water Agreement between the City and County limits peak wet weather sewer effluent flows to 50,000 gallons per day (City and County, 1977). Current wastewater generated at the Airport during dry weather is estimated to be about 7,130 gallons per day.

5.4-3.3 Impacts and Mitigation

5.4-3.3.1 No Action Alternative

Water

With the forecasted increase in the number of passengers at SBP, there would be a corresponding increase in water consumption at SBP, as well as a smaller increase from a larger terminal building. Assuming no increased benefit from water conservation measures, in 2010 SBP is estimated to consume about 12,350 gallons of water per day under the No Action Alternative. This is well under the 70,300 gallons per day permitted under the 1977 agreement between the City and County and would be accommodated by the existing water system.

Wastewater

Wastewater generation is typically considered to increase in proportion to water consumption. Therefore, wastewater increase would also be proportion to the forecasted increase in the number of passengers at SBP. Assuming no reduction in wastewater resulting from water conservation measures, in 2010 SBP is estimated to generate about 9,270 gallons of wastewater per day under the No Action Alternative. This is well under the 50,000 gallons per day permitted under the 1977 agreement between the City and County and would be accommodated by the existing water system.

5.4-3.3.2 Proposed Action

Phase I (2005 – 2010)

Impact 5.4-3-1: Increase in Water Demand

CEQA Analysis

Under Phase I of the Proposed Action, passenger enplanements are expected to increase about 30 percent compared to Baseline Conditions and water consumption would be expected to increase proportionally. However, such an increase would be well within the limits agreed to by the City and County and would be accommodated by the existing water system. Since no additional major water lines are required and the increase in demand would be accommodated, the impact of the Phase I of the Proposed Action on the water system would be less than significant.

Mitigation Measure 5.4-3-1: None required.

Impact 5.4-3-2: Increase in Wastewater Generation

CEQA Analysis

Under Phase I of the Proposed Action, passenger enplanements are expected to increase about 30 percent compared to Baseline Conditions and wastewater generation would be expected to increase proportionally to enplanements and water consumption. However, such an increase would be well within the limits agreed to by the City and County and would be accommodated by the existing wastewater conveyance system. Since no additional major wastewater conveyance lines are required and the increase in demand would be accommodated, the impact of Phase I of the Proposed Action on the wastewater system would be less than significant.

Mitigation Measure 5.4-3-2: None required

Phase II (2011 – 2023)

Impact 5.4-3-1: Increase in Water Demand

CEQA Analysis

Under Phase II of the Proposed Action, passenger enplanements are expected to increase about 84 percent compared to Baseline Conditions and water consumption would be expected to increase proportionally. However, the projected water demand of about 17,480 gallons per day would be well within the limits agreed to by the City and County and would be accommodated by the existing water system. Since no additional major water lines are required and the increase in demand would be accommodated, the impact of the Phase II of the Proposed Action on the water system would be less than significant.

Mitigation Measure 5.4-3-1: None required.

Impact 5.4-3-2: Increase in Wastewater Generation

CEQA Analysis

Under Phase II of the Proposed Action, passenger enplanements are expected to increase about 84 percent compared to Baseline Conditions and wastewater generation would be expected to increase proportionally to enplanements and water consumption. However, the projected wastewater generation of about 13,120 gallons per day would be well within the limits agreed to by the City and County and would be accommodated by the existing wastewater conveyance system. Since no additional major wastewater conveyance lines are required and the increase in demand would be accommodated, the impact of Phase II of the Proposed Action on the wastewater system would be less than significant.

Mitigation Measure 5.4-3-2: None required

5.4-3.4 Summary of Impacts

Table 5.4-3.1 summarizes the utilities impacts as they relate to Phase I and Phase II of the Proposed Action. For Phase I of the Proposed Action, water demand and wastewater generation would be similar to the No Action Alternative. Compared to Baseline Conditions, both Phase I and Phase II of the Proposed Action would increase water demand and wastewater consumption. However, these increases, even in 2023, would be well within the allowances of the 1977 agreement between the City and the County and would be accommodated by the existing utility systems. The impacts to the water and wastewater systems would be less than significant and no mitigation is warranted.

TABLE 5.4-3.1
UTILITIES IMPACTS SUMMARY MATRIX

	Phase I (2005-2010)		Phase II (2011-2023)
Impact	**Compared to No Action Alternative**	**Compared to Baseline Conditions**	**Compared to Baseline Conditions**
Increase in Water Consumption	N/A	LTS	LTS
Increase in Wastewater Generation	N/A	LTS	LTS

LTS = Less than significant
N/A = Not Applicable
S = Significant

SOURCE: ESA, 2006

5.5 Air Quality

This section provides an overview of existing air quality conditions within the Airport vicinity and surrounding region, associated regulatory framework, and an analysis of potential air quality impacts that would result from implementation of the No Action Alternative and the Proposed Action. This section also evaluates the potential impacts of the Proposed Action on regional and local air quality from both stationary and mobile sources of air emissions, including temporary impacts due to construction of project components and long-term impacts due to Airport operations. This section is based on review of existing documentation of air quality conditions in the region and air quality regulations of the United States Environmental Protection Agency (EPA), the California Air Resources Board (CARB), and the San Luis Obispo County Air Pollution Control District (SLOCAPCD).

Air quality is a function of both the rate and location of pollutant emissions under the influence of meteorological conditions and topographic features effecting pollutant movement and dispersal. Atmospheric conditions such as wind speed, wind direction, atmospheric stability, and air temperature gradients interact with the physical features of the landscape to determine the movement and dispersal of air pollutants, and consequently affect air quality. Additional information, including project setting, is found in Appendix E.

5.5.1 Background and Methodology

5.5.1.1 Regulatory Context (see also Appendix O)

Air Quality Standards

Regulation of air pollution is achieved through both federal and state ambient air quality standards and emission limits for individual sources of air pollutants. An "ambient air quality standard" represents the level of air pollutant in the outdoor (ambient) air necessary to protect public health. These ambient standards do not apply to indoor environments.

As required by the federal Clean Air Act, the EPA has identified criteria pollutants and established National Ambient Air Quality Standards (NAAQS or national standards) to protect public health and welfare. NAAQS have been established for ozone, CO, nitrogen dioxide (NO_2), sulfur dioxide (SO_2), PM10, PM2.5, and lead. These pollutants are called "criteria" air pollutants because standards have been established for each of them to meet specific public health and welfare criteria.

The NAAQS are defined as the maximum acceptable concentration that may be reached, but not exceeded more than once per year. California has adopted more stringent ambient air quality standards for most of the criteria air pollutants (CAAQS or state standards). The pollutants of greatest concern in the Airport vicinity are ozone, and PM10. State and federal ambient air quality standards are summarized in Table 5.5-1, which also provides a brief discussion of the related health effects and principal sources for each pollutant.

TABLE 5.5-1
STATE AND NATIONAL CRITERIA AIR POLLUTANT STANDARDS, EFFECTS, AND SOURCES

Pollutant	Averaging Time	State Standard	National Standard	Pollutant Health and Atmospheric Effects	Major Pollutant Sources
Ozone	1 Hour 8 Hour	0.09 ppm 0.07 ppm	0.12 ppm 0.08 ppm	High concentrations can directly affect lungs, causing irritation. Long-term exposure may cause damage to lung tissue.	Formed when reactive organic gases and nitrogen oxides react in the presence of sunlight. Major sources include on-road motor vehicles, solvent evaporation, and commercial / industrial mobile equipment.
Carbon Monoxide (CO)	1 Hour 8 Hour	20 ppm 9.0 ppm	35 ppm 9 ppm	Classified as a chemical asphyxiant, carbon monoxide interferes with the transfer of fresh oxygen to the blood and deprives sensitive tissues of oxygen.	Internal combustion engines, primarily gasoline-powered motor vehicles.
Nitrogen Dioxide (NO_2)	1 Hour Annual	0.25 ppm –	– 0.053 ppm	Irritating to eyes and respiratory tract. Colors atmosphere reddish-brown.	Motor vehicles, petroleum-refining operations, industrial sources, aircraft, ships, and railroads.
Sulfur Dioxide (SO_2)	1 Hour 3 Hour 24 Hour Annual	0.25 ppm – 0.04 ppm –	– 0.5 ppm 0.14 ppm 0.03 ppm	Irritates upper respiratory tract; injurious to lung tissue. Can yellow the leaves of plants, destructive to marble, iron, and steel. Limits visibility and reduces sunlight.	Fuel combustion, chemical plants, sulfur recovery plants, and metal processing.
Respirable Particulate Matter (PM10)	24 Hour Annual	50 $\mu g/m^3$ 20 $\mu g/m^3$	150 $\mu g/m^3$ 50 $\mu g/m^3$	May irritate eyes and respiratory tract, decreases in lung capacity, cancer and increased mortality. Produces haze and limits visibility.	Dust and fume-producing industrial and agricultural operations, combustion, atmospheric photochemical reactions, and natural activities (e.g., wind-raised dust and ocean sprays).
Fine Particulate Matter (PM2.5)	24 Hour Annual	– 12 $\mu g/m^3$	65 $\mu g/m^3$ 15 $\mu g/m^3$	Increases respiratory disease, lung damage, cancer, and premature death. Reduces visibility and results in surface soiling.	Fuel combustion in motor vehicles, equipment, and industrial sources; residential and agricultural burning; Also, formed from photochemical reactions of other pollutants, including nitrogen oxides, sulfur oxides, and organics.
Lead (Pb)	Month Quarter	1.5 $\mu g/m^3$ –	– 1.5 $\mu g/m^3$	Disturbs gastrointestinal system, and causes anemia, kidney disease, and neuromuscular and neurological dysfunction.	Present source: lead smelters, battery manufacturing & recycling facilities. Past source: combustion of leaded gasoline.

ppm = parts per million; $\mu g/m^3$ = micrograms per cubic meter

SOURCE: California Air Resource Board, January 9, 2003, http://www.arb.ca.gov/aqs/aaqs2.pdf

General Conformity

Regulation of emission sources associated with an airport is a responsibility that is shared among federal, state, and regional agencies. Under the federal Clean Air Act (CAA) Amendments of 1990, federal agencies must make a determination of conformity with the applicable State Implementation Plan (SIP) before taking any action on a proposed project (e.g., setting aside money, granting a permit, etc.). EPA published a rule (referred to as the General Conformity Rule) that indicates how most federal agencies are to make such a determination. The criteria for determining the conformity of such actions state that a conformity determination must be performed when the emissions caused by a federal action (the "net" emissions when proposed action emissions are compared to no-action emissions) equal or exceed what are known as *de minimis* levels. If emissions are below the *de minimis* levels, it can be presumed that the proposed action conforms to the CAA. If emissions are above the *de minimis* levels, a conformity demonstration must be prepared.

The Federal Aviation Administration (FAA) has the responsibility for applying the General Conformity Rule to federal actions involving airport development; however, the General Conformity Rule does not apply to this project because San Luis Obispo County has been designated as attainment or unclassified for all of the existing NAAQS. In other words, there is no applicable SIP with which to judge conformity in San Luis Obispo County, and the FAA is not required to make a conformity determination under the rule.

Transportation conformity is the process used to ensure that states consider the air quality effects of motor vehicle-related transportation plans, programs and projects. The conformity process is applicable to federal actions related to these plans, programs and projects and to projects developed, funded or approved under Title 23 of the United States Code (U.S.C.) or the Federal Transit Act (49 U.S.C. 1601). A motor vehicle emissions budget (one component of an attainment demonstration SIP) is used to determine the air quality effects of such projects. For applicable roadway projects within non-attainment areas to move beyond the design stage, the projects must be included in the area's long range transportation plan (LRTP) and transportation improvement plan (TIP). Further, the TIP must have been found to conform to the area's motor vehicle air pollutant budget, which is contained in the SIP. Again, the Transportation Conformity Rule does not apply because San Luis Obispo County has been designated as attainment or unclassified for all of the existing NAAQS.

5.5.1.2 Thresholds of Significance

Potential sources for significance criteria include FAA Order 1050.1E, *Environmental Impacts: Policies and Procedures* and the FAA's *Airport Environmental Handbook*, the CEQA *Guideline*, and the *CEQA Air Quality Handbook* published by the San Luis Obispo County APCD.

5.5.1.2.1 NEPA Thresholds

FAA Order 5050.4A (*Airport Environmental Handbook*) provides the basis for determining the scope of the agency's review of air quality impacts under NEPA (U.S. Department of

Transportation, 1985). The *Airport Environmental Handbook* does not include significance criteria, per se, but rather cites the agency's responsibilities with respect to the General Conformity Rule, identifies criteria for determining whether to perform a detailed air quality analysis, and cites the agency's responsibilities under the Airport and Airway Improvement Act of 1982. FAA Order 1050.1E (*Environmental Impacts: Policies and Procedures*) states the following regarding air quality: An air quality assessment prepared for inclusion in a NEPA environmental document should include an analysis and conclusions of a Proposed Action's impacts on air quality. When a NEPA analysis is needed, the Proposed Action's impact on air quality is assessed by evaluating the impact of the proposed action on the NAAQS. The proposed action's "build" and "no-build" emissions are inventoried for each reasonable alternative. Normally, further analysis would not be required for pollutants where emissions do not exceed general conformity thresholds. However, based on the nature of the project and consultation with State and local air quality agencies additional analysis may be deemed appropriate.

As discussed above, the General Conformity Rule does not apply in San Luis Obispo County because the County is "attainment" or "unclassified" for all of the national ambient air quality standards, and therefore, has no applicable SIP. With respect to determining the extent of analysis needed for NEPA purposes, Chapter 5, Paragraph 47(e)(5)(c) of the *Airport Environmental Handbook* indicates that no air quality analysis is needed if, for a commercial service airport, activity forecasts predict fewer than 1.3 million passengers and 180,000 general aviation operations annually. By 2010, SBP is expected to serve approximately 0.4 million passengers and 103,900 general aviation operations on an annual basis. Since these estimates would be well below their corresponding activity thresholds, no air quality analysis is needed under NEPA. Therefore, the air quality analysis that is provided herein to meet CEQA requirements will more than satisfy the corresponding NEPA requirement.

5.5.1.2.2 CEQA Thresholds

The CEQA *Air Quality Handbook* indicates that a project may be deemed to have a significant effect on the environment if it would violate any ambient air quality standard, contribute substantially to an existing or projected air quality violation, or expose sensitive receptors to substantial pollutant concentrations. Direct comparisons with ambient air quality standards, which are defined in terms of pollutant concentrations, require use of dispersion modeling techniques, and since dispersion modeling is not necessary or appropriate in every circumstance, emissions-based thresholds, in terms of pounds or tons per day or year, are often used instead.

For those reasons, the SLOCAPCD recommends that an increase in emissions of reactive organic gases (ROG), NO_x, SO_2, or PM10 be evaluated through a tiered system. An increase in emissions of more than 10 pounds per day of ROG, NO_x, SO_2, or PM10 would be considered potentially significant, while an increase in CO emissions of more than 550 pounds per day would be considered significant (SLCOAPCD, 2003). An increase in emissions greater than these thresholds may require mitigation measures depending on the level of emission increases. For construction-related emissions, different criteria apply: 185 pounds per day or 2.5 tons per quarter of ROG or NO_x and 2.5 tons per quarter of PM10 (SLOCAPCD, 2003). The District has

established four separate categories of evaluation for determining the significance of project impacts:

- Comparison of calculated project emissions to District emission thresholds;
- Consistency with the most recent Clean Air Plan for San Luis Obispo County;
- Comparison of predicted ambient pollutant concentrations resulting from the project to state and federal health standards, when applicable; and
- The evaluation of special conditions which apply to certain projects such as emissions of hazardous air pollutants, emissions of diesel particulate matter, demolition involving asbestos containing material, material with naturally occurring asbestos, locations near sensitive receptors, and odor impacts.

5.5.1.3 Methodologies

Emission inventories provide an estimate of increases and decreases in air pollutants and pollutant precursors by allowing a comparison of emissions with and without a proposed action. For the analysis of the Proposed Action, operational-related emission inventories were prepared for the air pollutants and pollutant precursors of CO, volatile organic compounds (VOC), NO_x, SO_2, PM10, and PM2.5. The air pollutant and pollutant precursor inventories include emissions from sources that would be directly affected by the Proposed Action: aircraft, ground support equipment (GSE), and motor vehicles. An inventory of emissions related to construction activities was also prepared. Supporting information for the operational emission calculations is contained in Appendix F. For NEPA, the difference in air emissions between the Proposed Action and the No Action Alternative are compared to the NEPA Thresholds. For CEQA, the difference in air emissions between the Proposed Action and the Baseline Conditions are compared to the CEQA Thresholds.

5.5.2 Baseline Conditions

The Baseline Conditions are defined as 2004 emission levels. Table 5.5-2 presents the estimated annual emissions under the Baseline Conditions.

TABLE 5.5-2
ESTIMATED BASELINE CONDITIONS EMISSIONS

Baseline Conditions	Average Annual Emissions (tons)					
	ROG	NOx	CO	SO2	PM10	PM2.5
Daily	0.16	0.23	4.05	0.02	0.02	0.02
Annual	60	84	1,479	8	6	6

SOURCE: ESA, 2005

5.5.3 Impacts and Mitigation

Air quality impacts associated with the Proposed Action would primarily be associated with short-term construction and operation-related activities (aircraft-related and motor vehicles). Proposed Action-related air quality impacts were evaluated within the area consisting of the Airport. Emission changes were estimated for all sources affected by the Proposed Action. The detailed emission calculation assumptions and background data for emission sources are contained in Appendix F. For purposes of this analysis, two years were analyzed: 2010 and 2023. It is expected that the Proposed Action would be fully initiated by 2023.

5.5.3.1 No Action Alternative

The No Action Alternative assumes that the Proposed Action would not occur at SBP. However, with or without the Master Plan improvements, the number of annual passengers and operations at SBP is projected to increase, as is the use of regional jet aircraft. Therefore, the Airport's demand forecasts for air passenger and air cargo activity would be the same for the No Action Alternative as for the Proposed Action. Table 5.5-3 presents the estimated air emissions for the No Action Alternative during 2010.

TABLE 5.5-3
ESTIMATED 2010 NO ACTION ALTERNATIVE EMISSIONS

Phase I No Action	Average Annual Emissions (tons)					
	ROG	NOx	CO	SO2	PM10	PM2.5
Daily	0.17	0.22	4.26	0.02	0.02	0.02

SOURCE: ESA, 2005

5.5.3.2 Proposed Action

Phase I (2005–2010)

The number of enplanements that would occur in 2010 under the Proposed Action would be the same as that anticipated under the No Action Alternative. With the proposed runway extension, the aircraft that would be accommodated at SBP would primarily be regional jet aircraft.

The Proposed Action would result in the importation of approximately 320,000 cubic yards of fill material. This material, which would be used for a variety of project components associated with the runway extension (including the relocation of Santa Fe Road, the perimeter service road, the extension of Taxiway A, and the runway safety area), could be imported from a variety of locations. The current plan is to transport fill material from the Flower Mound on the north side of Tank Farm Road. The intent behind the Flower Mound, or any other fill material source for this project, is to obtain clean fill material and to minimize the distance that haul trucks need to travel between the import site and the Airport.

Impact 5.5.1: Construction-Related Emissions

Project construction would generate substantial amounts of dust (including PM10 and PM2.5) primarily from "fugitive" sources (i.e., emissions released through means other than through a stack or tailpipe) due to earthmoving and grading and lesser amounts of other criteria air pollutants from operation of heavy equipment construction machinery (primarily diesel operated) and construction worker automobile trips (primarily gasoline operated).

Construction-related dust emissions would vary from day to day, depending on the level and type of activity, silt content of the soil, and the weather. In the absence of mitigation, construction activities may result in significant quantities of dust and, as a result, local visibility and PM10 concentrations may be adverse on a temporary and intermittent basis. In addition, the fugitive dust generated by construction would include not only PM10, but also larger particles, which would settle out within several hundred feet of the site and could result in nuisance-type impacts. Combustion emissions from heavy equipment and construction worker commute trips also would vary from day to day, and would contribute incrementally to regional ozone concentrations over the construction period. Construction emissions have been quantified (see Table 5.5-4) according to the methodologies specified in the CEQA *Air Quality Handbook*. The emission estimates are conservative in their estimate in the amount of time the equipment would be used and the area of disturbance. Appendix F shows the assumptions and emission factors used to develop emission estimates for construction equipment and worker commute trips, as well as the acreage estimates associated with fugitive dust emissions from construction. The fugitive dust emissions were based on the assumption that an area twice the size of the Proposed Action footprint would be disturbed at one time. Construction emission sources include on-road commuting vehicles and haul trucks. The emission factors for construction equipment were based on values contained in the CEQA *Air Quality Handbook*.

TABLE 5.5-4
CONSTRUCTION EMISSIONS

Pollutant	Thresholds	Pounds per day	Tons per quarter
CO	--	140	1.90
SO2	--	47	0.61
HC	185 lbs/day	28	0.37
	2.5 tons/quarter		
NOx	185 lbs/day	401	**5.45**
	2.5 tons/quarter		
PM10	185 lbs/day	159	**6.91**
	2.5 tons/quarter		

SOURCE: SLOCAPCD, 2003 and ESA, 2005

NEPA Analysis

As explained in Section 5.5.1.2, the Transportation Conformity Rule does not apply because San Luis Obispo County has been designated as attainment or unclassified for all of the existing NAAQS. Therefore, construction-related emissions would not exceed de minimis levels and this impact would be less than significant.

CEQA Analysis

Based on the conservative estimate of construction emissions, the NO_x emissions are potentially significant under CEQA. The sources that contribute most of the NO_x emissions would be the loaders and off-highway trucks. In addition, the construction-related dust emission impact also is considered to be potentially significant. Any DPM emissions are temporary and intermittent, but would also be substantially improved by the increased reduction of sulfur in diesel fuel. Their long-term effects on chronic health impacts would be small compared to the standard of 70-year exposure to these toxic substances. Therefore, the impacts of diesel construction emissions would be less than significant.

Mitigation Measure 5.5-1: Implement Dust Abatement Program. Compliance with the mitigation measures presented in the SLOCAPCD CEQA Air Quality Handbook can be reasonably expected to reduce fugitive dust and combustion emissions during construction. Elements of the dust abatement program for project components that disturb four or more acres shall include, but not be limited to, the following:

- Maintain all construction equipment in proper tune according to manufacturer's specifications.
- Fuel all off-road and portable diesel powered equipment including, but not limited to, bulldozers, graders, cranes, loaders, scrapers, backhoes, generator sets, compressors, and auxiliary power units, with CARB certified motor vehicle diesel fuel (non-taxed version suitable for use off-road).
- Maximize to the extent feasible, the use of diesel construction equipment meeting the CARB's 1996 or newer certification standard for off-road heavy-duty diesel engines.
- Install diesel oxidation catalysts (DOC), catalyzed diesel particulate filters (CDPF), or other SLOCAPCD-approved emission reduction retrofit devices. The DOC/CDPF shall be placed on the equipment that will be used the most and that produces the greatest emissions. The SLOCAPCD shall review and approve the installation of the filters prior to the start of construction activities. The CARB has recently verified DOC and CDPF systems for HD diesel vehicles. DOCs have control efficiencies on the order of 25 percent while CDPFs can achieve DPM reductions of 85 percent or better. In general, DOCs are effective at reducing the fine particle component while CDPFs are effective at reducing both the fine particle and larger black soot components. Manufacturer data indicates that both types of devices can reduce about 90 percent of CO emissions and about 50 to 70 percent of ROG emissions, some of which is a portion of the DPM component. Some devices/systems are being developed that have the added benefit of being able to reduce NO_x emissions. These measures should focus on the crane, loader, and off-highway trucks.

Proper implementation of these measures would achieve a significant reduction in fugitive dust emissions. Elements of the dust abatement program for project components that disturb four or more acres could include the following:

- Reduce the amount of the disturbed area where possible.
- Use water trucks or sprinkler systems sufficient to prevent airborne dust from leaving the site. Increase watering frequency whenever wind speeds exceed 15 mph – using reclaimed (non-potable) water whenever possible.
- Spray all dirt stock-pile areas daily as needed.
- Implement permanent dust control measures identified in the approved project revegetation and landscape plans soon as possible following completion of any soil disturbing activities.
- Sow fast-germinating native grass seed (and water until established) all exposed ground areas that are planned to be reworked more than one month after initial grading.
- Stabilize all disturbed soil areas not subject to revegetation using chemical soil binders, jute netting, or other methods approved in advance by the SLOCAPCD.
- Complete as soon as possible, all roadways, driveways, sidewalks, etc. to be paved. Likewise, lay all building pads as soon as possible after grading unless seeding or soil binders are used.
- Maintain vehicle speeds of 15 mph or less for all construction vehicles on any unpaved surface at the construction site.
- Cover all trucks hauling dirt, sand, soil, or other loose materials or maintain at least two feet of freeboard (minimum vertical distance between top of load and top of trailer).
- Install wheel washers where vehicles enter and exit unpaved roads onto streets, or wash off trucks and equipment leaving the site (where feasible and practicable). Otherwise, provide a mechanism to reduce the amount of material carried offsite from the truck tires. This includes installing a tracking pad, a 50-foot long rock bed, or installing tire scrapers, constructed out of railroad track sections (similar to cattle crossings), where vehicles enter and exist from unpaved roads onto paved roads. As the trucks pass over these mechanisms, the jolting action causes material on the truck tires to shake off.
- Sweep streets at the end of each day if visible soil material is carried onto adjacent paved roads. Water sweepers with reclaimed water should be used where feasible. Depending on the effectiveness of the wheel washing and tracking technique, the paved roadway may need to be cleaned more than once daily. All street sweepers used should either use reclaimed water or some other technique to prevent the generation of dust.
- Designate a person or persons to monitor the dust control program and to order increased watering, suspension of work during high wind periods, and/or reduced

vehicle speed, as necessary, to prevent transport of dust off site. The name and telephone number of such person(s) shall be provided to the SLOCAPCD prior to construction.

With implementation of the above appropriate mitigation measures, the construction-related emissions impacts, under CEQA, would be less-than-significant.

Impact 5.5-2: DPM Emissions

Implementation of the Proposed Action may lead to increases in chronic exposure of nearby sensitive receptors to certain toxic air contaminants from various emission sources. DPM emissions would be released from GSE and construction equipment and diesel-powered motor vehicles. The CARB has declared that DPM from diesel engine exhaust is a TAC. Additionally, the California Office of Environmental Health Hazard Assessment (OEHHA) has determined that chronic exposure to DPM can cause carcinogenic and non-carcinogenic health effects. In addition, a screening level health risk assessment has been performed and is included as Appendix Q. The conclusion of the screening level health risk assessment is that no significant health risk effects would occur.

In addition, the health effects from long-term exposure to DPM are considered to be serious and both the state and federal government are enacting stringent measures to reduce the levels of DPM generated by heavy equipment and motor vehicles in the near future. These measures would help to further reduce DPM exposure statewide and in the Airport vicinity.

NEPA Analysis

The estimated DPM emissions under the Proposed Action would be the same as those under the No Active Alternative. Therefore, the impacts of diesel construction emissions would be less-than-significant.

CEQA Analysis

The estimated DPM emissions under the Proposed Action would be less than those under the Baseline Conditions. Therefore, the impacts of diesel construction emissions would be less-than-significant.

Mitigation Measure 5.5-2: None required.

Impact 5.5-3: CO Emissions

Traffic generated by the Airport would have the potential to affect CO concentrations along surface streets and near stagnation points such as major highways and heavily traveled and congested roadways.

NEPA Analysis

The estimated CO emissions from the Proposed Action would be less than the emissions under the No Active Alternative. Therefore, this impact level is less-than-significant.

CEQA Analysis

Vehicular emissions were computed using the CARB's emission factor model, EMFAC2002. EMFAC is CARB's computer model to estimate existing and future on-road emissions of CO. As shown in Appendix F, the estimated CO emissions from the Proposed Action are estimated to be less than the emissions under the Baseline Conditions. Therefore, this impact level is less-than-significant.

Mitigation Measure 5.5-3: None required.

Impact 5.5-4: Operational-Related Emissions

Table 5.5-5 presents the estimated annual air emissions for the Proposed Action in 2010. Table 5.5-6 presents the change in annual (tons) emissions under the Proposed Action compared to both the Baseline Conditions and the No Action Alternative. Table 5.5-7 presents the change in daily (pounds) emissions under the Proposed Action compared to the Baseline Conditions. The significant thresholds apply to the change in daily emissions from the Proposed Action to the Baseline Conditions only (i.e., the data provided in Table 5.5-7). Supporting information for the operational emission calculations is contained in Appendix F.

TABLE 5.5-5
ESTIMATED PROPOSED ACTION EMISSIONS IN 2010

Phase I Project	Average Annual Emissions (tons)					
	ROG	NOx	CO	SO2	PM10	PM2.5
Daily	0.16	0.22	4.03	0.02	0.02	0.02

SOURCE: ESA, 2005

NEPA Analysis

Compared to the No Action Alternative, the Proposed Action would have a reduction in ROG, CO, and SO2 and would have the same amount of NO_x, PM10, and PM2.5 emissions. Therefore, for NEPA purposes, operational emissions would be less than significant.

CEQA Analysis

Compared to the Baseline Conditions, the Proposed Action would result in an increase in PM10 and PM2.5 emissions. These increases would be less than the threshold for significance. In addition, the Proposed Action would have the same emissions for ROG and SO2 compared to the Baseline Conditions and would have a decrease in CO and NO_x compared to the Baseline

TABLE 5.5-6
2010 CHANGE IN ANNUAL EMISSIONS AS A RESULT OF THE PROPOSED ACTION

Scenario	Average Annual Emissions (tons)					
	ROG	NOx	CO	SO2	PM10	PM2.5
Baseline Conditions	60	84	1,479	8	6	6
2010 No Action Alternative	62	79	1,555	9	8	7
2010 Proposed Action	60	79	1,471	8	8	7
2010 Proposed Action Compared to 2010 No Action Alternative	-3	0	-84	-2	0	0
2010 Proposed Action Compared to Baseline Conditions	0	-5	-8	0	2	1

NOTE: Differences represent rounding of values.

SOURCE: SLOCAPCD, 2003 and ESA, 2005

TABLE 5.5-7
2010 CHANGE IN DAILY EMISSIONS AS A RESULT OF THE PROPOSED ACTION

Scenario	Average Daily Emissions (pounds)					
	ROG	NOx	CO	SO2	PM10	PM2.5
2010 Proposed Action Compared to Baseline Conditions	10	-29	-48	2	8	8
Significance Threshold - Daily	10	10	550	10	10	--

NOTE: Differences represent rounding of values.

SOURCE: SLOCAPCD, 2003 and ESA, 2005

Conditions. The estimated decreases in CO and NO_x are the result of future decreases in emission factors for project equipment and mobile sources, due to typical replacement cycles of older equipment and implementation of the EPA's HD 2007 program. The operational-related emissions as a result of the Proposed Action are considered to be less than significant.

Mitigation Measure 5.5-4: None required.

Phase II (2011–2023)

It is estimated that there would be 301,000 enplanements in 2023 at SBP. The fleet mix in 2023 would be more regional jet aircraft and fewer turboprop aircraft compared to the Baseline Conditions. In addition, the Proposed Action would result in the construction of various project components that would require the use of construction equipment.

Impact 5.5.1: Construction-Related Emissions

Project construction would generate dust (including PM10 and PM2.5) primarily from "fugitive" sources (i.e., emissions released through means other than through a stack or tailpipe) due to earthmoving and grading and lesser amounts of other criteria air pollutants from operation of heavy equipment construction machinery (primarily diesel operated) and construction worker automobile trips (primarily gasoline operated).

Construction-related dust emissions would vary from day to day, depending on the level and type of activity, silt content of the soil, and the weather. In the absence of mitigation, construction activities may result in significant quantities of dust and, as a result, local visibility and PM10 concentrations may be adverse on a temporary and intermittent basis. In addition, the fugitive dust generated by construction would include not only PM10, but also larger particles, which would settle out within several hundred feet of the site and could result in nuisance-type impacts. Combustion emissions from heavy equipment and construction worker commute trips also would vary from day to day, and would contribute incrementally to regional ozone concentrations over the construction period. Construction emissions have been quantified (see Table 5.5-8) according to the methodologies specified in the CEQA *Air Quality Handbook*. The emission estimates are conservative. Appendix F shows the assumptions and emission factors used to develop emission estimates for construction equipment and worker commute trips, as well as the acreage estimates associated with fugitive dust emissions from construction. The emission factors for construction equipment were based on values contained in the CEQA *Air Quality Handbook*.

TABLE 5.5-8
CONSTRUCTION EMISSIONS

Pollutant	Thresholds	Pounds per day	Tons per quarter
CO	--	140	1.84
SO2	--	47	0.61
HC	185 lbs/day 2.5 tons/quarter	28	0.37
NOx	185 lbs/day 2.5 tons/quarter	401	**5.27**
PM10	185 lbs/day 2.5 tons/quarter	159	**5.31**

SOURCE: SLOCAPCD, 2003 and ESA, 2005

CEQA Analysis

Based on the conservative estimate of construction emissions, the NO_x emissions are potentially significant. The sources which contribute most of the NO_x emissions would be the loaders and off-highway trucks. In addition, the construction-related dust emission impact also is considered to be potentially significant. Any DPM emissions are temporary and intermittent, but would also be substantially improved by the increased reduction of sulfur in diesel fuel. Their long-term effects on

chronic health impacts would be small compared to the standard of 70-year exposure to these toxic substances. Therefore, the impacts of diesel construction emissions would be less than significant.

Mitigation Measure 5.5-1: Implement Dust Abatement Program. Compliance with the mitigation measures presented in the SLOCAPCD CEQA Air Quality Handbook can be reasonably expected to reduce fugitive dust and combustion emissions during construction. With the continued implementation of this mitigation measure, which is detailed on pages 141 through 143, the construction-related emissions impact would be less-than-significant.

Impact 5.5-2: DPM Emissions

As with Phase I, implementation of the project components of Phase II may lead to increases in chronic exposure of nearby sensitive receptors to certain toxic air contaminants from various emission sources. The health effects from long-term exposure to DPM are considered to be serious and both the state and federal government are enacting stringent measures to reduce the levels of DPM generated by heavy equipment and motor vehicles in the near future. These measures would help to further reduce DPM exposure statewide and in the Airport vicinity.

CEQA Analysis

The estimated DPM emissions under the Proposed Action would be less than those under the Baseline Conditions. Therefore, the impacts of diesel construction emissions would be less-than-significant.

Mitigation Measure 5.5-2: None required.

Impact 5.5-3: CO Emissions

Traffic generated by the Airport would have the potential to affect CO concentrations along surface streets and near stagnation points such as major highways and heavily traveled and congested roadways.

CEQA Analysis

Vehicular emissions were computed using the CARB's emission factor model, EMFAC2002. EMFAC is CARB's computer model to estimate existing and future on-road emissions of CO. As shown in Appendix F, the estimated CO emissions from the Proposed Action are estimated to be less than the emissions under the Baseline Conditions. Therefore, this impact level is less-than-significant.

Mitigation Measure 5.5-3: None required.

Impact 5.5-4: Operational-Related Emissions

Table 5.5-9 presents the estimated annual air emissions for the Proposed Action in 2023. Table 5.5-10 presents the change in annual (tons) emissions under the Proposed Action compared to the Baseline Conditions. Table 5.5-11 presents the change in daily (pounds) emissions under the Proposed Action compared to the Baseline Conditions. The significant thresholds apply to the change in daily emissions from the Proposed Action to the Baseline Conditions only (i.e., the data provided in Table 5.5-7). Supporting information for the operational emission calculations is contained in Appendix F.

TABLE 5.5-9
ESTIMATED PROPOSED ACTION EMISSIONS IN 2023

Phase II Project	Average Annual Emissions (tons)					
	ROG	NOx	CO	SO2	PM10	PM2.5
Daily	0.15	0.15	3.60	0.02	0.02	0.02
Annual	54	56	1,315	6	9	8

SOURCE: ESA, 2005

TABLE 5.5-10
2023 CHANGE IN ANNUAL EMISSIONS AS A RESULT OF THE PROPOSED ACTION

Scenario	Average Annual Emissions (tons)					
	ROG	NOx	CO	SO2	PM10	PM2.5
Baseline Conditions	60	84	1,479	8	6	6
2023 Proposed Action	54	56	1,315	6	9	8
2023 Proposed Action Compared to Baseline Conditions	-5	-28	-164	-2	2	2

NOTE: Differences represent rounding of values.

SOURCE: SLOCAPCD, 2003 and ESA, 2005

CEQA Analysis

Total daily incremental emissions of ROG, CO, NO_x, and SO_2 are less-than-significant. However, total PM10 emissions (primarily from entrained road dust) are a significant and unavoidable impact of the proposed project. These entrained road dust emissions are distributed over the entire trip distance of 20 miles and thus, are not simply local to the Proposed Action. Mitigation measures to reduce PM10 impacts from entrained road dust to less-than-significant levels are not feasible and/or technically possible. Thus, these impacts are **significant and unavoidable**. Projected decreases in ROG, CO, NO_x, and SO_2 are the result of future decreases in emission factors for project equipment and mobile sources due to typical replacement cycles of older equipment and implementation of the EPA's HD 2007 program.

TABLE 5.5-11
2023 CHANGE IN DAILY EMISSIONS AS A RESULT OF THE PROPOSED ACTION

	Average Daily Emissions (pounds)					
Scenario	**ROG**	**NOx**	**CO**	**SO2**	**PM10**	**PM2.5**
2023 Proposed Action Compared to Baseline Conditions	--29	-154	-900	-11	**13**	12
Significance Threshold - Daily	10	10	550	10	10	--

NOTE: Differences represent rounding of values.

SOURCE: SLOCAPCD, 2003 and ESA, 2005

Mitigation Measure 5.5-4: None available.

5.5.4 Summary of Impacts

The construction-related emission impacts would be less than significant after applying appropriate mitigation measures. The Proposed Action would increase aircraft operations, ground support equipment, and motor vehicle traffic volumes. The impacts of operational-related emissions of criteria pollutants during Phase II would be significant and unavoidable due to entrained road dust and the increase in motor vehicle traffic (see Table 5.5-12).

TABLE 5.5-12
AIR QUALITY IMPACTS SUMMARY MATRIX

	Phase I (2005–2010)		Phase II (2011–2023)
Impact	**Compared to No Action Alternative**	**Compared to Baseline Conditions**	**Compared to Baseline Conditions**
Construction-Related Emissions	Less than de minimis levels	LTS	LTS
DPM Emissions	No change in DPM emissions	LTS	LTS
CO Emissions	Reduction in CO emissions	LTS	LTS
Operational-Related Emissions	Reduction in ROG, CO, and SO_2 emissions and no change in NO_x, PM10, and PM2.5 emissions	LTS	S

LTS = Less than significant
NA = Not Applicable
S = Significant

SOURCE: ESA, 2006

5.6 Water Quality

5.6.1 Background and Methodology

5.6.1.1 Regulatory Context

For a discussion of the regulatory context for water quality, see Appendix O.

5.6.1.2 Thresholds of Significance

5.6.1.2.1 NEPA Thresholds

FAA Order 5050.4A, *Airport Environmental Handbook* and FAA Order 1050.1E, *Environmental Impacts: Policies and Procedures* provide the NEPA requirements for the analysis on water quality impacts and the information needed for environmental assessment. Neither FAA Order 5050.4A nor FAA Order 1050.1E provides specific NEPA thresholds of significance for impacts on water quality. However, FAA Order 5050.4A specifies that the environmental assessment include sufficient description of design, mitigation measures, and construction controls applicable to the proposal to demonstrate that state water quality standards and any federal, state, and local permit requirements be met. FAA Order 5050.4A also states that significant impacts on water quality for most Airport actions can typically be avoided by design considerations, construction phase controls, and other mitigation measures. Furthermore, the environmental assessment shall include documentation from regulating and permitting agencies and list required permits. FAA Order 1050.1E requires that any proposed federal action that would impound, divert, drain, control, or otherwise modify the waters of any stream of body of water is applicable to the Fish and Wildlife Coordination Act (FWCA). Under the FWCA, the U.S. Fish and Wildlife Service (USFWS) has the authority to investigate and report on all proposals for work in or affecting the waters of the U.S. that need approval from the federal government. Project compliance with the FWCA is discussed in more detail in Section 5.9, Biotic Communities. FAA Order 1050.1E also states that consultation with the EPA regional office is required for any project that could potentially contaminate an aquifer designated by the EPA as a sole or principal drinking water source.

5.6.1.2.2 CEQA Thresholds

According to Appendix G of the CEQA Guidelines, water quality impacts would be considered significant if the project were to:

- Violate any water quality standards or waste discharge requirements;
- Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner that would result in substantial erosion or siltation on or off the site;
- Substantially degrade or deplete groundwater resources; or
- Otherwise substantially degrade water quality.

5.6.1.3 Methodologies

Water quality impacts for each alternative were evaluated based on potential pollutant sources associated with each alternative and the ability of existing and proposed water quality BMPs in mitigating potential impacts. Pollutant concentrations in site runoff are dependent on a number of factors including: land use conditions, site drainage conditions, intensity and duration of rainfall, the climatic conditions preceding a rainfall event, and implementation of water quality BMPs. Due to the variability of industrial runoff characteristics, it is difficult to estimate pollutant loads for post-development conditions. For this reason, this analysis is a qualitative analysis based on available resources and professional judgment. Performance standards are discussed where feasible and appropriate.

5.6.2 Baseline Conditions

5.6.2.1 Surface Water Quality

Stormwater runoff from impervious surfaces at the Airport are conveyed via underground pipes and open channels west and south to four outfalls located at the East Fork of San Luis Obispo Creek and the Unnamed Tributary to the East Fork of San Luis Obispo Creek. The quality of stormwater discharged from these outfalls is the product of existing industrial activities and water quality BMPs at the Airport. Nonpoint source pollutants in stormwater runoff can be a significant source of pollution to downstream watercourses. Additionally, fuel and industrial chemicals are stored and handled at the Airport with the resulting potential for spills reaching surface waters or groundwater.

The Airport implements a SWPPP in compliance with NPDES General Industrial Activities permit requirements. Last updated in July 2005, the SWPPP identifies potential pollutants and material handling practices and establishes storm water management controls, inspection and water quality testing protocols, and spill prevention and response plans. Potential pollutants associated with airport operations are oil, grease, fuel, detergents, industrial cleaners, hydraulic fluid, thinners, and solvents. Industrial processes and associated stormwater management controls are described below.

Fueling

- Aircrafts are fueled on the aircraft ramps, tiedown areas, and in front of hangers via a closed system.
- Mobile aviation fuel trucks are self-contained and equipped with shutoff devices and spill kits.
- Aboveground aviation fuel tanks are double walled and have a secondary containment basin and shut off valve.
- Spill kits and magnetic mats to cover storm drains in case of a fuel spill are stored at the airport fire station.
- Unleaded gasoline is contained in mobile fuel trucks, which are equipped with spill kits.

Aircraft and Vehicular Maintenance

- All aircraft maintenance is performed by fixed base operators.
- Aircraft maintenance is mostly performed indoors, eliminating the potential for maintenance materials to impact stormwater.
- Any maintenance material stored outside has a secondary containment: Double-walled containers, is under cover, has a catch basin and/or is stored on pallets.
- Airport operations maintenance equipment (tractors/mowers) is serviced in the airport maintenance shop or at an off-site facility.

Aircraft and Vehicular Washing

- All aircraft soaps must be biodegradable. Aircrafts are washed in designated wash areas.
- Designated wash area is equipped with a clarifier and/or clarifier and valve system. Wash water is diverted to the sanitary sewer system. All parts are cleaned in a solvent tank.
- All soap used for vehicle washing must be biodegradable. All vehicles are washed in aircraft wash areas.

Storage of Hazardous Materials and Waste

- All hazardous materials are required to be stored indoors or in a double container to prevent exposure to storm water.
- Pallets, drip cans, and/or catch basins are used to prevent the exposure of industrial cleaners, hydraulic fluid, fuel, oil, thinner, cleaners, and solvents to storm water.
- The fixed base operator (FBO) is responsible for monitoring vendor delivery of fuel, containment, and any necessary clean up of spills under 10 gallons. Any spills over 10 gallons are considered significant and are handled by the County Hazardous Materials Team.

The Airport conducts stormwater quality monitoring in conjunction with the current SWPPP for General Industrial Activities once every other year. Sample points represent runoff from areas where industrial activities take place including tie down areas, ramp activities, hangers, fueling washing areas, and other industrial activities at the Airport. Water quality parameters monitored under the SWPPP do not correspond to numeric standards in the Basin Plan. Rather, the results are used to evaluate the effectiveness of water quality BMPs and determine if additional storm water quality controls are needed. Stormwater quality monitoring at the Airport was last conducted in November 2002. The results are shown in Table 5.6-1.

Authorized non-stormwater discharges at the Airport include fire hydrant flushing, potable water sources, maintenance or testing of potable water systems, irrigation drainage, and drinking fountain water. Authorized non-stormwater discharges are inspected quarterly to verify that the

TABLE 5.6-1
SWPPP STORMWATER SAMPLING DATA

Parameter	Sample Results Outfall #1	Sample Results Outfall #4	Detention Limit
pH	6.4	6.7	Not Available
Total Suspended Solids (TSS)	16 mg/l	110 mg/l	1 mg/l
Specific Conductance	79 umhos/cm	75 umhos/cm	1 umhos/cm
Biological Oxygen Demand (BOD)	10 mg/l	12 mg/l	3.0 mg/l
Chemical Oxygen Demand (COD)	75 mg/l	120 mg/l	1 mg/l
Ammonia (NH3)	0.65 mg/l	0.73 mg/l	1 mg/l
Oil and Grease	Nondetect	18. mg/l	1.0 mg/l

mg/l = milligrams per liter
umhos/cm = micro ohms per centimeter

SOURCE: SOURCE: San Luis Obispo County Regional Airport, Stormwater Sampling Data WDID #3 40S002529

discharge is not carrying significant amounts of pollutants such as detergents, metals, fuels, oils, and engine fluids. The non-stormwater discharges are reported and described annually as part of an annual SWPPP report.

5.6.2.2 Groundwater Quality

The Department of Water Resources (DWR) defines State groundwater basins based on geologic and hydrogeologic conditions. The Airport is within the San Luis Obispo Valley Groundwater Basin. Water in the basin is considered to be of magnesium bicarbonate character. Major water-bearing formations in the basin consist of Pleistocene to Holocene age terrestrial deposits. Water quality from wells in the Pleistocene alluvial terrace deposits is generally characterized as poor; water quality from wells in the Holocene deposits is generally of excellent quality (DWR, 2004). Three domestic groundwater wells in this groundwater basin supply approximately 4% of the total water use in the City of San Luis Obispo (City of San Luis Obispo, 2005).

Fuel and hazardous material spills at the Airport have the potential to affect groundwater quality. Previous fuel spills at the Airport have resulted in localized soil and groundwater contamination. Soil and groundwater monitoring and remediation are conducted, as appropriate, in the event of a significant spill. No significant spills have occurred at the Airport since 1992 (San Luis Obispo County, 2005).

5.6.3 Impacts and Mitigation

5.6.3.1 No Action Alternative

Future Airport facilities that would be constructed under the No Action Alternative would be limited to those projects that have been approved, but not yet built. Construction of these facilities would result in grading and earthmoving activities on approximately 18.8 acres and would result in a total increase of 17.6 acres of impervious surfaces. However, these facilities would not be constructed simultaneously. Rather, they would be constructed over the next five years (by the year 2010) and thus, the area of exposed soils at any given time would be considerably less.

The No Action Alternative includes the construction of an additional fuel storage facility (S-3). The fuel storage facility will consist of double walled aboveground storage tank(s) equipped with a secondary containment basin to prevent the leakage of fuel into underlying soil and groundwater.

Airport personnel will be required to comply with all NPDES General Construction Activities Permit and NPDES General Industrial Permit requirements. Pursuant to NPDES requirements, the applicant will develop a SWPPP for General Construction Activities to protect stormwater quality and prevent erosion during and after construction. The existing SWPPP for General Industrial Activities includes compliance measures to protect storm drains, respond to spills, prevent non-stormwater waste from entering local waterways, regulate aircraft fueling, and prevent solvent and non-solvent cleaners, aircraft fluids, and other hazardous materials from entering stormwater and/or infiltrating into groundwater. Periodic updates to and continued implementation of the existing SWPPP for General Industrial Activities will prevent increased Airport operations from impacting water quality.

5.6.3.2 Proposed Action

Phase I (2005-2010)

Impact 5.6-1: Construction-Related Erosion

Implementation of Phase I of the Proposed Action would result in the development of EMAS for both ends of Runway 11/29, the extension of Taxiway A, the extension of Runway 11 by 800 feet, the construction of a perimeter service road around the new Runway 11, a new Santa Fe Road alignment, and new access roads from new Santa Fe Road. The construction of these facilities would involve earthwork and grading on approximately 32.5 acres between 2005 and 2010. Existing structures, pavement, and vegetation that currently help to stabilize site soils would be removed during construction. Soil disturbance would subject unprotected areas to the erosional forces of runoff. Also, the extension of Runway 11 would require approximately 250,000 cubic yards of fill to raise ground surface elevations in the vicinity of the runway. Alterations in drainage patterns and grading during the construction of these facilities could compound and increase erosion.

Additionally, in order to accommodate the proposed extension of Runway 11, Santa Fe Road, located to the west of the airport, will need to be relocated further west. The relocation of Santa Fe Road and the placement of fill for the development of the extension of Runway 11 would encroach in the 100-year floodplain of the East Fork of San Luis Obispo Creek. A trapezoidal swale would be constructed between the proposed Santa Fe Road alignment and the East Fork of San Luis Obispo Creek to compensate for the conveyance lost due to encroachment in the floodplain. The swale would drain to the existing floodplain associated with the East Fork of San Luis Obispo Creek west of the Airport. The swale would be approximately 3,280 feet long and have a bottom width of 50 feet and a varying depth of approximately 3 to 8 feet. Approximately 3.8 acres would be subject to excavation and earthwork for the construction of the swale. This excavation and earthwork during swale construction has the potential to increase soil erosion. The trapezoidal swale is discussed in more detail in Section 5.12, Floodplains.

Increased soil erosion during construction has the potential to result in the sedimentation and siltation of receiving waters and lead to a reduction in the water quality and habitat benefits of the East Fork of San Luis Obispo Creek. Excessive deposition of sediments in stream channels can degrade aquatic habitat. Additionally, eroded sediment can accumulate in downstream drainage facilities, interfering with flow and aggravating downstream flooding conditions.

NEPA Analysis

Implementation of Phase I project components would result in extensive grading and earthwork on 32.5 acres, or 13.7 more acres than what would occur under the No Action Alternative. Although the project components would be constructed in compliance with NPDES General Construction Activities permit requirements, grading and earthwork activities associated with the extension of Runway 11, the relocation of Santa Fe Road, and the excavation of the new swale could have potentially significant impacts on water quality in the East Fork of San Luis Obispo Creek. Implementation of Mitigation Measures 5.6-1a and 5.6-1b would ensure that significant impacts to surface water quality do not occur.

CEQA Analysis

Compared to Baseline Conditions, Phase I project components would result in grading and earthwork on approximately 32.5 acres. Construction activities adjacent to and within the floodplain of the East Fork of San Luis Obispo Creek, specifically those associated with the extension of Runway 11, the relocation of Santa Fe Road, and the new swale, could have detrimental impacts on water quality. Implementation of Mitigation Measures 5.6-1a and 5.6-1b would reduce these impacts to less-than-significant levels.

Mitigation Measure 5.6-1a: Preparation and Implementation of SWPPP for Construction Activities. Pursuant to NPDES requirements, the applicant shall develop a SWPPP for General Construction Activities to protect water quality during and after construction. The SWPPP shall be a comprehensive document that addresses all components of the Proposed Action. The Contractor shall be responsible for maintenance, inspection, and repair to all erosion and sediment control measures throughout the construction period, and should ensure that all other

protective devices are maintained and repaired in good and effective condition. At a minimum, the SWPPP shall include the following measures for the construction period:

(1) Grading and earthwork shall be prohibited during the wet season (October 15 through April 15) and such work shall be stopped before pending storm events.

(2) Erosion control/soil stabilization techniques such as straw mulching, erosion control matting, and hydro-seeding, shall be utilized in accordance with erosion control and stormwater quality recommendations contained in the San Luis Obispo Waterway Management Plan. Silt fences shall be installed downslope of all graded slopes. Hay bales shall be installed in the flow path of graded areas receiving concentrated flows and around storm drain inlets;

(3) No construction equipment shall be left overnight in the creek channel or swale;

(4) All refueling and/or maintenance of heavy equipment shall take place at a minimum of 100-feet away from the top of banks of the creek channel and swale;

(5) In particularly sensitive areas or areas lacking suitable access, earthwork shall be completed using hand tools to avoid significant and unnecessary footprints caused by heavy machinery in the creek channel;

(6) Cofferdams, water pumps, and/or diversion channels shall be used, as necessary, to prevent the discharge of soil and sediment to downstream waters during construction;

(7) BMPs for preventing the discharge of other construction-related NPDES pollutants beside sediment (i.e. concrete, tar, asphalt, etc) to downstream waters; and

(8) All drainage facilities shall be inspected regularly for accumulated sediment, and these drainage structures shall be cleared of debris and sediment.

Mitigation Measure 5.6.1b: Preparation and Implementation of a Planting Plan. In accordance with the San Luis Obispo Waterway Management Plan, the project applicant shall prepare a Planting Plan for affected areas within the banks of the East Fork of San Luis Obispo Creek and excavation and earthwork associated with the construction of the swale. The Planting Plan shall include erosion protection and bank stabilization techniques to ensure the Proposed Action does not significantly increase erosion in these channels. Bank protection may be accomplished by vegetative and/or biotechnical methods (i.e. willow wattles, willow/brush mattresses, pole planting, coconut fiber erosion control blankets). Hard structures such as rip rap, gabion baskets, and sacrete may be used, as necessary. The Planting Plan shall include replanting with appropriate native riparian plant species. Appropriate design for bank stabilization shall be based on a geomorphic and hydraulic analysis of the trapezoidal swale. Maintenance requirements will be especially important during the initial establishment of vegetation. The Airport's SWPPP for General Industrial Activities shall be updated to include stream maintenance requirements associated with the Planting Plan. The Planting Plan shall be prepared and approved by the San Luis Obispo County Department of Public Works prior to project approval.

Impact 5.6-2: Increase in Nonpoint Source Pollutants in Receiving Surface Waters

Nonpoint source pollutants are washed by rainwater from roofs, landscape areas, and paved areas into the drainage network. Industrial nonpoint source pollutants with the greatest potential to occur at the Airport are oil/grease, petroleum hydrocarbons, solvents, antifreeze, and herbicides. Implementation of Phase I project components would result in an estimated 18.9-acre increase in impervious surfaces and more intense site use. A minimum 100-foot setback from the top of bank of the East Fork of San Luis Obispo Creek and the proposed realignment of Santa Fe Road has been established to maintain a buffer zone between industrial activities and the creek. This setback will help to protect water quality and riparian habitat. However, increases in Airport operations may result in more frequent contaminant spills (e.g. fuel spills) and increased vehicle- and aircraft-associated contaminant loadings in site runoff.

The existing SWPPP for General Industrial Activities includes compliance measures to protect storm drains, respond to spills, prevent non-stormwater waste from entering local waterways, regulate aircraft fueling, and prevent solvent and non-solvent cleaners, aircraft fluids, and other hazardous materials from entering stormwater. Water quality BMPs outlined in the SWPPP for General Industrial Activities would be applied to future facilities to protect water quality. Increases in the potential for contaminant releases would be mitigated through updates to and continued implementation of the SWPPP for General Industrial Activities.

Under the Proposed Action, increases in stormwater runoff associated with previously approved projects and Phase I and Phase II project components would be contained by a new detention pond on the triangular parcel bounded by the extended Runway 11, the realigned Santa Fe Road, and the driveway providing access to the Saes Property from the realigned Santa Fe Road. The detention pond would be designed to reduce post-project 100-year peak flows to Baseline Condition levels. Although final detention pond design has not yet been completed, detention could potentially provide certain water quality benefits. Criteria for detention basin design is provided in the San Luis Obispo Waterway Management Plan.

NEPA Analysis

Phase I project components would result in an additional 18.9 acres of impervious surfaces, or 1.3 acres more than under the No Action Alternative. When compared to the No Action Alternative, the construction and operation of Phase I project components would provide increased opportunities for nonpoint source pollutants and litter to enter the East Fork of San Luis Obispo Creek. Updates to and continued implementation of the SWPPP for General Industrial Activities would reduce the potential for water quality impacts to receiving surface waters. The 100-foot setback from the top of bank of the East Fork of San Luis Obispo Creek would help to protect water quality and the riparian corridor. Additionally, use of the detention ponds for water quality treatment, as discussed below in Mitigation Measure 5.6-2 would help maintain the potential for water quality impacts to receiving surface waters at less than significant levels.

CEQA Analysis

Phase I project components would result in an approximate increase of 18.9 acres of impervious surfaces at the Airport compared to the Baseline Conditions. Implementation of these project components would intensify land use and could result in an increase in industrial nonpoint source pollutants in receiving waters. Periodic updates to and continued implementation of the SWPPP for General Industrial Activities would address potential impacts associated with nonpoint source pollutants in site runoff. The 100-foot creek setback would help to protect the riparian corridor. Implementation of Mitigation Measure 5.6-2 would ensure project impacts to water quality be maintained at less-than-significant levels.

Mitigation Measure 5.6.2: Detention Pond Design. The detention pond shall be designed in accordance with all detention pond design requirements contained in the San Luis Obispo Waterway Management Plan. Furthermore, the detention pond shall be designed to maximize water quality treatment potential without compromising the stormwater storage characteristics of the ponds. At a minimum, the pond outlet shall be protected with trash racks to trap the larger gross pollutants in site runoff and minimize the amount of litter entering downstream waterways. The trash rack can consist of a grate or grill and must be large enough so that partial plugging will not restrict outflow.

Impact 5.6-3: Groundwater Contamination

As with surface water quality, groundwater quality could be affected by increases in impervious surfaces and intensification of land use at the Airport. Construction and operation of Phase I project components would provide more opportunities for contaminant spills and aircraft- and vehicle-associated contaminant loadings. An increase in facilities traffic could contribute to higher levels of petroleum hydrocarbons in groundwater. Nonpoint source pollutants could infiltrate into groundwater and degrade the quality of potential groundwater drinking sources.

NEPA Analysis

Phase I of the Proposed Action would further increase impervious surfaces by approximately 18.9 acres and intensify land use. Additional increases in impervious surfaces and intensification of land use at the Airport associated with Phase I project components may result in more frequent contaminant spills and higher contaminant loading rates. However, impacts to groundwater quality would be less than significant with implementation of Mitigation Measure 5.6-1a and periodic updates to and continued implementation of the SWPPP for General Construction Activities. Thus, implementation of mitigation measures contained in this EA/EIR would reduce potential project impacts to groundwater quality to less-than-significant levels.

CEQA Analysis

Potential impacts to groundwater quality associated with Phase I project components under CEQA would be similar to those described under NEPA. Therefore, potential impacts to groundwater quality associated with the construction and operation of Phase I project components would be less than significant with implementation of Mitigation Measure 5.6-1a.

Mitigation Measure 5.6-3: None required.

Phase II (2011 – 2023)

Impact 5.6-1: Construction-Related Erosion

Construction activities associated with Phase II project components would require earthwork and grading activities on approximately 29.0 acres between the years 2011 and 2023. Existing structures, pavement, and vegetation that currently help to stabilize site soils would be removed during construction. Although these improvements would not be constructed simultaneously, they could potentially result in significant construction-related erosion, adversely affecting water quality and riparian habitat in the East Fork of San Luis Obispo Creek.

CEQA Analysis

Construction activities associated with Phase II project components would subject unprotected bare soil areas to the erosional forces of runoff. Implementation of Mitigation Measure 5.6.1a would reduce potential construction-related impacts associated with erosion and siltation to less than significant levels.

Mitigation Measure 5.6-1: None required.

Impact 5.6-2: Increase in Nonpoint Source Pollutants in Receiving Surface Waters

Phase II project components would result in increased impervious surfaces and more intense land use at the airport, potentially resulting in an increase in nonpoint source pollutants in site runoff. Industrial nonpoint source pollutants that could potentially find their way into surface waters due to the construction and operation of Phase II project components would be similar to those associated with Phase I project components and include oil/grease petroleum hydrocarbons, solvents, antifreeze, and herbicides. The Airport's SWPPP for General Industrial Activities would be updated as new components are constructed to mitigate new pollutant sources associated with Airport facilities and operations. The two detention ponds that would be constructed during Phase I would be designed to accommodate runoff from Phase II project components and thus, any water quality benefits associated with the ponds would also apply to Phase II.

CEQA Analysis

Facilities that would be constructed under Phase II of the Proposed Action have the potential to increase the levels of petroleum hydrocarbons and other contaminants in stormwater discharges. Additionally, spills and leaks at new facilities could contribute to increased contaminant levels in surface water. Phase II impacts associated with nonpoint source pollutants would be considered less than significant with implementation of Mitigation Measure 5.6-2.

Mitigation Measure 5.6-2: None required.

Impact 5.6-3: Groundwater Contamination

Construction and operation of the Phase II project components would result in an increase in impervious surfaces and intensification of land use at the Airport. No additional fuel storage facilities are proposed under Phase II. More intense land use could result in more frequent contaminant spills and higher contaminant loadings, potentially impacting groundwater quality.

CEQA Analysis

Although there would be more opportunity for releases of contaminants and hazardous material spills, impacts to groundwater quality would be considered less than significant with updates to and continued implementation of the Airport's SWPPP for General Industrial Activities and preparation of a SWPPP for General Construction Activities.

Mitigation Measure 5.6-3: None required.

5.6.4 Summary of Impacts

Water quality impacts associated with Phase I project components could be mitigated to levels considered less than significant with mitigation measures contained in this EA/EIR and discussed above (see Table 5.6-2). Phase II impacts would further increase impervious surfaces and increase the potential for the release of contaminants into surface and groundwaters. However, mitigation measures implemented under Phase I also would serve to mitigate Phase II impacts.

TABLE 5.6-2
WATER QUALITY IMPACTS SUMMARY MATRIX

Impact	Phase I (2005–2010)		Phase II (2011–2023)
	Compared to No Action Alternative	**Compared to Baseline Conditions**	**Compared to Baseline Conditions**
Construction-Related Erosion	Implementation of a SWPPP would mitigate construction-related erosion impacts.	LTS	LTS
Increase in Nonpoint Source Pollutants in Receiving Surface Waters	The detention pond would be designed to mitigate any increase in nonpoint source pollutants.	LTS	LTS
Groundwater Contamination	Implementation of a SWPPP would mitigate groundwater contamination impacts.	LTS	LTS

LTS = Less than significant
N/A = Not Applicable
S = Significant

SOURCE: ESA, 2006

5.7 Department of Transportation Act Section 4(f) (NEPA Only)

5.7.1 Background and Methodology

5.7.1.1 Regulatory Context

For a discussion of the regulatory context for Department of Transportation Act Section 4(f), see Appendix O.

5.7.1.2 Thresholds of Significance

Section 4(f) resources can be directly or indirectly affected by a Proposed Action. In Section 4(f) nomenclature, a direct impact would constitute a "use" of the property and an indirect impact would constitute a "constructive use" of the property.

"Use" within the meaning of Section 4(f) is generally considered to occur when a Proposed Action requires a physical taking or other direct control of the land for the purpose of the Proposed Action, and as a consequence the use is changed. For example, acquiring and developing a portion of a park to build a transportation project would be considered a "use." This use would be considered a direct impact of a Proposed Action.

"Use," however, includes not only the physical takings of such lands but also adverse indirect impacts, or "constructive use," of such lands. The term "constructive use" is described in 23 Code of Federal Regulations (CFR) Part 771.135 as follows: "Constructive use occurs when a transportation project does not incorporate land from a Section 4(f) resource, but the project's proximity impacts are so severe that the protected activities, features, or attributes that qualify a resource for protection under Section 4(f) are substantially impaired." Substantial impairment occurs only when the protected activities, features, or attributes of the resources are substantially diminished. When there is no physical taking but there is the possibility of use or impairment of Section 4(f) lands, the FAA must determine if the activity associated with the Proposed Action conflicts or is compatible with the normal activity associated with these lands.

In accordance with FAA Order 1050.1E, Appendix A, Section 6.3, a significant impact would occur when a Proposed Action either involves more than a minimal physical use of a Section 4(f) property or is deemed a "constructive use" substantially impairing the Section 4(f) property and mitigation measures do not eliminate or reduce the effects of the use below the threshold of significance. Substantial impairment would occur when impacts to Section 4(f) properties are sufficiently serious that the value of the site in terms of its prior significance and enjoyment are substantially reduced or lost.

5.7.1.3 Methodologies

To determine the number and location of Section 4(f) resources in the vicinity of the Airport, a survey was conducted that included the southern portion of the City of San Luis Obispo (south of South Street and east of U.S. 101) and the portion of unincorporated San Luis Obispo County south of the San Luis Obispo city limits between U.S. 101 and Orcutt Road.

5.7.2 Baseline Conditions

Based on the results of the survey, potential Section 4(f) properties, which include seven parks and recreation areas and two playgrounds associated with elementary schools, are identified in Table 5.7-1 and shown in Figure 5.7-1. No wildlife and waterfowl refuges or historic sites are in the SBP vicinity. None of these nine potential Section 4(f) properties are within the existing 65 Community Noise Equivalent Level (CNEL) noise contour.

TABLE 5.7-1
POTENTIAL SECTION 4(f) PROPERTIES IN THE SBP VICINITY

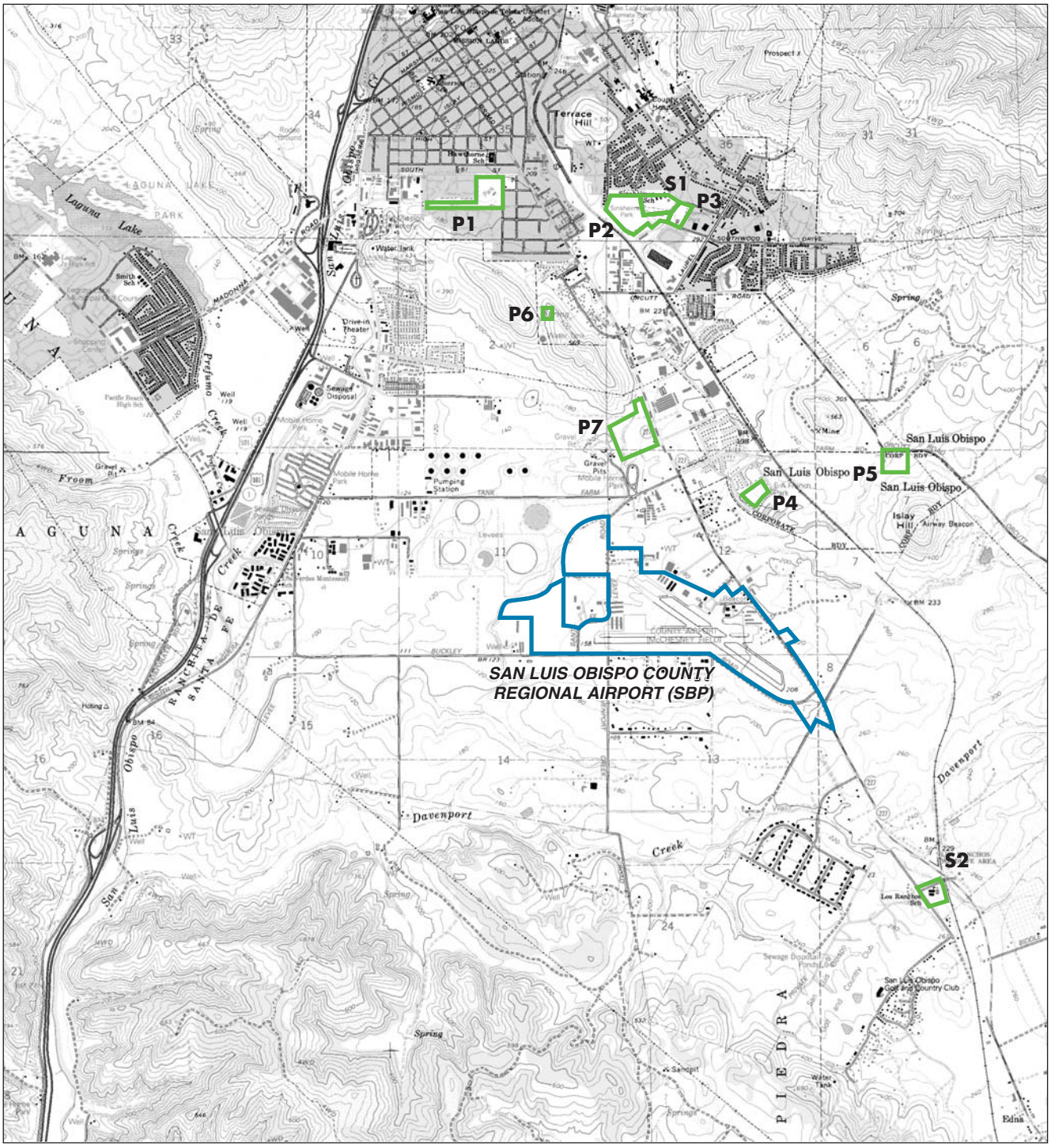
Section 4(f) Property Type		
City of San Luis Obispo		
P1	Meadow Park	
P2	Sinsheimer Sports Complex	
P3	Johnson Park	
P4	French Park	
P5	Islay Hill Park	
P6	Park in Stoneridge development	
P7	Damon Garcia Ball Fields	
S1	Sinsheimer School	
San Luis Obispo County		
S2	Los Ranchos School	
Total Number of Parks		7
Total Number of Schools		2

SOURCE: ESA, 2005

5.7.3 Impacts and Mitigation

5.7.3.1 No Action Alternative

The No Action Alternative would not require the acquisition of any Section 4(f) resources in the SBP vicinity, therefore, no direct use of a Section 4(f) resource would occur pursuant to NEPA. None of the nine Section 4(f) properties in the SBP vicinity occurs within the existing 65 CNEL noise contour, as shown in Figure 5.1-1. Therefore, no impairment of these Section 4(f) properties occurs as a result of the operation of aircraft at SBP.



P1 Meadow Park
P2 Sinsheimer Sports Complex
P3 Johnson Park
P4 French Park
P5 Islay Hill Park
P6 Park in Stoneridge Development
P7 Damon-Garcia Sports Fields
S1 Sinsheimer School
S2 Los Ranchos School

SOURCE: ESA Airports, 2005

San Luis Obispo County Regional Airport Master Plan Update EA-EIR . 203092

Figure 5.7-1
Section 4(f) Properties in the Vicinity of SBP

The No Action Alternative would provide for the construction of airfield improvements and aviation support facilities and improvements. None of these project components would cause an increase in the use of existing neighborhood parks to increase their physical deterioration or create the need for additional recreation facilities.

5.7.3.2 Proposed Action

Phase I (2005-2010)

Impact 5.7.1: Impacts to Existing or Potential 4(f) Resources

The Proposed Action would provide for the construction of airfield improvements, aviation support facilities and improvements, and non-aviation construction projects associated with adjacent roadways.

NEPA Analysis

Compared to the No Action Alternative, the Proposed Action would not require the acquisition of any Section 4(f) resources in the SBP vicinity, therefore, no direct use of a section 4(f) resource would occur pursuant to NEPA. The recreational activities associated with each of the nine Section 4(f) properties in the SBP vicinity would not be affected by the Proposed Action and no impairment of any of the nine Section 4(f) properties would occur. None of these nine Section 4(f) properties is within the existing 65 CNEL noise contour and none of these nine Section 4(f) properties would be within the 65 CNEL noise contour in the future. Therefore, no indirect use or constructive use would occur.

Mitigation Measure 5.7-1: None required.

5.7.4 Summary of Impacts

None of the proposed improvements associated with Phase I or Phase II has the potential to cause direct or indirect impacts to known 4(f) resources. If potential 4(f) facilities are associated with the proposed Phase II property acquisitions are identified, they would be identified and evaluated during the detailed environmental analysis performed prior to acquisition. No direct or indirect impacts to 4(f) resources are anticipated under NEPA or CEQA under either phase associated or Proposed Action (see Table 5.7-2).

TABLE 5.7-2
ENVIRONMENTAL TOPIC IMPACTS SUMMARY MATRIX

Impact	Phase I (2005-2010)		Phase II (2011-2023)
	Compared to No Action Alternative	Compared to Baseline Conditions	Compared to Baseline Conditions
Impacts to Existing or Potential 4(f) Facilities	No impacts to Section 4(f) properties	N/A	N/A

LTS = Less than significant
N/A = Not Applicable
S = Significant

SOURCE: ESA, 2006

5.8 Historic, Architectural, Archaeological, and Cultural Resources

Cultural resources, also referred to as historic properties, are districts, sites, buildings, structures, objects, and landscapes significant in American history, prehistory, architecture, archaeology, engineering and culture. For the purposes of this EA/EIR, cultural resources include existing and/or potential historic and prehistoric archaeological sites, historic buildings and structures, and Native American Traditional Cultural Properties (TCPs).

5.8.1 Background and Methodology

5.8.1.1 Regulatory Context

For a discussion of the regulatory context for historic, architectural, archaeological, and cultural resources, see Appendix O.

5.8.1.2 Thresholds of Significance

5.8.1.2.1 NEPA Thresholds

Section 106 of the NHPA requires that a federal agency having direct or indirect jurisdiction over a proposed federal or federally-assisted undertaking, or issuing licenses or permits, must consider the effect of the proposed undertaking on historic properties. An historic site or property may include a prehistoric or historic district, site, building, structure, or object included in, or eligible for inclusion in the NRHP maintained by the U.S. Secretary of the Interior.

Pursuant to FAA Order 1050.1E, Appendix A, Section 11.2b, the FAA determines whether the Proposed Action is an "undertaking" as defined in 36 CFR 800.16(y). The FAA also determines whether the Proposed Action is a type of activity that has the potential to cause adverse effects on historic properties eligible for or listed on the NRHP. If the FAA determines, and the SHPO or THPO does not object, than an undertaking does not have the potential to have an effect on historic properties, a historical or cultural survey is not necessary and the FAA may issue a determination that the Proposed Action has no effect. If an undertaking may have an adverse effect, the first step is to identify the Area of Potential Effect (APE) and the historical or cultural resources within the APE.

A significant impact would occur if the Proposed Action results in an adverse effect to a property that is listed in or eligible for inclusion in the NRHP. The specific Criteria of Effect and Adverse Effect, as defined in 36 CFR 800.9, used to evaluate an undertaking's effect on a historic property, are as follows:

- An undertaking has an effect on a historic property when the undertaking may alter the characteristics of the property that qualify the property for inclusion in the NRHP. For the purpose of determining effect, alteration to features of the property's location, setting, or use may be relevant depending on a property's significant characteristics and should be considered.

- An undertaking is considered to have an adverse effect when the effect on a historic property may diminish the integrity of the property's location, design, setting, materials, workmanship, feeling, or association. Adverse effects on historic properties include, but are not limited to:

  (1) Physical destruction, damage, or alteration of all or part of the property;

  (2) Isolation of the property from or alteration of the character of the property's setting when that character contributes to the property's qualification for the NRHP;

  (3) Introduction of visual, audible, or atmospheric elements that are out of character with the property or alter its setting;

  (4) Neglect of a property resulting in its deterioration or destruction; and

  (5) Transfer, lease, or sale of the property.

Pursuant to Executive Order 13175 (Consultation and Coordination with Indian Tribal Governments [65 FR 67249]), Presidential Memorandum of April 29, 1994 (Government-to-government Relations with Native American Tribal Governments), and Executive Order 13007 (Indian Sacred Sites), Federal agencies must ensure that a proposed project does not adversely affect tribal resources.

5.8.1.2.2 CEQA Thresholds

Section 15064.5 of the California Environmental Quality Act (CEQA) provides guidelines for determining the significance of impacts on historical and unique archaeological resources. Pursuant to CEQA, a significant effect would occur to cultural resources if a Proposed Action would cause any of the following:

- A substantial adverse change in the significance of a historical resource as defined by Section 16064.5. Such resources include those that are listed in, or determined to be eligible for, the California Register of Historical Resources, included in a local register of historical resources or identified as meeting such requirements in a resource survey; or any object, building, site, are, place, record or manuscript which a lead agency determines to be historically significant.

- A substantial adverse change in the significance of an archaeological resource pursuant to 15064.5. A substantial adverse change in the significance of an historical resource means physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of the resource would be materially impaired.

- Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.

- Disturb any human remains, including Native American human and non-native remains interred outside of formal cemeteries. This includes a general prohibition on disinterring, disturbing, or removing human remains from any location other than a dedicated cemetery.

5.8.1.3 Methodologies

FAA is the agency responsible for conducting consultation, as directed by Section 106 of the NHPA, with both the SHPO and affected Native American Tribes. In order to evaluate the impacts to historic and architectural resources in SBP and its vicinity, FAA identified an APE, which is the geographic area or areas in which a Proposed Action may cause changes in the character or use of historic properties, if any such properties are subsequently identified. FAA identified the APE for the Proposed Action to include both the area that would be disturbed by the proposed project components and the area that would be affected by the proposed 65 CNEL noise contour (see Figure 5.8-1). The 65 CNEL noise contour was developed for this analysis based on the passenger forecasts and fleet mix identified in the Master Plan.

In order to evaluate the impacts to other historic and architectural resources in the APE, City of San Luis Obispo and San Luis Obispo County staff were contacted and published documents and reports associated with the airport and potential historic resources were reviewed. The NHRP, the California Historical Landmarks list, and locally designated historical also were reviewed.

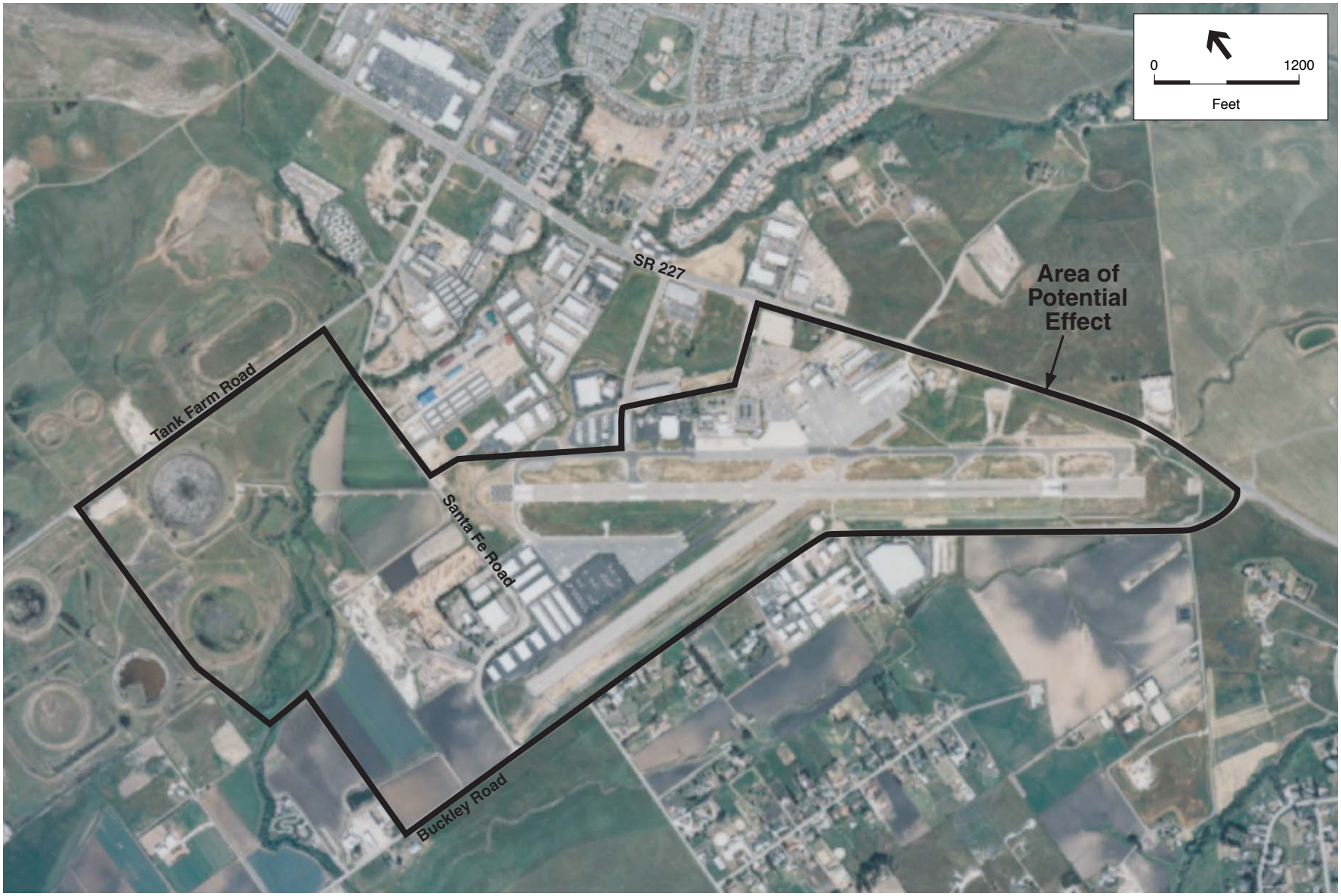
The San Luis Obispo County updated the Airport Master Plan in 1997 and prepared an EA/EIR in 1998. Several other environmental documents were prepared since that time in support of other aviation projects associated with the 1997 Master Plan. The analysis presented in the Master Plan EA/EIR, subsequent environmental studies, and published documents were reviewed to identify cultural resources in the APE.

5.8.2 Baseline Conditions

At the time of Spanish contact, the Airport vicinity was inhabited by the Chumash. The Chumash inhabited the Santa Barbara Channel Islands and the central coastal area of California from approximately San Luis Obispo in the north to Malibu Canyon in the south and inland as far as the west side of the San Joaquin Valley. For a discussion of the ethnographic and historical background associated with the Airport vicinity, please refer to Appendix G.

The Airport opened in 1939, when the land was leased by three local residents. The original Airport was composed only of one 88-foot by 100-foot hangar and dirt runways. Although records are incomplete, it appears that the Army Air Corps and the California National Guard's 115th Observation Squadron began to use the approximately 218-acres of the airport property and facilities soon after the Airport was constructed. By 1940, the War Department installed hard surface runways and lights to support a federally sponsored Civilian Pilot Training Program. The Airport was used simultaneously as a municipal airport.

The Navy subsequently leased 208 acres of the property used by the Army. The Federal government operated the airport through World War II. The Navy used the Airport as an air training center, in support of Amphibious Forces in the Pacific Fleet and as an outlying field for NAS Alameda during World War II. Navy improvements consisted primarily of construction of wooden, prefabricated buildings and superficial improvements to the runways and taxiways. In



SOURCE: ESA Airports, 2005

Figure 5.8-1
Area of Potential Effect (APE)
for Cultural Resources in
the Vicinity of SBP

May 1946, the Navy disposed of the 208 leased acres and abandoned the airport facilities, leaving all improvements to the County of San Luis Obispo.

San Luis Obispo County resumed airport operations in 1946 and began passenger operations. Additional facilities were built soon after, such as another hangar, ramp, and an administration building. None of the structures or improvements made by the military during the World War II Era remains, and the runways have been substantially modified since that time. FAA constructed a control tower in 1988. The Airport has provided uninterrupted passenger service since 1969, and three regional airlines currently use SBP facilities.

In 1987, SBP was dedicated as San Luis Obispo County Airport - McChesney Field, in honor of Leroy E. McChesney, a long-time county resident and aviator. The name was amended again in recent years to become the San Luis Obispo County Regional Airport to reflect the Airport's regional significance.

5.8.2.1 Historical Resources

No federal, state, or locally listed historical resources were identified within the APE (see Appendix G for a list of NRHP resources in San Luis Obispo County).

Based on interviews with County staff and the results of a site survey, four resources were identified within the APE as more than 40 years old, and each was evaluated for its potential to be eligible for the NRHP. These facilities are summarized in Table 5.8-1 and copies of primary record forms are provided in Appendix G.

Based on the results of the record search and site visit, no National Register, California Historical Landmarks, or locally designated historical sites were identified within the APE.

5.8.2.2 Archaeological Resources

No sites, structures, features, or areas of potential archaeological or paleontological significance have been identified within Airport boundaries. Extensive grading and earthmoving have occurred in developed portions of the Airport, including the area associated with runways and runway protection areas. In addition, undeveloped areas of the Airport have been disturbed by ongoing agricultural use. As described in several previous environmental studies, the potential for archaeological resources to exist is remote (FAA, 1998; FAA 2004).

Some archaeological sites have been identified in off-site areas adjacent to San Luis Obispo Creek and its unnamed tributaries. However, the portion of the East Fork of San Luis Obispo Creek upstream of Buckley Road (between Buckley Road and Broad Street) has been realigned and significantly disturbed by previous activities; large pieces of debris, such as asphalt and concrete were placed there in an effort to stabilize the bank, and Santa Fe Road is very near to the creek and approaches the top of bank in some cases (City of San Luis Obispo, 2005).

Acacia Creek, a tributary of East San Luis Obispo Creek that is north of Runway 11, has been significantly disturbed. The portion of the stream that occurs near Airport property has been

TABLE 5.8-1
POTENTIALLY ELIGIBLE HISTORIC STRUCURES/RESOURCES WITHIN THE APE

Structure	Date of Construction and Alternation	Description	Potential Eligibility
Spirit of San Luis Restaurant	1952; altered in 1983.	Originally the terminal building, this structure underwent substantial internal and external renovations in 1983 when it was converted to a restaurant. The structure no longer retains sufficient integrity.	No
San Luis Obispo County Regional Airport Terminal	1962; renovated in 1967, 1983, and 2000.	The building has been altered several times. It does not meet the criteria of exceptional significance.	No
Former Union Oil Company Site	1910	Earthen spill containment berms associated with former fuel tanks, which were destroyed by fire in 1926. Lack sufficient physical integrity to convey any historical associations.	No
Pence Home	Circa 1935	One-story single family home of wood frame construction. Some elements of Mission Revival style, but alterations include changes to windows and roofing material. Not a high-style example of architecture. Not associated with important events, individuals, or the work of a master architect.	No
T-Hangar facilities	Unknown	Two T-hangars pre-fabricated T-hangar facilities. These facilities are not an high-style example of architecture and do not meet the criteria of exceptional significance and do not convey any historical associations,	No

Note: Photographs of the facilities mentioned in Table 5.8-1 are provided in Appendix G of this document.
SOURCE: ESA, 2005

relocated and placed in a concrete channel so it no longer occupies its historic streambed (City of San Luis Obispo, 2005).

5.8.2.3 Native American Resources

The Native American Heritage Commission (NAHC) was contacted to identify records of cultural resources or sacred sites in the project area. The record search did not identify the presence of Native American cultural resources on site or in the APE, but the NAHC recommended further coordination with tribal representatives.

FAA is the sole agency responsible for conducting consultation, as directed by Section 106 of the NHPA, with the potentially affected Native American tribes associated with a Proposed Action. FAA has contacted approximately fifteen representatives of the Chumash Tribe to identify the presence of any known cultural resources or sacred sites. Correspondence with Native American representatives is included in Appendix G. To date, no sites have been identified.

5.8.3 Impacts and Mitigation

5.8.3.1 No Action Alternative

Historical Resources

No known historical resources were identified within the APE; therefore, none of the project components of the No Action Alternative would affect any known historical resource. The construction of the new terminal building, parking area, and FBO would require the demolition of the Pence home and the T-hangar facilities, neither of which were identified as a historical resource during previously approved environmental evaluations (ESA 1998, ESA 2004). The area identified for airside improvements would require grading and paving activities and would not affect any historical resources.

Archaeological Resources

Although archaeological resources have been identified along some portions San Luis Obispo Creak, all components of the No Action Alternative will occur in areas that were previously disturbed. However, it is possible that unknown archaeological deposits could be discovered and disturbed during construction activities, and these impacts could be significant. As part of the adoption of the Airport Master Plan, the County adopted a standard mitigation measure to ensure that no inadvertent disturbance of previously unknown archaeological resources occurs by having a qualified archaeologist monitor earthmoving activities to determine if such resources were encountered. In addition, the proposed activities would not require excavation to a depth greater than 30 feet to disturb potential fossil-bearing units.

Native American Resources

No Native American resources or sacred sites were identified during previous investigations associated with project in the No Action Alternative. In addition, all grading and paving would occur in previously disturbed areas. No impacts to Native American Resources are anticipated.

5.8.3.2 Proposed Action

Phase I (2005 – 2010)

Impact 5.8-1: Effects on Historical Resources

The Phase I project components would involve excavation, filling, and grading activities to accommodate the runway extension and all airside improvements, and to remove a portion of an existing parking lot. Excavation and filling activities would be required to relocate navigation aids and utilities, to realign Santa Fe Road between Buckley and Tank Farm Roads, to construct temporary bridge and haul road facilities, and replace the westside detention pond. None of this excavation would occur to depths of 30 feet below ground surface.

No historical resources were identified with the APE. As required under Section 106 of the NHPA, the FAA made the determination that the Proposed Action would have no effect on

historical resources and the SHPO has concurred with this determination (see Appendix G for copies of the consultation correspondence between FAA and the SHPO).

NEPA Analysis

As with the No Action Alternative, no impacts to historic resources would occur as a result of any of the project components included in the Proposed Action. This is considered to be a less-than-significant impact.

CEQA Analysis

Compared to Baseline Conditions, there would be no additional impact to historical resources as a result of the proposed Phase I project components under Phase I of the Proposed Action. No historical resources listed in, or determined to be eligible for, the California Register of Historical Resources, a local register of historical resources, or other resources determined to be historically significant were identified with the APE. This is considered to be a less-than-significant impact.

Mitigation Measure 5.8-1: None required.

Impact 5.8-2: Potential Discovery of Unknown Archaeological Resources

No known archaeological resources are known to exist at the Airport or in the Airport vicinity. All excavation and grading activities would be performed in areas that have been previously disturbed. The Proposed Action would not cause damage or alter any known sites, structures, features, or areas of potential archaeological or paleontological significance within Airport boundaries. However, earthmoving activities associated with the construction of the various components of the Proposed Action could result in the discovery of previously unknown archaeological resources. As required under Section 106 of the NHPA, the FAA made the determination that the Proposed Action would have no effect on archaeological resources and the SHPO has concurred with this determination (see Appendix G for copies of the consultation correspondence between FAA and the SHPO).

NEPA Analysis

If unknown resources were altered or destroyed by earthmoving activities associated with the construction of project components included as part of the Proposed Action, it would result in a significant impact pursuant to NEPA.

CEQA Analysis

If unknown resources were altered or destroyed by earthmoving activities associated with the construction of project components included as part of the Proposed Action, it would result in a significant impact pursuant to NEPA.

Mitigation Measure 5.8-2: Stop Work if Cultural Materials are Discovered. A qualified archaeologist shall monitor all earthmoving activities at SBP. If buried archaeological or prehistoric resources are discovered during earthmoving activities, work shall stop in that area and within 100 feet of the resource until a qualified archaeologist can assess the significance of

the resource, and, if necessary, develop appropriate treatment measures in consultation with the appropriate agencies. A report outlining the archaeological find and the treatment measures used to mitigate the archaeological find shall be prepared by the qualified archaeologist and submitted to the County's Director of Planning and Building and the County Director of General Services.

If human remains are encountered, the County Coroner shall be contacted immediately. If human remains are determined to be Native American interments, the Coroner should contact the NAHC for determination as to reburial of remains. A report outlining the find shall be prepared by the archaeologist and submitted to the County Director of Planning and Building.

With the implementation of the mitigation measure, the potential to disturb previously unknown archaeological resources would be reduced to a less-than-significant level.

Phase II (2011 – 2023)

Impact 5.8-1: Effects on Historical Resources

The project components under Phase II of the Proposed Action would include the demolition of several buildings, including the improvements on the Saes property and the improvements on the CB&I property. None of the buildings on these properties are listed or eligible for listing on the NRHP.

CEQA Analysis

Compared to the Baseline Conditions, no historic resources would be affected by the construction of project components under Phase II of the Proposed Action. Therefore, this is considered to be a less-than-significant impact.

Mitigation Measure 5.8-1: None required.

Impact 5.8-2 Potential Discovery of Unknown Archaeological Resources

Project components under Phase II of the Proposed Action would involve excavation, filling, and grading activities to accommodate development at the Airport. None of this excavation would occur to depths of 30 feet below ground surface. No archaeological resources are known to exist at the Airport or in the Airport vicinity, and all excavation and grading activities would be performed in areas that have been previously disturbed.

CEQA Analysis

The Proposed Action would not cause damage or alter any known sites, structures, features, or areas of potential archaeological or paleontological significance within Airport boundaries. However, earthmoving activities associated with the construction of the various components of the Proposed Action could result in the discovery of previously unknown archaeological resources. The continued implementation of Mitigation Measure 5.8-2 would reduce this impact to a less-than-significant level.

Mitigation Measure 5.8-2: No additional mitigation required.

5.8.4 Summary of Impacts

Table 5.8-2 summarizes the cultural resource impacts as they relate to Phase I and Phase II of the Proposed Action. Impacts to cultural resources would be less than significant under both Phase I and Phase II. However, mitigation measures are in place and would be required if unknown archaeological resources were discovered during earth moving activities.

TABLE 5.8-2
CULTURAL RESOURCE IMPACTS SUMMARY MATRIX

	Phase I (2005-2010)		Phase II (2011-2023)
Impact	**Compared to No Action Alternative**	**Compared to Baseline Conditions**	**Compared to Baseline Conditions**
Effects on Historical Resources	No effect on any cultural resources	LTS	LTS
Potential Discovery of Unknown Archaeological Resources	No effect on any archaeological resources	LTS	LTS

LTS = Less than significant
N/A = Not Applicable
S = Significant

SOURCE: ESA, 2006

5.9 Biotic Communities

5.9.1 Background and Methodology

This section describes the biotic communities on the Airport and its vicinity as well as potential impacts to biological resources that could result from implementation of the proposed action or its alternatives. Biotic communities within the project footprint and its vicinity fall into four broad categories: 1) California annual grassland or ruderal communities associated with expanses of airfield and other undeveloped areas on and in the vicinity of the Airport; 2) wetlands and riparian and aquatic habitats occurring in and along the creeks and detention basins; 3) urban developed lands with ornamental vegetation surrounding Airport buildings; and 4) agricultural lands. Further information regarding the potential for proposed Master Plan projects to affect special status species is provided in Section 5.10, Endangered and Threatened Species of Flora and Fauna, with impacts to wetlands and other waters of the United States discussed in Section 5.11, Wetlands.

5.9.1.1 Regulatory Context

For a discussion of the regulatory context for biotic communities, see Appendix O.

5.9.1.2 Thresholds of Significance

For the purposes of this EA/EIR, implementation of the Proposed Action may have a significant effect on biological resources if it would exceed the following significance thresholds.

5.9.1.2.1 NEPA Thresholds

According to Federal Aviation Administration (FAA) Order 1050.1E, *Environmental Impacts: Policies and Procedures*, a project would have significant impacts on biotic communities when:

- Analysis or consultation with agencies having jurisdiction over or special expertise with regard to a non-listed species indicates that a project would have a substantial adverse effect on such species. This could include substantial effects on reproductive success rates, natural or non-natural mortality rates, and the ability of a species to maintain adequate population levels.

According to FAA Order 5050.4A (*Airport Environmental Handbook*), a project would have significant impacts on biotic communities when:

- Input from the U.S. Fish and Wildlife Service and the California Department of Fish and Game indicates that substantial, project-induced damage to wildlife cannot be mitigated to minimal levels; or

- Analysis indicates that project implementation would result in the loss of a substantial amount of habitat, of habitat that supports rare species, or of small amounts of sensitive habitat with a significant accompanying loss of plant communities and displacement of wildlife when these adverse impacts to wildlife or wildlife habitat cannot be mitigated to the satisfaction of the resource agencies.

5.9.1.2.2 CEQA Thresholds

According to the CEQA Guidelines a project would have a significant impact on biotic communities if it were to:

- Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by CDFG or USFWS;
- Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means;
- Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites;
- Fundamentally conflict with the provisions of an adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or state habitat conservation plan; or
- Fundamentally conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.

The following additional criteria outlined in the CEQA Guidelines were also used to determine the level of significance of an identified impact for this EA/EIR:

- CEQA Guidelines Section 15065 sets forth Mandatory Findings of Significance and directs lead agencies to find that a project may have a significant effect on the environment if it has the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish and wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of an endangered, rare, or threatened species, or eliminate important examples of the major periods of California history or prehistory.
- CEQA Guidelines Section 15382 (Significant Effect on the Environment) defines a significant effect on the environment, in part, as one that is "…a substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project including land, air, water, minerals, flora, fauna, ambient noise, and objects of historic or aesthetic significance."

5.9.1.3 Methodologies

Evaluation of potential project impacts on the biological resources of a site and its surroundings requires analysis of the individual elements of the project and how introduction of those elements (separately or collectively) would affect the existing resources of the site. Descriptions of biological resources and analysis of impacts are based on available local environmental impact reports, studies of local and regional biological resources, long-term and recent biological surveys, results of focused plant and wildlife surveys, as well as wetland delineations conducted

on Airport property and within the immediate vicinity, and field reconnaissance surveys to corroborate the results of previous surveys.

References used in the preparation of this section include information from field surveys, records from the California Natural Diversity Database (CNDDB) (CDFG, 2005) and the California Native Plant Society's (CNPS) Electronic Inventory of Rare and Endangered Plants (CNPS 2005), standard biological field guides and references (Skinner and Pavlik, 1994; Holland, 1986; Hickman, 1993; Stebbins, 1985; Mayer and Laudenslayer, 1988), previous biological assessments made of the project site and vicinity (San Luis Obispo County, 2003 and 2005), and aerial photographs of the Airport vicinity.

Vegetation types and wildlife habitats were characterized on the basis of reference documents, surveys conducted by other investigators, and field observations by ESA biologists. Surveys to gather information on vegetative communities and wetlands, as well as wildlife and habitat use on and surrounding the Airport, and to verify the results of previous biological reports of the SBP vicinity were conducted by ESA biologists in support of the 1998 Airport Master Plan EIR in December 1997, September and October 1998, and in March 1999. Surveys in support of the current proposed Airport Master Plan were conducted in May and July 2003 and September 2005. Surveys were conducted using a combination of reconnaissance and site-specific survey methods for common and special status wildlife species and wetlands.

5.9.2 Baseline Conditions

The study area for describing the affected biotic environment of the SBP vicinity encompasses biotic communities within the footprint as depicted in Figures 3-1 through 3-3. Areas of detailed analysis include undeveloped lands within the currently developed areas of the Airport, as well as adjacent properties currently in agricultural or light industrial uses and the southeastern-most portion of the Chevron Tank Farm. Downstream reaches of the East Fork of San Luis Obispo Creek and the main stem of San Luis Obispo Creek, including the creek's transition to brackish water and San Luis Bay were also considered as part of the study area but subjected to a less detailed level of analysis. Descriptions of each biotic community occurring in the study area are presented below.

Biological resources within the project area fall into four broad categories: 1) California annual grassland or ruderal communities associated with expanses of airfield and other undeveloped areas on and in the vicinity of the Airport; 2) wetlands and riparian and aquatic habitats occurring in and along the creeks and detention basins; 3) urban developed lands with ornamental vegetation surrounding Airport buildings; and 4) agricultural lands. These areas provide varying degrees of habitat for native vegetation and wildlife, with riparian vegetation and habitat the most diverse, ecologically productive, and important for wildlife. Wetlands and streams are mapped in greater detail in Figure 5.11-1.

5.9.2.1 Annual Grassland – Ruderal

Annual grassland vegetation that persists despite frequent mowing on the airfields includes yellow star-thistle (*Centaurea solstitalis*), intermixed with non-native grasses such as wild oats (*Avena barbata*), soft chess (*Bromus mollis*), annual fescues (*Vulpia* spp.), perennial ryegrass (*Lolium perenne*), rip-gut brome (*Bromus diandrus*), and ruderal herbaceous species including wild mustard (*Brassica nigra*), Russian thistle (*Salsola iberica*), wild radish (*Raphanus sativus*), and sweet fennel (*Foeniculum vulgare*). These species are also common on lands surrounding the Airport, on the perimeter of agricultural lands, and in fallow agricultural fields.

The disturbed vegetation on open lands of the Airport, including airfield and developed areas (e.g., runways, terminals, parking lots), support a number of common wildlife species. Birds using these areas include mourning dove (*Zenaida macroura*), European starling (*Sturnus vulgaris*), red-winged blackbird (*Agelaius phoeniceus*), northern mockingbird (*Mimus polyglottos*), house finch (*Carpodacus mexicanus*), English sparrow (*Passer domesticus*), and western meadowlark (*Sturnella neglecta*). Small mammals in these areas include black-tailed jackrabbit (*Lepus californicus*), California ground squirrel (*Citellus beecheyi*), deer mouse (*Peromyscus maniculatus*), and western harvest mouse (*Reithrodontomys megalotis*). Reptiles, including western fence lizard (*Sceloporus occidentalis*) and gopher snake (*Pituophis melanoleucus*), also use these habitats. The value as wildlife habitat is considered marginal as a result of regular disturbance during mowing and other maintenance activities. Several raptor species that forage in these areas include turkey vulture (*Cathartes aura*), red-tailed hawk (*Buteo jamaicensis*), northern harrier (*Circus cyaneus*), and American kestrel (*Falco sparverius*).

Less frequently disturbed annual grassland areas located on the Chevron Tank Farm property to the north provide habitat of moderate value to wildlife and are made up of a mix of native and non-native grasses as well as herbaceous plant species. Grassland species found here (ESA, 2003; EDAW, 1999; City of San Luis Obispo, 2003) include ripgut brome (*Bromus diandrus*), soft chess (*Bromus hordeaceus*), purple needlegrass (*Nassella pulchra*), tarweed (*Hemizonia* sp.), owl's clover (*Castilleja densiflora* ssp. *obispoensis*), and fennel (*Foeniculum vulgare*). Wildlife found here includes red-tailed hawk, California horned lark (*Eremophila alpestris*), grasshopper sparrow , western meadowlark, Botta's pocket gopher (*Thomomys bottae*), gray fox (*Urocyon cinereoargenteus*), coyote (*Canis latrans*), and gopher snakes.

5.9.2.2 Central Coast Scrub

Central coast scrub occurs on the Chevron Tank Farm property within the project footprint. This community occurs in a mosaic with annual grassland in the drier lowland areas of the site and also on the high ground of the levees and berms that occur throughout the site. This community is dominated by coyote brush (Baccharis pilularis), with black sage (Salvia mellifera) and California sage (Artemisia californica) also occurring in the shrub layer. The understory is similar in composition to the annual grassland described above for the Tank Farm property. Coastal scrub provides habitat for a variety of wildlife species including Anna's (*Calypte anna*) and Costa's (*C. costae*) hummingbirds, California (*Pipilo crissalis*) and spotted towhee (*P. maculatus*), common bushtit (*Psaltriparus minimus*), gopher snakes, and western fence lizards.

5.9.2.3 Developed – Landscaped

The developed areas of the Airport are generally landscaped with common horticultural species, including pines (*Pinus* sp.), juniper (*Juniperus* sp.), and iceplant (*Carpobrotus* sp.). Ruderal plant species also occur in open, un-landscaped areas with disturbed soils. These areas generally have low wildlife habitat value due to the dominance of non-native horticultural plant species and high levels of human disturbance. However, common and often non-native wildlife species can be found using the limited resources here, including house finch, English sparrow, red-tailed hawk, Norway rat (*Rattus rattus*), raccoon (*Procyon lotor*), and opossum (*Didelphis virginiana*).

5.9.2.4 Agricultural

Agricultural fields in the vicinity of the Airport are used for production of row crops. Use of agricultural chemicals, high levels of human disturbance, and low plant diversity combine to provide generally low quality wildlife habitat in agricultural areas. Agricultural lands generally support ruderal species, such as wild mustard, yellow star thistle, and ripgut brome along their perimeters and throughout fallow fields. Nonetheless, agricultural fields often provide habitat and foraging opportunities for small rodents such as pocket gophers and western harvest mice, as well as foraging habitat for species such as red-tailed hawk and white-tailed kite (*Elanus leucurus*).

5.9.2.5 Mixed Riparian Scrub and Woodland

Along the Airport's northern and western boundaries, the East Fork of San Luis Obispo Creek and its tributaries provide riparian vegetation along much of their lengths. The riparian overstory is mixed, with arroyo willow (*Salix lasiolepis*) dominant in many places, particularly in the downstream reaches. Overstory associates include California black walnut (*Juglans californica*), western sycamore (*Platanus racemosa*), cottonwood (*Populus fremontii*), and coast live oak (*Quercus agrifolia*), with blue gum eucalyptus (*Eucalyptus globulus*) occurring in the upstream reaches near Tank Farm Road and Santa Fe Road. The understory has been disturbed along all creeks and contains a mix of native and non-native plant species. Understory shrubs occurring on creek banks include coyote brush (*Baccharis pilularis*) and California sage (*Artemisia californica*) where the canopy is open and California blackberry (*Rubus ursinus*), as well as the non-native Himalayan blackberry (*Rubus discolor*) in both sun and shade. Herbaceous species occurring in the riparian corridor include mugwort (*Artemisia douglasiana*), poison hemlock (*Conium maculatum*), smilo grass (*Piptatherum miliaceum*), wild oat (*Avena* sp.), Italian thistle (*Carduus pycnocephalus*), and sneezeweed (*Helenium puberulum*). Riparian scrub, dominated by arroyo willow, can be found along portions of the East Fork of San Luis Obispo Creek, along a meander no longer hydrologically connected to the East Fork of San Luis Obispo Creek that flows along the southern boundary of the Chevron Tank Farm property, and the Unnamed Tributary to the East Fork of San Luis Obispo Creek that parallels the southern Airport boundary.

In contrast to the generally low-profile vegetation of the Airport, the canopy layers of vegetation along the East Fork of San Luis Obispo Creek and the main stem of San Luis Obispo Creek further downstream are structurally and biologically more complex, creating a relative diversity of wildlife habitats. Although a variety of human disturbances, including agricultural, residential

and industrial development, and cattle grazing have substantially degraded riparian and aquatic habitat along the East Fork of San Luis Obispo Creek and its tributaries, these stream corridors still provide higher quality wildlife habitat for a variety of species than immediately surrounding areas. Reported species include Anna's hummingbird (*Calypte anna*), northern flicker (*Colaptes auratus*), bushtit (*Psaltriparus minimus*), black phoebe (*Sayornis nigricans*), red-winged blackbird, belted kingfisher (*Ceryle alcyon*), black-crowned night heron (*Nycticorax nycticorax*) and American bittern (*Botaurus lentiginosus*), as well as the common scrub jay (*Aphelocoma coerulescens*) and European starling. Also reported using the riparian corridor are waterbirds, including great blue heron (*Ardea herodias*), snowy egret (*Egretta thula*), and great egret (*Casmerodius albus*) (San Luis Obispo County, 1995). Ground-dwelling species, such as California quail (*Callipepla californica*) and California towhee, also are present.

Within the riparian corridors, native mammals include raccoon (*Procyon lotor*), Audubon's cottontail (*Sylvilagus audobonii*), and California ground squirrel. Non-native mammals such as opossum and Norway rat also are present. Common amphibians found within the riparian corridor include bullfrog (*Rana catesbeiana*), western toad (*Bufo boreas*), ensatina (*Ensatina eschscholtzii*) and pacific tree frog (*Hyla regilla*). These species are most common in the freshwater environments and riparian areas associated with the East Fork of San Luis Obispo Creek, but also use adjacent grassland and wetland areas, particularly those at the Chevron Tank Farm property (Unocal, 2003). Reptiles noted in the area include western fence lizard (*Sceloporus occidentalis*), gopher snake, common kingsnake (*Lampropeltis getulus*), and common garter snake (*Thamnophis sirtalis*) (City of San Luis Obispo, 2003; UNOCAL 2003). Small mammals, reptiles, and amphibians provide prey for red-tailed hawks, red-shouldered hawks (*Buteo lineatus*) and other raptors. Omnivores, such as raccoons and striped skunk (*Mephitis mephitis*), forage in the leaf litter and the stream.

San Luis Obispo Creek, downstream of the Airport, provides habitat for the endangered tidewater goby (*Eucyclogobius newberryi*) at its mouth and threatened steelhead trout (*Oncorhynchus mykiss*); however, only marginal habitat for steelhead occurs in the East Fork of San Luis Obispo Creek and its tributaries due to low flows and the seasonal nature of water flows; the lack of tidal influence precludes the presence of the goby. Other fish species reported downstream from the project site in the main stem of San Luis Obispo Creek and its tributaries include three-spined stickleback (*Gasterosteus aculeatus*), mosquitofish (*Gambusia affinis*), speckled dace (*Rhinicthys osculus*), brown bullhead (*Ameiurus nebulosus*), and prickly sculpin (*Cottus asper*) (San Luis Obispo County, 1995). Resident rainbow trout (*Onchorhyncus mykiss*) have been reported in San Luis Obispo Creek and its tributaries upstream of the Airport.

A variety of wildlife habitats occur in the downstream reaches of San Luis Obispo Creek. This stream provides important habitat for resident and migratory waterfowl, shorebirds, and species endemic to saline marsh environments (see also Section 5.10, Endangered and Threatened Species of Flora and Fauna).

5.9.2.6 Wetland Habitats

Instream wetlands

Instream wetlands occur in the East Fork of San Luis Obispo Creek and in the Unnamed Tributary to the East Fork of San Luis Obispo Creek that flows south of the Airport within the project footprint. These wetlands are variable but most often dominated by bentgrass, sedge (*Cyperus eragrostis*), cattail (*Typha latifolia*), and arroyo willow. Instream wetlands generally occur in stream reaches where the overstory canopy is sparse to open, with cattail dominant in the most open reaches. Instream wetlands provide cover, foraging, and breeding habitat for amphibians and fishes using the streams in the project area, including threespine stickleback, Pacific tree frog, bullfrog, and southwestern pond turtle (*Clemmys marmorata pallida*).

Freshwater marsh

Freshwater marsh within the project footprint is also variable and occurs at the Chevron Tank Farm property as well as in detention basins on Airport property. Common species include water smartweed (*Polygonum amphibium*), spikerush (*Eleocharis macrostachya*), and bulrush (*Scirpus acutus*, *S. robustus*), as well as brass buttons (*Cotula coronopifolia*), silverleaf (*Potentilla anserina*) sedges, and curly dock. Freshwater marsh provides high quality cover, foraging, and breeding habitat for a number of water-associated birds, including American coot (*Fulica americana*), great egret, common yellowthroat (*Geothlypis trichas*), and red-winged blackbird, as well as for amphibians and reptiles including pacific tree frog and garter snakes.

Seasonal wetlands

Seasonal wetlands within the project footprint are dominated by herbaceous vegetation and occur in low-lying areas in grasslands throughout the Chevron Tank Farm property, as well as around the margins of open water habitat and freshwater marsh found there. These wetlands support, among other species, toad rush (*Juncus bufonius*), slender rush (*J. tenuis*), curly dock, fiddle dock (*Rumex pulcher*), and saltgrass (*Distichlis spicata*) (UNOCAL 2003). Seasonal wetlands at the Chevron Tank Farm property provide foraging and breeding habitat for wildlife, including numerous bird species, as well as amphibians and reptiles. The seasonal wetlands at the Chevron Tank Farm property are known to support populations of three rare plant species, including Congdon's tarplant (*Centromadia parryi* ssp. *congdonii*) , Hoover's button celery (*Eryngium aristulatum* var. *hooveri*), and San Luis Obispo morning glory (*Calystegia subacaulus* ssp. *episcopalis*)), as well as the federally threatened vernal pool fairy shrimp (*Branchinecta lynchi*) (see Section 5.10, Endangered and Threatened Flora and Fauna for a further discussion of, and analysis of impacts to, these species).

Open Water

Open water habitat occurs within the project footprint on the Chevron Tank Farm property in areas where oil tanks were once situated. The tanks were surrounded with berms and now, in their absence, these areas fill with water during the rainy season. Open water habitat also occurs on the Chevron Tank Farm property along the old meander of the East Fork of San Luis Obispo Creek

and in other areas were water ponds due to berm construction. This habitat type provides wintering, as well as breeding and summer foraging habitat for a variety of water-associated birds, including killdeer (*Charadrius vociferous*), mallards (*Anas platyrhychos*), bufflehead (*Bucephala albeola*), cinnamon teal (*Anas cyanoptera*), and great blue heron. These areas also provide habitat for the federally listed vernal pool fairy shrimp, the non-listed California fairy shrimp (*Linderiella occidentalis*), and numerous other invertebrates, as well as for pacific tree-frogs.

5.9.2.7 Sensitive Natural Communities

Certain biotic communities are considered to be sensitive natural communities, by the USFWS, CDFG, or by local entities. These are generally communities that are locally or regionally uncommon and/or support a high diversity of plants and animals. Of the communities described above riparian woodland and scrub, freshwater marsh, and seasonal wetlands would be considered sensitive natural communities. Because these communities are wetland and riparian associated, potential impacts are analyzed in Section 5.11, Wetlands.

5.9.3 Impacts and Mitigation

5.9.3.1 No Action Alternative

Under the No Action Alternative, Airport facilities would be limited to those already existing and to previously approved projects that have not yet been constructed.

The potential for bird strikes would continue to occur under the No Action Alternative. Bird strikes involving gulls (Larus spp.), occur at SBP in part because the Airport is located within a flyway between the Cold Canyon Landfill, located approximately five miles to the southeast, and wetland habitats to the west. Gull strikes made up 20% of the 69total bird strikes that occurred at SPB between 1990 and 2004. A variety of raptors, including red-tailed hawks, kestrels, and turkey vultures made up an additional 20% of all strikes during the period, while smaller species such as finches, meadowlarks, and red-winged blackbirds accounted for the remainder. Even if the number of bird strikes increases as a result of the increased number of aircraft operations under the No Action Alternative, it is unlikely that bird strikes would have a substantial negative effect on bird populations in the SBP vicinity, since the number of birds belonging to any one species is low, and would remain so, relative to their population sizes. In addition, the species noted are all common in the SBP vicinity as well as throughout California and the United States. With only 69 reported bird strikes between 1990 and 2004, the FAA has not required the Airport to implement a Wildlife Hazard Management Plan. To reduce bird strike hazards, SBP, through its Airport Operations/Maintenance program, implements a Self Inspection Program to report unusual bird concentrations to the ATC Tower and aircraft, and initiate measures to disperse large concentrations of birds to alleviate the risk of bird strikes by aircraft.

Construction of already approved facilities under the No Action Alternative would result in the loss of approximately 17.6 acres of annual grassland and ruderal habitat by 2010. These are not considered sensitive natural communities and are common throughout the Airport vicinity.

Implementation of the No Action Alternative would result in the fill of one seasonal wetland area, 0.06 acres in size, which would constitute an impact on a sensitive natural community.

Construction and increased operations under the No Action Alternative could result in mortality of common wildlife species (road kills, destruction of burrows of such prey species as ground squirrels and gophers, and destruction of nests of ground-dwelling species such as western meadowlark) as well as general degradation of foraging and breeding habitat for common species due to increased disturbance. Wildlife less tolerant of disturbance would be displaced into less disturbed habitat provided by adjacent and nearby undeveloped lands. The common vegetation and wildlife species on the Airport are typical of human-modified habitats.

5.9.3.2 Proposed Action

Phase I (2005-2010)

Impact 5.9-1: Bird Strikes

The potential for bird strikes would continue to occur at SBP under implementation of Phase I of the Proposed Action. Although there would be a reduction in total annual operations under the Proposed Action compared to the No Action Alternative, this may or may not result in a decrease in the potential for bird strikes to occur at SBP.

NEPA Analysis

Compared to the No Action Alternative, the Proposed Action would have fewer total annual operations. However, since the number of bird strikes is not directly proportional to the number of aircraft operations, this would not necessarily result in a specific reduction in the potential for bird strikes at the Airport. The Proposed Action is not likely to result in an increase in mortality of common bird species relative to the No Action Alternative. Thus, impacts resulting from the Proposed Action with respect to avian mortality, reproductive success, and the ability of bird populations in the vicinity of SBP to maintain adequate population levels would be less than significant.

CEQA Analysis

As noted above, the potential for bird strikes is not directly related to the number of aircraft operations. Therefore, impacts resulting from implementation of Phase I affecting avian mortality, reproductive success, and the ability of bird populations in the vicinity of SBP to maintain adequate population levels would be less than significant.

Mitigation Measure 5.9-1: None required.

Impact 5.9-2: Loss of Common Vegetation Types and Habitat

Implementation of the Proposed Action would result in the loss of approximately 18.8 acres of primarily non-native annual grassland and ruderal habitat, which are common throughout the Airport vicinity and are not considered sensitive natural communities.

NEPA Analysis

When compared with the No Action Alternative, the Proposed Action represents an increase in habitat loss of common vegetation types of 1.2 acres. The grasslands within the Airport property boundary provide only low quality habitat for plant and animal species other than those commonly found in areas subjected to high disturbance levels. Non-native annual grasslands within the Airport vicinity provide foraging habitat for raptors, some of which are listed as special status species by USFWS and CDFG, and potential nesting habitat for ground nesting birds, such as horned lark and killdeer. However, none of these species is completely dependent on the Airport property for foraging or breeding habitat and there is an abundance of similar habitat within the Airport vicinity. The majority of grassland habitat loss would be on Airport property and the loss of this low value habitat would not be considered substantial. Therefore, the loss of common non-native annual grasslands and ruderal habitat would be less than significant.

CEQA Analysis

When compared with Baseline Conditions, implementation of the Proposed Action would result in the loss of 18.8 acres of non-native annual grassland and ruderal vegetation and wildlife habitat. Impacts resulting from this loss would be similar to those analyzed above and would not be considered substantial as these communities are common within the Airport vicinity and widespread throughout the region. Therefore, this would be a less-than-significant impact.

Mitigation Measure 5.9-2: None required.

Impact 5.9-3: Impacts on Sensitive Natural Communities

The sensitive natural communities that occur within the footprint of the Proposed Action are all associated with riparian areas or wetlands. Implementation of the Proposed Action would result in the temporary and permanent removal of riparian habitat as well as the temporary and permanent fill of wetlands within the Proposed Action footprint. The seasonal wetlands, freshwater marsh, and riparian woodland and scrub associated with these habitats are considered to be sensitive natural communities as well as jurisdictional waters and wetlands by a variety of agencies, including the Corps, USFWS, CDFG, and the Regional Water Quality Control Board (RWQCB). These impacts are discussed in detail in Section 5.11, Wetlands. Since the sensitive natural communities potentially affected by the Proposed Action are essentially synonymous with wetlands, the mitigation measures detailed in Section 5.11, Wetlands would serve to mitigate potential impacts to sensitive communities as well.

NEPA Analysis

Compared to the No Action Alternative, the Proposed Action would affect sensitive natural communities in the Airport vicinity. With the implementation of the mitigation measures outlined in Section 5.11, Wetlands, the impacts resulting from implementation of the Proposed Action on sensitive natural communities would be less than significant.

CEQA Analysis

Compared to the Baseline Conditions, the Proposed Action would affect sensitive natural communities in the Airport vicinity. With the implementation of mitigation measures outlined in Section 5.11, Wetlands, the impacts resulting from implementation of the Proposed Action on sensitive natural communities would be less than significant.

Mitigation Measure 5.9-3: None required.

Impact 5.9-4: Impacts on Common Wildlife Species

Construction as a result of the Proposed Action could result in mortality of common wildlife species as well as general degradation of foraging and breeding habitat for common species due to increased disturbance. Loss of habitat and increased disturbance would displace wildlife into less disturbed habitat provided by adjacent and nearby undeveloped lands. The common wildlife species found within the Airport vicinity are widely distributed and typical of human-modified habitats.

NEPA Analysis

Compared to the No Action Alternative, the Proposed Action would result in impacts to an additional 1.2 acres of habitat inhabited by common wildlife species. This would not be considered a significant impact under NEPA as the affected species are widely distributed and generally capable of utilizing disturbed and human modified habitat which makes them less sensitive to displacement than species with more specialized requirements. While construction of Phase I project components would likely temporarily increase non-natural mortality rates for local populations of species such as gophers and ground squirrels, this would not represent a substantial impact on common wildlife species reproductive success rates or the ability of these species to maintain adequate population levels as they generally reproduce rapidly and would likely re-colonize areas after construction was completed. Therefore, impacts to common wildlife are considered to be less than significant.

CEQA Analysis

Implementation of the Proposed Action would have temporary and permanent impacts on the East Fork of San Luis Obispo Creek in association with construction of the detention pond outfall into the creek. However, this action would not permanently block the riparian corridor for wildlife movement or significantly alter the character of the riparian corridor. Therefore, this is considered to be a less-than-significant impact.

Mitigation Measure 5.9-4: None required.

Impact 5.9-5: Tree Removal

The construction of the detention pond outfall to the East Fork of San Luis Obispo Creek and the construction of the flood control swale would result in the temporary and permanent removal of riparian vegetation, including trees.

NEPA Analysis

Under the Proposed Action permanent tree removal in the riparian corridor would be limited to the area where the detention pond outfall would be placed. While the trees to be removed are a component of sensitive habitat, the number removed would not constitute a significant loss of habitat in the area as trees would remain along the East Fork of San Luis Obispo Creek both upstream and downstream of the areas where removal would occur. Therefore, this would not be considered a less-than-significant impact.

CEQA Analysis

The removal of trees as a result of the Proposed Action has the potential to conflict with the San Luis Obispo County Code (Title 22, Article 5, Chapter 22.56). However, the County Code stipulates that tree removal in areas within urban reserve lines requires a tree removal permit under most circumstances for the removal of any tree measuring over eight inches in diameter at four feet above grade. Should a tree removal permit be required for the construction of Phase I project components, such a permit would be acquired prior to tree removal activities. This required action and adherence to the terms and conditions of the permit would minimize impacts engendered by tree removal to a less-than-significant impact.

Mitigation Measure 5.9-5: None required.

Phase II (2011-2023)

Impact 5.9-1: Bird Strikes

The potential for bird strikes would continue to occur at SBP under implementation of Phase II of the Proposed Action. Phase II project components would include the construction of facilities in support of additional aircraft operations, such as additional hangars.

CEQA Analysis

As noted above, the potential for bird strikes is not related to the number of aircraft operations. Therefore, impacts resulting from implementation of Phase I affecting avian mortality, reproductive success, and the ability of bird populations in the vicinity of SBP to maintain adequate population levels will be less than significant.

Mitigation Measure 5.9-1: None required.

Impact 5.9-2: Loss of Common Vegetation Types and Habitat

Compared to the Baseline Conditions, implementation of Phase II of the Proposed Action would result in the loss of 29 acres of primarily non-native annual grassland and ruderal vegetation and associated wildlife habitat.

CEQA Analysis

This loss of 29 acres of non-native annual grassland and ruderal vegetation would not be considered a substantial loss of habitat due to the widespread distribution of non-native annual grassland within the Airport vicinity and in the San Luis Obispo region. This would be considered a less-than-significant impact.

Mitigation Measure 5.9-2: None required.

Impact 5.9-3: Impacts on Sensitive Natural Communities

The sensitive natural communities that occur within the footprint of the Proposed Action are all riparian- or wetland- associated. Implementation of Phase II of the Proposed Action would result in the temporary and permanent fill of wetlands within the Proposed Action footprint. The seasonal wetlands and freshwater marsh associated with these wetlands are considered to be sensitive natural communities as well as potentially jurisdictional wetlands by a variety of agencies, including the Corps, USFWS, CDFG, and the Regional Water Quality Control Board (RWQCB). These impacts are discussed in detail in Section 5.11, Wetlands. Since the sensitive natural communities potentially affected by Phase II of the Proposed Action are also jurisdictional waters and wetlands, the mitigation measures detailed in Section 5.11, Wetlands would serve to mitigate potential impacts to sensitive communities as well. In addition, the wetlands affected by Phase II of the Proposed Action provide habitat for federally threatened fairy shrimp. Section 5.10, Endangered and Threatened Species of Flora and Fauna, details mitigation measures to minimize impacts to listed fairy shrimp, which would also serve to minimize impacts to their wetland habitat. Therefore, impacts resulting from implementation of Phase 1 of the Proposed Action on sensitive natural communities would be less than significant.

CEQA Analysis

Compared to the Baseline Conditions, the Proposed Action would affect sensitive natural communities in the Airport vicinity. With the implementation of mitigation measures outlined in Section 5.11, Wetlands and 5.10, Endangered and Threatened Species of Flora and Fauna, the impacts resulting from implementation of the Proposed Action on sensitive natural communities would be less than significant.

Mitigation Measure 5.9-3: None required.

Impact 5.9-4: Impacts on Common Wildlife Species

While the extent of habitat removal under the Proposed Action would be 29 acres, it is unlikely that implementation of Phase II would substantially interfere with wildlife movement as established wildlife corridors are restricted to the riparian corridors in this already highly disturbed area. Implementation of Phase II project components would not cause common wildlife populations to drop below self-sustaining levels or threaten to eliminate a common animal community as suitable habitat for these disturbance adapted species would remain abundant in the vicinity of the Airport and these species would have the ability to re-colonize portions of the area once construction has ceased.

CEQA Analysis

Compared to the Baseline Conditions, the loss of 29 acres of non-native annual grasslands and ruderal vegetation would lead to a loss of habitat for common wildlife species. These impacts on common wildlife under Phase II of the Proposed Action would be similar to those discussed under Phase I. Therefore, implementation of Phase II of the Proposed Action is considered to have a less-than-significant impact on common wildlife populations.

Mitigation Measure 5.9-4: None required.

Impact 5.9-5: Tree Removal

Phase II project components have the potential to result in the removal of a number of currently existing landscaping trees with the demolition of existing buildings on the CB&I property and the construction of the West Side Hangar development.

CEQA Analysis

Similar to tree removal under Phase I, removal of currently existing landscaping trees under Phase II of the Proposed Action has the potential to conflict with the San Luis Obispo County Code. Should a tree removal permit be required for Phase II activities such permit would be acquired prior to tree removal activities. This required action and adherence to the terms and conditions of the permit would minimize impacts engendered by tree removal to less than significant.

Mitigation Measure 5.9-5: None required

5.9.4 Summary of Impacts

Table 5.9-1 summarizes impacts to biotic communities as they relate to implementation of Phase I and Phase II of the Proposed Action. Impacts to biotic communities resulting from the No Action and Proposed Action alternatives would occur primarily as a result of increased aircraft operations and paving non-native annual grassland and ruderal habitat to build roads and runway extensions, as well as construction of additional support facilities. Available wildlife habitat at SBP would be reduced and remaining habitat would be degraded somewhat by implementing the

proposed Airport Master Plan improvements. Improvement projects included in the Airport Master Plan would primarily affect common, widely distributed vegetation types and wildlife species associated with human-disturbed areas.

TABLE 5.9-1
BIOTIC COMMUNITIES IMPACTS SUMMARY MATRIX

	Phase I (2005-2010)		Phase II (2011-2023)
Impact	**Compared to No Action Alternative**	**Compared to Baseline Conditions**	**Compared to Baseline Conditions**
Bird Strikes	No change in the likelihood for bird strikes	LTS	LTS
Loss of Common Vegetation Types and Habitat	Loss of common vegetation types of 1.2 acres	LTS	LTS
Impacts on Sensitive Natural Communities	Loss of 0.184 acres of sensitive natural communities (see Section 5.11, Wetlands)	LTS	LTS
Impacts on Common Wildlife Species	Loss of 1.2 acres of habitat inhabited by common wildlife species	LTS	LTS
Tree Removal	A limited number of trees would be removed along the East Fork of San Luis Obispo Creek	LTS	LTS

LTS = Less than significant
N/A = Not Applicable
S = Significant

SOURCE: ESA, 2006

5.10 Endangered and Threatened Species of Flora and Fauna

5.10.1 Background and Methodology

This section describes the endangered and threatened species of flora and fauna occurring or potentially occurring on the Airport and its vicinity as well as potential impacts to these species that could result from implementation of the Proposed Action. In addition to endangered and threatened species protected by federal or State endangered species legislation, several species known to occur within the Airport vicinity are accorded "special status" on the basis of adopted policies of federal, state and local resource agencies or because of their recognized rarity or vulnerability to habitat loss or population decline. These species are referred to collectively as "special status species" in the CEQA analysis portion of this document, following a convention that has developed in practice but has no official sanction. The various categories encompassed by the term, and the legal status of each, are summarized below.

Plant communities and wildlife habitats within the Airport and its vicinity include landscaped urban lands, grassland and ruderal habitats, and aquatic, wetland, and riparian habitat associated with the East Fork of San Luis Obispo Creek and its tributary. Downstream reaches of the East Fork of San Luis Obispo Creek and special status species potentially inhabiting these reaches are also considered in this evaluation because project activities have the potential to affect this area as well as the Airport and its more immediate vicinity. A full discussion of biotic communities within the project footprint and its vicinity is provided in Section 5.9, Biotic Communities.

5.10.1.1 Regulatory Context

For a discussion of the regulatory context for endangered and threatened species, see Appendix O.

5.10.1.2 Thresholds of Significance

For the purposes of this EA/EIR, implementation of the Proposed Action may have a significant effect on endangered and threatened species if it would exceed the following significance thresholds:

5.10.1.2.1 NEPA Thresholds

According to FAA Order 1050.1E (*Environmental Impacts: Policies and Procedures)*, a project would have significant impacts on endangered and threatened species when:

- The USFWS determines that the proposed action would be likely to jeopardize the continued existence of Federally listed endangered or threatened species, potentially resulting in extinction or extirpation, or would result in the destruction or adverse modification of Federally-designated critical habitat in the affected area

According to FAA Order 1050.1E (*Environmental Impacts: Policies and Procedures)*, a project also could have significant impacts on endangered and threatened species when:

- Input from agencies or organizations with jurisdiction or special expertise concerning the protection and/or management of non-listed species indicates that the proposed action could affect population dynamics and sustainability of the non-listed species by affecting reproductive success rates, natural mortality rates, non-natural mortality, and the minimum population levels required for population maintenance.

According to FAA Order 5050.4A (*Airport Environmental Handbook*), a project would have significant impacts on endangered and threatened species when:

- Input from the USFWS or National Marine Fisheries Service (NMFS) indicates that listed or proposed to be listed species are present within the area affected by the proposed action, and the biological assessment for the proposed action indicates an adverse effect on endangered or threatened species or on critical habitat;

- Input from the USFWS and the California Department of Fish and Game (CDFG) indicates that substantial, project-induced damage to wildlife cannot be mitigated to minimal levels; or

- Analysis indicates that project implementation would result in the loss of a substantial amount of habitat, of habitat that supports rare species, or of small amounts of sensitive habitat with a significant accompanying loss of plant communities and displacement of wildlife when these adverse impacts to wildlife or wildlife habitat cannot be mitigated to the satisfaction of the resource agencies.

5.10.1.2.2 CEQA Thresholds

According to the CEQA *Guidelines* a project would have a significant impact on special status species if it were to have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the CDFG or the USFWS.

For purposes of this EA/EIR, species considered special status under this CEQA Guideline would include:

- Plant and wildlife species listed as rare, threatened or endangered under the federal or State endangered species acts;
- Species that are candidates for listing under either federal or State law;
- Species designated by the USFWS as Species of Concern or by CDFG as Species of Special Concern;
- Species protected by the federal Migratory Bird Treaty Act (16 U.S.C. 703-711);
- Bald and golden eagles protected by the federal Bald Eagle Protection Act (16 U.S.C. 668); or
- Species such as candidate species that may be considered rare or endangered pursuant to Section 15380(b) of the CEQA Guidelines.

5.10.1.3 Methodologies

As discussed in Section 5.9, Biotic Communities, vegetation types and species habitats on the Airport and in the immediate vicinity of the Airport were characterized based on reference documents and reconnaissance level and focused field surveys conducted by ESA biologists and others in support of the 1998 Airport Master Plan and the current proposed Master Plan (December 1997, September and October 1998, March 1999, May and July 2003, and September 2005). References used in the preparation of this section include available local environmental impact reports, records from the California Natural Diversity Database (CNDDB) (CDFG, 2005) and the California Native Plant Society's (CNPS) Electronic Inventory of Rare and Endangered Plants (CNPS 2005), information from the USFWS (USFWS, 1999; 2004; 2005), standard biological field guides and references (Skinner and Pavlik, 1994; Hickman, 1993; Stebbins, 1985; Mayer and Laudenslayer, 1988), previous biological assessments made of the project site and vicinity (City of San Luis Obispo, 2003; County of San Luis Obispo, 2005; Unocal, 2003a; 2003b), and aerial photographs of the Airport vicinity. Field investigations conducted by Unocal for the Tank Farm site included surveys for Morro shoulderband snail, vernal pool fairy shrimp, California red-legged frog (according to USFWS protocol), California tiger salamander, black rail (breeding season), and rare plants (Unocal, 2003a; 2003b). References and field surveys were used to assess habitat quality, special status species distribution and the likelihood of occurrence in the Airport vicinity, and the potential for project impacts to these resources.

Section 7 of the Endangered Species Act, as amended, requires each federal agency to insure that any action authorized, funded, or carried out by that agency is not likely to jeopardize the continued existence of any endangered or threatened species. Information concerning listed species that might occur in the project vicinity was obtained through consultation with USFWS, which has jurisdiction over the endangered tidewater goby and threatened California red-legged frog and vernal pool fairy shrimp, as well as southwestern pond turtle and California linderiella (two federal species of concern), and the National Marine Fisheries Service (NMFS), which has jurisdiction over the threatened steelhead. Pursuant to 50 CFR 402, the FAA consulted with USFWS regarding the effects of the Proposed Action on endangered and threatened species.

5.10.2 Baseline Conditions

As discussed in Section 5.9, Biotic Communities, the study area provides the following plant communities and wildlife habitats: landscaped urban lands, grassland and ruderal habitats, wetlands, and aquatic and riparian habitat associated with the East Fork of San Luis Obispo Creek and its tributary (see Figure 5.9-1). These areas provide varying degrees of habitat for special status species, with riparian vegetation and habitat the most diverse, ecologically productive, and important for these species.

Appendix H identifies the 22 special status plant species and 28 special status wildlife species reported to occur in the Airport vicinity and was complied based on data in the California Natural Diversity Database (CDFG, 2005), California Native Plant Society (CNPS) Electronic Inventory (CNPS, 2005), informal consultation with the USFWS and a USFWS list of species of concern for the project (USFWS, 2004; USFWS, 2005), a USFWS Biological Opinion for the Runway 29

Extension Project (USFWS, 1999), previous biological assessments of the Airport and the Airport vicinity (City of San Luis Obispo, 2003; County of San Luis Obispo, 2005; Unocal, 2003a; Unocal, 2003b), and other sources discussed above. Special status plants and wildlife species are evaluated in this document based on a plausible likelihood of habitat loss or construction-related disturbance occurring during the implementation of the Proposed Action.

Based on a review of known occurrences of these species and the results of surveys of the Airport vicinity, the study area was determined to provide potential habitat for the following special-status species: Morro shoulderband snail, vernal pool fairy shrimp, California linderiella, tidewater goby, steelhead, California red-legged frog, southwestern pond turtle, American peregrine falcon, Cooper's hawk, sharp-shinned hawk, golden eagle, northern harrier, white-tailed kite, burrowing owl, ferruginous hawk, merlin, tricolored blackbird, California horned lark, saltmarsh common yellowthroat, loggerhead shrike, and special-status plants. For a discussion of each of these species, see Appendix H.

5.10.3 Impacts and Mitigation

5.10.3.1 No Action Alternative

The No Action Alternative includes the construction of facilities previously approved under the Proposed Runway 29 Extension Project but not yet built. Previously approved projects are described in Chapter 3, *Alternatives*. Construction of these facilities would result in the removal of approximately 17.6 acres of habitat for common and special status plant and wildlife species over the next five years. As discussed in Section 5.6, Water Quality, construction activities would be required to comply with all National Pollution Discharge Elimination System (NPDES) General Construction Activities Permit and NPDES General Industrial Permit requirements. Thus, a Stormwater Pollution Prevention Plan (SWPPP) for General Construction Activities would be developed to protect stormwater quality and prevent sedimentation and erosion and other water quality impacts to the East Fork of San Luis Obispo Creek, its tributary, and downstream aquatic habitats during and after construction. The existing SWPPP for General Industrial Activities includes measures to protect water quality impacts from aircraft fluids and other hazardous materials utilized during operation and maintenance of the Airport equipment and facilities.

5.10.3.2 Proposed Action

Phase I (2005 – 2010)

Impact 5.10-1: Construction Impacts to Aquatic Vertebrates

Implementation of Phase I of the Proposed Action would result in a new alignment for Santa Fe Road between Buckley Road and the East Fork of San Luis Obispo Creek and construction of a new swale parallel to the East Fork of San Luis Obispo Creek for floodwater containment. A minimum 100-foot setback from the top of bank of the East Fork of San Luis Obispo Creek and the proposed realignment of Santa Fe Road has been established to maintain a buffer zone

between industrial activities and the creek. However, the aforementioned construction activities would result in both temporary and permanent disturbance to the East Fork of San Luis Obispo Creek and its associated riparian corridor.

This creek potentially supports southwestern pond turtle (a federal species of concern). California red-legged frogs (federal threatened species) have a low potential to occur within this creek as well, though protocol surveys for this species within the East Fork of San Luis Obispo Creek were negative. California red-legged frog habitat site assessment data sheets found in Appendix D of the Revised Guidance on Site Assessments and Field Surveys for the California Red-legged Frog have been sent to the U.S. Fish and Wildlife Service to confirm that California red-legged frogs are not present in the Airport vicinity (see Appendix I). In addition, steelhead and its critical habitat and tidewater goby are located downstream of the project within the main stem of San Luis Obispo Creek. Construction activities within or adjacent to aquatic, riparian and wetland habitats of the East Fork of San Luis Obispo Creek have the potential to adversely affect special status aquatic vertebrates through temporary removal of vegetation during trenching of stream crossings, alteration of hydrologic regime, accidental direct mortality from mechanical equipment, entrapment in open trenches, and harassment due to noise or vibration. Accidental release of deleterious construction fluids and other hazardous materials may result in mortality of individuals or destruction of breeding habitat for amphibians and fish downstream. Removal of riparian vegetation could eliminate foraging and nesting habitat, disrupt essential migratory corridors, and result in higher water temperatures that may be inhospitable to native species downstream of the Airport. Appendix J includes correspondence with the National Marine Fisheries Service indicating that the Proposed Action would have no adverse effect on the steelhead (federally threatened and California species of special concern) or the tidewater goby (federally threatened and California species of special concern).

Based on field surveys, the FAA determined that no endangered or threatened aquatic vertebrate species are known to exist in the Airport vicinity (see Appendix J). The FAA also determined that habitat exists for the southwestern pond turtle in the East Fork of San Luis Obispo Creek; however, this species is not known to be present.

NEPA Analysis

Compared to the No Action Alternative, the construction of two project components under the Proposed Action (e.g., the new alignment for Santa Fe Road and construction of a new swale parallel to the East Fork of San Luis Obispo Creek for floodwater containment) could result in significant adverse impacts to the southwestern pond turtle (federal species of concern).

CEQA Analysis

Compared to the Baseline Conditions, the construction of two project components under the Proposed Action (e.g., the new alignment for Santa Fe Road and the construction of a new swale parallel to the East Fork of San Luis Obispo Creek for floodwater containment) could result in substantial adverse impacts to the southwestern pond turtle. This impact would be considered significant under CEQA.

Mitigation Measure 5.10-1a: Southwestern Pond Turtle Surveys and Impact Avoidance. Construction activities within aquatic habitats shall occur between April and October when water flow is absent or at its lowest level unless otherwise negotiated with responsible agencies.

No more than two weeks prior to the commencement of ground disturbing activities, a qualified biologist funded by the County shall perform southwestern pond turtle surveys within suitable habitat on the project site. Surveys shall include nests as well as individuals. A qualified biologist with applicable permits shall temporarily relocate any identified southwestern pond turtles upstream of the construction site, and temporary barriers shall be placed around the construction site to prevent ingress. Construction shall not proceed until the work area is determined to be free of turtles or their nests. The qualified biologist shall be responsible for relocating adult turtles that move into the construction zone after construction has begun. If a nest is located within a work area, a biologist with the appropriate permits from CDFG may move the eggs to a suitable facility for incubation, and release hatchlings into the creek system in late fall. The qualified biologist shall be present on the project site during initial ground clearing and grading and during construction activities within or adjacent to potential southwestern pond turtle habitat.

Implementation of Mitigation Measure 5.10-1a, as well as the water quality protection measures in Mitigation Measure 5.6-1a and the wetland compensation measures in Mitigation Measure 5.11-1 would reduce the impacts to southwestern pond turtles to a less-than-significant level.

Impact 5.10-2: Construction Impacts to Birds

Grasslands, wetlands, edges of agricultural fields and trees and shrubs within mixed riparian scrub and woodland on the Airport and in the Airport vicinity may provide foraging habitat for American peregrine falcon and foraging and/or nesting habitat for non-listed special status birds such as tricolored blackbird, California horned lark, loggerhead shrike, salt marsh common yellowthroat, as well as Cooper's hawk, sharp-shinned hawk, northern harrier, white-tailed kite, burrowing owl, golden eagle, ferruginous hawk, merlin and other raptors. Although a minimum 100-foot setback from the top of bank of the East Fork of San Luis Obispo Creek and the proposed realignment of Santa Fe Road has been established to maintain a buffer zone between industrial activities and the creek, implementation of Phase I of the Proposed Action would result in disturbance within and adjacent to the East Fork of San Luis Obispo Creek and its riparian corridor during construction of the new alignment for Santa Fe Road and a new swale parallel to the East Fork of San Luis Obispo Creek. Implementation of Phase I also would result in the loss of grassland foraging and breeding habitat.

Construction activities associated with the Proposed Action, including activities within and adjacent to the East Fork of San Luis Obispo Creek and removal of grasslands, trees and other nesting habitat during the breeding season, have the potential to result in direct mortality of special-status birds and loss of foraging and nesting habitat. In addition, human disturbances and construction noise have the potential to cause nest abandonment and death of young or loss of reproductive potential at active nests located near project activities. Construction disturbances of

burrowing owl habitat during the non-breeding season also could result in adverse impacts to this species.

Based on field surveys, the FAA determined that no endangered or threatened bird species are known to exist at the Airport. Some birds that are protected under the Migratory Bird Treaty Act do exist in the Airport vicinity.

NEPA Analysis

Compared to the No Action Alternative, the Proposed Action would result in construction activities that result in direct or indirect disturbance of nesting birds that are protected under the Migratory Bird Treaty Act. These direct or indirect impacts could be significant.

In addition, the Proposed Action would result in the loss of grassland and other common habitats potentially used by foraging and nesting birds compared to the No Action Alternative. This would not be considered a substantial loss of habitat due to the widespread distribution of non-native annual grassland within the Airport vicinity and regionally. Section 5.11, Wetlands discusses habitat replacement and other measures to mitigate for the loss of sensitive habitats disturbed through Phase I of the Proposed Action (i.e. wetlands and riparian habitat), reducing the impact of this habitat loss. Due to the availability of foraging and nesting habitat in the Airport vicinity and region, habitat loss would not be a substantial adverse impact and therefore, would not be significant.

CEQA Analysis

Compared to the Baseline Conditions, the Proposed Action would result in construction activities that result in direct or indirect disturbance of special status nesting birds. These direct or indirect impacts could be significant.

In addition, the Proposed Action would result in the loss of grassland and other common habitats potentially used by foraging and nesting special status birds. This would not be considered a substantial loss of habitat due to the widespread distribution of non-native annual grassland within the Airport vicinity and regionally. Section 5.11, Wetlands discusses habitat replacement and other measures to mitigate for the loss of sensitive habitats disturbed through Phase I of the Proposed Action (i.e. wetlands and riparian habitat), reducing the impact of this habitat loss. Due to the availability of foraging and nesting habitat in the Airport vicinity and region, habitat loss would not be a substantial adverse impact and therefore, would not be significant.

Mitigation Measure 5.10-2a: Avoid Disturbance to Nesting Birds. If construction activities (i.e., ground clearing and grading, including removal of trees or shrubs) are scheduled to occur during the nonbreeding season (typically September 1 through January 31), no mitigation is required.

If construction activities are scheduled to occur during the breeding season (typically February 1 through August 31), the following measures shall be implemented to avoid potential adverse effects to nesting special-status raptors and other birds:

- A qualified wildlife biologist shall conduct preconstruction surveys of all potential nesting habitat within 500 feet of project activities where access is available.

- If active nests are found during preconstruction surveys, a no-disturbance buffer acceptable in size to CDFG shall be created around active raptor nests and nests of other special-status birds during the breeding season or until it is determined that all young have fledged. Typical buffers include 500 feet for raptors and 250 feet for other nesting birds. Raptor or other bird nests initiated during construction are presumed to be unaffected and no buffer is necessary. However, the "take"[1] of any individuals shall be prohibited. Buffer zones may be adjusted in coordination with CDFG based on site-specific conditions and ambient noise and disturbance levels.

- If preconstruction surveys indicate that nests are inactive or potential habitat is unoccupied during the construction period, no further mitigation is required. Trees and shrubs within the construction footprint that have been determined to be unoccupied by special-status birds or that are located outside the no-disturbance buffer for active nests may be removed.

Mitigation Measure 5.10-2b: Avoid disturbance to burrowing owl. No more than two weeks before construction, a survey for burrows and burrowing owls shall be conducted by a qualified biologist within 500 feet of the construction disturbance area (access permitting). The survey shall conform to the protocol described by the California Burrowing Owl Consortium (1993), which includes up to four surveys on different dates if there are suitable burrows present.

If occupied owl burrows are found during preconstruction surveys, a determination shall be made by a qualified burrowing owl biologist as to whether or not construction would affect the occupied burrows or disrupt reproductive behavior. If it is determined that construction would not adversely affect occupied burrows or disrupt breeding behavior, construction may proceed without any restriction or mitigation measures. If it is determined that construction could adversely affect occupied burrows during the August 31 through February 1 non-breeding season, the subject owls may be passively relocated from the occupied burrow(s) using one-way doors. There shall be at least two unoccupied burrows suitable for burrowing owls within 300 feet of the occupied burrow before one-way doors are installed. The unoccupied burrows shall be located 160 feet from construction activities and can be natural burrows or artificial burrows constructed according to current design specifications. Artificial burrows shall be in place at least one-week before one-way doors are installed on occupied burrows. One-way doors would be in place for a minimum of 48 hours before burrows are excavated.

If it is determined that construction would physically affect occupied burrows or disrupt reproductive behavior during the nesting season (February 1 through August 31) then avoidance is the only mitigation available (California Burrowing Owl Consortium 1993; CDFG 1995). Construction would be delayed within 250 feet of occupied burrows until it is determined that the subject owls are not nesting or until a qualified biologist determines that juvenile owls are self sufficient or are no longer using the natal burrow as their primary source of shelter.

[1] Take is defined as harassing, harming, pursuing, hunting, shooting, wounding, killing, trapping, capturing, collecting, or attempting to engage in any such conduct.

Implementation of Mitigation Measures 5.10-3a and b would reduce potential impacts to nesting birds to a less-than-significant level.

Impact 5.10-3: Construction Impacts to Plants

Fallow fields and low-lying areas within grasslands on the Airport and vicinity have potential to support Congdon's tarplant. Construction activities associated with Phase I of the Proposed Action, including the new alignment for Santa Fe Road as well as construction of airfield facilities and airfield support facilities may occur within habitat for special status plants. Construction activities within or adjacent to special status plant habitat have the potential to result in indirect and direct disturbance or mortality of special status plants as a result of grading and clearing and other ground disturbance. Additional construction effects would be related to trampling, soil compaction, and potential removal of or damage to special-status plants and their roots.

NEPA Analysis

Construction activities associated with the several project components of the Proposed Action (e.g., the new alignment for Santa Fe Road, as well as construction of airfield facilities and airfield support facilities) could result in substantial adverse impacts to Congdon's tarplant, which is a federal species of concern. This is considered to be a significant impact.

CEQA Analysis

Impacts to special status plants associated with Phase I of the Proposed Action would be the same as those discussed above under NEPA. Compared to the Baseline Conditions, the construction of project components under the Proposed Action could result in substantial adverse impacts to special status plants.

Mitigation Measure 5.10-3: Avoid Impacts to Plants. Prior to construction, a qualified botanist shall conduct surveys for Congdon's tarplant and other special status within the limits of construction disturbance following CDFG survey guidelines. Special status plants identified within the construction disturbance area shall be avoided to the extent feasible. A qualified botanist shall supervise the installation of orange construction fencing or other visible material to establish buffer zones between special status plants and construction disturbance. In the event that is infeasible to avoid disturbance to special status plants then the County shall compensate for the loss of special status species and their habitat at a ratio acceptable to USFWS and other applicable regulatory agencies within the project region by creating, restoring or enhancing special status species habitat, or contributing in-lieu funds to an existing or new restoration project preserved in perpetuity. The restoration effort shall require funding from the County prior to the initiation of ground disturbing activities for the implementation of a five-year monitoring and reporting program with applicable performance standards and success criteria**.**

Impact 5.10-4: Construction Impacts to Aquatic Invertebrates

The Chevron Tank Farm Property on the north side of the East Fork of San Luis Obispo Creek is known habitat for vernal pool fairy shrimp. Although the habitat assessment that was conducted in May 2006 determined that no habitat for vernal pool fairy shrimp exists on the Airport property on the south side of the East Fork of San Luis Obispo Creek (see Appendix N), the FAA determined that there is a potential for the Proposed Action to adversely affect vernal pool fairy shrimp. As a result, the FAA requested formal consultation with USFWS (see Appendix J). The USFWS provided a biological opinion that required mitigation be implemented to minimize the impacts to vernal pool fairy shrimp (see Appendix J).

NEPA Analysis

Construction activities associated with the several project components of the Proposed Action (e.g., the new alignment for Santa Fe Road, as well as construction of airfield facilities and airfield support facilities) could result in adverse impacts to vernal pool fairy shrimp, which is an endangered species. This is considered to be a significant impact. The USFWS has agreed with this assessment and has issued a biological opinion that the proposed action is not likely to jeopardize the continued existence of the vernal pool fairy shrimp (see Appendix J).

CEQA Analysis

Using the habitat assessment prepared in May 2006, the County determined that no habitat exists for the vernal pool fairy shrimp on the Airport property and that the Proposed Action would not have any impact to aquatic invertebrate species.

Mitigation Measure 5.10-4a: Prepare and Implement a Resource Management Plan. The County shall document occurrences of vernal pool fairy shrimp on Airport property in order to avoid and minimize take and develop a resource management plan. To accomplish this, the County shall:

- Conduct vernal pool fairy shrimp surveys according to USFWS 1996 guidelines beginning in the 2006 dry season.

- Ensure that only qualified personnel authorized under the auspices of the USFWS biological opinion conduct the survey for vernal pool fairy shrimp and implement or oversee the USFWS-approved resource management plan (which may include the collection and relocation of vernal pool fairy shrimp cysts). The County shall request approval of the USFWS of any biologist the County wishes to conduct the surveys. The request shall be made to the USFWS at least 15 days prior to any such activities being conducted

- The County shall avoid occupied vernal pool fairy shrimp habitat to the maximum extent possible. This includes locating all staging areas at least 100 yards away from any occupied vernal pool fairy shrimp habitat.

- If two or more occupied vernal pool fairy shrimp pools are degraded or filled during construction activities, regardless of cause, the County shall contact the USFWS

immediately so the USFWS can review the project implementation and causes of take to determine if additional protective measures are needed. Construction activities may continue during this USFWS review period provided that all terms and conditions of the USFWS biological opinion have been and continue to be implemented.

Mitigation Measure 5.10-4b: Obtain USFWS Approval of Implementation Plans. The County shall obtain USFWS approval of the stormwater pollution prevention plan (see Mitigation Measure 5.6a), the wetland mitigation and monitoring plan (see Mitigation Measure 5.11-1), and the resource management plan for vernal pool fairy shrimp (see Mitigation Measure 5.10-4a) prior to the start of construction.

Mitigation Measure 5.10-4c: Implement a Biological Resource Education Program. The County shall implement a biological resource education program for construction crews and contractors (primarily crew and construction foremen) prior to construction. The education program would include a brief review of vernal pool fairy shrimp and other special-status species and sensitive resources that could exist in the area affected by project components under the Proposed Action (including their life history and habitat requirements), the locations of sensitive biological resources, and their legal status and protection. The education program would include materials describing sensitive resources, resource avoidance, permit conditions, and possible fines for violations of State or federal environmental laws.

In addition to Mitigation Measures 5.10-4a, 5.10-4b, and 5.10-4c, above, the County shall implement water quality protection measures during and after grading and ground-disturbing activities at the project site to protect aquatic habitat within the project area and downstream as described in Mitigation Measure 5.6-1a. Best management practices could include trenching across wetlands during low flow periods, use of sediment curtains, installation of silt fencing and other erosion control measures, preparing and implementing a spill prevention plan, storing equipment and materials outside of sensitive habitats. Wetland compensation measures including developing and implementing a revegetation plan with applicable performance standards and contingency measures approved by the Corps, CDFG, and other applicable agencies at disturbed sites are included in Mitigation Measure 5.11-1.

Implementation of Mitigation Measures 5.10-4a, 5.10-4b, and 5.10-4c, above, as well as these water quality and wetland compensation measures outlined as Mitigation Measure 5.6-1a and Mitigation Measure 5.11-1, respectively, would ensure that significant impacts to special status aquatic invertebrates do not occur.

Phase II (2011 – 2023)

Impact 5.10-1: Construction Impacts to Aquatic Vertebrates

Implementation of Phase II of the Proposed Action would not result in any construction activities within 100 feet of the East Fork of San Luis Obispo Creek or potential habitat for southwestern pond turtle, steelhead, or tidewater goby. However, extension of the approach lighting system and construction of access roads to the lighting system could affect potential wetland habitat for

California red-legged frog. Although protocol surveys for this species within this area were negative, California red-legged frogs have a low potential to occur within wetlands at the Chevron Tank Farm property. Construction activities could result in impacts to this species through accidental direct mortality from mechanical equipment, entrapment in open trenches, and harassment due to noise or vibration as well as habitat loss or degradation.

CEQA Analysis

If California red-legged frogs are present on the Chevron Tank Farm property, the extension of the approach lighting system and construction of access roads to the lighting system under Phase II of the Proposed Action could result in substantial adverse impacts. The implementation of Mitigation Measure 5.10-1b, as well as the water quality protection measures in Mitigation Measure 5.6-1a and the wetland compensation measures in Mitigation Measure 5.11-1 would reduce this impact to a less-than-significant level.

Mitigation Measure 5.10-1b: Implement Protocol Level Surveys from the USFWS Programmatic Biological Opinion for California red-legged frog. The County shall comply with the provisions of the federal Endangered Species Act and acquire the necessary permits for all phases of the Proposed Action that would, or potentially could, affect California red-legged frog. The protocol level surveys and measures from the USFWS programmatic biological opinion for California red-legged frog (1999) are identified below.

1. At least 15 days prior to the onset of activities, the County shall submit the name(s) and credentials of biologists who would conduct activities specified in the following measures. No project activities will begin until the County has received written approval from the USFWS that the biologist(s) is qualified to conduct the work.

2. A USFWS-approved biologist shall survey the site two weeks before the onset of activities. If California red-legged frogs, tadpoles, or eggs are found, the approved biologist shall contact the USFWS to determine if moving any of these life-stages is appropriate. In making this determination, the USFWS shall consider if an appropriate relocation site exists. If the USFWS approves moving animals, the approved biologist shall be allowed sufficient time to move California red-legged frogs from the work site before work activities begin. Only USFWS-approved biologists shall participate in activities associated with the capture, handling, and monitoring of California red-legged frogs.

3. Before any construction activities begin on a project, the USFWS-approved biologist shall conduct a training session for all construction personnel. At a minimum, the training shall include a description of the California red-legged frog and its habitat, the importance of the California red-legged frog and its habitat, the general measures that are being implemented to conserve the California red-legged frog as they relate to the Proposed Action, and the boundaries within which the project may be accomplished. Brochures, books and briefings may be used in the training session, provided that a qualified person is on hand to answer any questions.

4. A USFWS-approved biologist shall be present at the work site until such time as all removal of California red-legged frogs, instruction of workers, and habitat disturbance have been completed. After this time, the County shall designate a person to monitor on-site compliance with all mitigation measures. The USFWS-approved biologist shall ensure that this individual receives training outlined above in Measure 3 and in the identification of

California red-legged frogs. The monitor and the USFWS-approved biologist shall have the authority to halt any action that might result in impacts that exceed the levels anticipated by the Corps and USFWS during review of the Proposed Action. If work is stopped, the Corps and USFWS shall be notified immediately by the USFWS-approved biologist or on-site biological monitor.

5. During project activities, all trash that may attract predators shall be properly contained, removed from the work site and disposed of regularly. Following construction, all trash and construction debris shall be removed from work areas.

6. All fueling and maintenance of vehicles and other equipment and staging areas shall occur at least 20 meters from any riparian habitat or water body. The Corps and County shall ensure contamination of habitat does not occur during such operations. Prior to the onset of work, the Corps shall ensure that the County has prepared a plan to allow a prompt and effective response to any accidental spills. All workers shall be informed of the importance of preventing spills and of the appropriate measures to take should a spill occur.

7. A USFWS-approved biologist shall ensure that the spread or introduction of invasive exotic plant species will be avoided to the maximum extent possible. When practicable, invasive exotic plants in the project areas shall be removed.

8. The number of access routes, number and size of staging areas, and the total area of the activity shall be limited to the minimum necessary to achieve the project goal. Routes and boundaries shall be clearly demarcated, and these areas will be outside of riparian and wetland areas.

9. Work activities shall be completed between April 1 and November 1. Should the project applicant require working in California red-legged frog habitat outside this period, the Corps and USFWS shall be consulted for approval.

10. To control erosion during and after project implementation, the County shall implement best management practices, as identified by the Regional Water Quality Control Board.

11. If dewatering is required, intakes shall be completely screened with wire mesh not larger than five millimeters (mm) to prevent California red-legged frogs from entering the pump system. Water shall be released or pumped downstream at an appropriate rate to maintain downstream flows during construction. Upon completion of construction activities, any barriers to flow shall be removed in a manner that allows flow to resume with the least disturbance to the substrate.

12. A USFWS-approved biologist shall permanently remove, from within the project area, any individuals of exotic species, such as bullfrogs, crayfish, and centrachid fishes, to the maximum extent possible. The County shall ensure that these activities are in compliance with the California Fish and Game Code.

13. The downstream construction boundary shall be fenced to prohibit the movement of frogs into the construction area and to control creek siltation and disturbance to downstream riparian habitat. For construction associated with the East Fork of San Luis Obispo Creek, a frog exclosure fence shall be installed in the creek channel both upstream and downstream of construction activities. Fences shall be installed at least six weeks prior to the commencement of any construction activities and shall be constructed in accordance with USFWS-approved protocol. The final fence locations shall be approved by a USFWS-approved biologist before installation.

14. Immediately after installation of the frog exclosure fence, a USFWS-approved biologist shall inspect all areas within the fence for California red-legged frogs.

Implementation of Mitigation Measure 5.10-1, as well as the water quality protection measures in Mitigation Measure 5.6-1a and the wetland compensation measures in Mitigation Measure 5.11-1 would reduce the impacts to special status aquatic vertebrates to a less-than-significant level..

Impact 5.10-2: Construction Impacts to Birds

Extension of the approach lighting system, construction of access roads to the lighting system, and other construction activities during implementation of Phase II of the Proposed Action could affect potential habitat for special status birds. As discussed above, removal of grasslands, trees and other nesting habitat during the breeding season, have the potential to result in direct mortality of special-status birds and loss of foraging and nesting habitat. In addition, human disturbances and construction noise have the potential to cause nest abandonment and death of young or loss of reproductive potential at active nests located near project activities. Construction disturbances of burrowing owl habitat during the non-breeding season also could result in adverse impacts to this species.

CEQA Analysis

The loss of grassland and other common habitats potentially used by special status birds would not be considered substantial due to the widespread distribution of non-native annual grassland within the Airport vicinity and regionally. Section 5.11, Wetlands discusses habitat replacement and other measures to mitigate for the loss of sensitive habitats disturbed through Phase I of the Proposed Action (i.e. wetlands and riparian habitat), reducing the impact of this habitat loss. Construction activities that result in direct or indirect disturbance to special status nesting birds could result in a significant impact under CEQA. The continued implementation of Mitigation Measures 5.10-2a and 5.10-2b would reduce potential impacts to special status nesting birds to a less-than-significant level.

Mitigation Measure 5.10-2: No additional mitigation required.

Impact 5.10-3: Construction Impacts on Plants

Congdon's tarplant, Cambria morning glory and Hoover's button-celery are known to occur on the Chevron Tank Farm property. Fallow fields and low-lying areas within grasslands on the Airport and in the Airport vicinity also have potential to support Congdon's tarplant. Extension of the approach lighting system, construction of access roads to the lighting system, and other construction activities during implementation of Phase II of the Proposed Action could affect potential habitat for special status plants and result in direct mortality of these species due to grading and clearing, trampling, soil compaction and other ground disturbance.

CEQA Analysis

Construction activities under Phase II of the Proposed Action could result in disturbance to special status plants. Substantial adverse impacts to special status plants would be considered significant impacts under CEQA. The continued implementation of Mitigation Measure 5.10-3 would reduce potential impacts to special status plants to a less than significant level.

Mitigation Measure 5.10-3: No additional mitigation required.

Impact 5.10-4: Construction Impacts to Aquatic Invertebrates

Implementation of Phase II of the Proposed Action would result in the extension of the approach lighting system and construction of access roads to the lighting system. These activities would result in both temporary and permanent disturbance to seasonal wetlands that support vernal pool fairy shrimp and California linderiella. Potential impacts of Phase II the Proposed Action would include direct mortality of vernal pool fairy shrimp and California linderiella as well as temporary and permanent habitat loss and degradation due to removal of vegetation, sedimentation and erosion, introduction of equipment fluids and other hazardous construction materials and other water quality impacts.

CEQA Analysis

Compared to the Baseline Conditions, the extension of the approach lighting system and construction of access roads to the lighting system under Phase II of the Proposed Action could result in substantial adverse impacts to vernal pool fairy shrimp and California linderiella. The implementation of Mitigation Measure 5.10-4 as well as Mitigation Measure 5.6-1a and Mitigation Measure 5.11-1 would reduce this impact to a less-than-significant level.

Mitigation Measure 5.10-4a: Prepare and Implement a Resource Management Plan. The County shall continue to implement the USFWS-approved Resource Management Plan to protect vernal pool fairy shrimp and California linderiella.

Mitigation Measure 5.10-4b: Obtain USFWS Approval of Implementation Plans. The County shall reconfirm that USFWS approves of the stormwater pollution prevention plan (see Mitigation Measure 5.6a), the wetland mitigation and monitoring plan (see Mitigation Measure 5.11-1), and the resource management plan for vernal pool fairy shrimp (see Mitigation Measure 5.10-4a) prior to the start of construction.

Mitigation Measure 5.10-4c: Implement a Biological Resource Education Program. The County shall continue to implement a biological resource education program for construction crews and contractors.

In addition to Mitigation Measures 5.10-4a, 5.10-4b, and 5.10-4c, above, the County shall continue to implement Mitigation Measure 5.6-1a. and Mitigation Measure 5.11-1. Continued implementation of these mitigation measures would ensure that significant impacts to special status aquatic invertebrates do not occur.

5.10.4 Summary of Impacts

Impacts to special status species resulting from the Proposed Action would occur primarily as a result of construction and operation of aviation support facilities, airfield facilities, and roads. In particular, activities within and adjacent to the East Fork of San Luis Obispo Creek and airfield facilities on the Chevron Tank Farm property have the highest potential to affect special status species. These activities may result in adverse impacts to special status species through direct mortality and habitat loss and degradation.

Table 5.10-1 summarizes special status species impacts as they relate to implementation of Phase I and Phase II of the Proposed Action. With project mitigation, impacts to endangered and threatened species would be less than significant.

TABLE 5.10-1
ENDANGERED AND THREATENED SPECIES IMPACTS SUMMARY MATRIX

	Phase I (2005-2010)		Phase II (2011-2023)
Impact	**Compared to No Action Alternative**	**Compared to Baseline Conditions**	**Compared to Baseline Conditions**
Construction impacts to aquatic invertebrates	Potential impacts to southwestern pond turtle; mitigation to avoid impacts to southwestern pond turtle	LTS	LTS
Construction impacts to birds	Impacts to nesting birds; mitigation would avoid construction during nesting season	LTS	LTS
Construction impacts to plants	Potential impacts to Congdon's tarplant; mitigation would result in restoration of any habitat affected	LTS	LTS
Construction impacts to aquatic invertebrates	Potential impacts to vernal pool fairy shrimp; mitigation to compensate for the impacts to vernal pool fairy shrimp	LTS	LTS

LTS = Less than significant with incorporation of mitigation
N/A = Not Applicable
S = Significant

SOURCE: ESA, 2006

5.11 Wetlands

5.11.1 Background and Methodology

Wetlands are ecologically productive habitats that support a rich variety of both plant and animal life. The importance and sensitivity of wetlands have increased as a result of their widespread destruction to enable urban and agricultural development. Wetlands and other water-associated habitats are protected under the federal Clean Water Act, the California Fish and Game Code, and the State Porter-Cologne Act and regulated by a variety of agencies as outlined below.

5.11.1.1 Regulatory Context

For a discussion of the regulatory context for wetlands, see Appendix O.

5.11.1.2 Thresholds of Significance

Wetlands are defined in 33 CFR 328.3(a), and considerations for analysis of significant impacts to wetlands are contained in Executive Order 11990, Protection of Wetlands. Agencies consulted in the preparation of this EA/EIR to determine whether impacts of the project components on wetlands and aquatic habitats would be significant include the U.S. Fish and Wildlife Service (USFWS), the U.S. Army Corps of Engineers (Corps), and the Regional Water Quality Control Board (RWQCB).

5.11.1.2.1 NEPA Thresholds

FAA Order 1050.1E, Appendix A, Section 18 states that a significant impact would occur when a proposed action causes any of the following:

- The action would adversely affect the function of a wetland to protect the quality or quantity of municipal water supplies, including sole source, potable water aquifers.
- The action would substantially alter the hydrology needed to sustain the functions and values of the affected wetland or any wetlands to which it is connected.
- The action would substantially reduce the affected wetland's ability to retain floodwaters or storm-associated runoff, thereby threatening public health, safety or welfare (this includes cultural, recreational, and scientific resources important to the public, or property).
- The action would adversely affect the maintenance of natural systems that support wildlife and fish habitat or economically-important timber, food, or fiber resources in the affected or surrounding wetlands.
- The action would promote development of secondary activities or services that would affect the resources mentioned above.
- The action would be inconsistent with applicable State wetland strategies.

5.11.1.2.2 CEQA Thresholds

For the purposes of this EA/EIR, implementation of the Proposed Action may have a significant effect on Waters of the U.S. or waters of the State if it were to exceed the following CEQA significance thresholds, based on Appendix G of the CEQA Guidelines:

- Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by CDFG or USFWS;

- Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means; or

- Fundamentally conflict with any local policies or ordinances protecting streams or wetlands, such as a creek preservation ordinance.

The following additional criteria outlined in the CEQA Guidelines also were used to determine the level of significance of identified impacts of the Proposed Action:

- CEQA Guidelines Section 15065 sets forth Mandatory Findings of Significance and directs lead agencies to find that a project may have a significant effect on the environment if it has the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish and wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of an endangered, rare, or threatened species, or eliminate important examples of the major periods of California history or prehistory.

- CEQA Guidelines Section 15382 (Significant Effect on the Environment) defines a significant effect on the environment, in part, as one that is "…a substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project including land, air, water, minerals, flora, fauna, ambient noise, and objects of historic or aesthetic significance."

5.11.1.3 Methodologies

The discussion of wetland resources in the vicinity of SBP is based on previous wetland delineations conducted on Airport property as well as on the Chevron Tank Farm property. In addition, site surveys were conducted to verify the wetland delineations that have previously occurred. During this site survey, all areas were examined to evaluate the condition of wetland, riparian, and aquatics habitats in the SBP vicinity.

Upon completion of the review of existing wetland delineations and the field surveys to verify the presence of wetland resources, consultation with the U.S. Army Corps of Engineers, the U.S. Fish and Wildlife Service, the California Department of Fish and Game, and the Regional Water Quality Control Board occurred to determine whether impacts of the Phase I and Phase II project components would be significant to wetlands and aquatics habitats (see Appendix J).

Baseline Conditions

A wetland delineation report for the Proposed Action has been prepared in accordance with the procedures outlined in the U.S. Army Corps of Engineers' Wetland Delineation Manual (Environmental Laboratory, 1987). The current delineation relies, in part, on several previous delineations performed for both SBP and the United Oil Companies of California (Unocal) (EDAW, 1999 (verified by NRCS with Corps concurrence 1999); ESA, 1999 (verified by Corps 1999)). Past delineations were verified at the time they were produced and have been updated as part of the process of finalizing the current delineation report. The current delineation will be submitted for verification to the Corps in conjunction with the wetland permitting application for the Proposed Action. In 2001, after the SWANCC ruling[1] regarding isolated wetlands, a hydrologic study of the Chevron property was carried out (McKay and Somps, 2001) to determine which wetlands delineated by EDAW might be considered isolated and thus no longer jurisdictional under the SWANCC decision. This study found that the majority of the delineated features appeared to be isolated. Finally, a State wetland delineation report, with wetland determination based on state rather than federal wetland criteria, was produced for the Chevron Tank Farm property in 2003 (JENESIS, 2003).

The wetland delineation indicates that a total of 9.554 acres (416,194 square feet) of potentially jurisdictional Waters of the U.S. occur within or adjacent to the study area[2]. Table 5.11-1 summarizes all wetlands and other Waters of the U.S. within or adjacent to the study area. The locations of all potentially jurisdictional Waters of the U.S. are shown on Figure 5.11-1. Waters of the U.S. and wetlands considered in the delineation are described briefly below.

Other Waters Within the Study Area

Acacia Creek: Acacia creek is an intermittent stream potentially subject to Corps jurisdiction as Waters of the U.S. (0.150 acre; 6540 square feet; 620 linear feet). Of this total, 0.060 acre (2540 square feet) is other waters and 0.090 acre (4000 square feet) is instream wetlands. The downstream reaches of this creek support an overstory of arroyo willow (*Salix lasiolepis*) and cottonwood (*Populus fremontii*). Bullfrog larvae (*Rana catesbiana*), mosquitofish (*Gambusia affinis*), and crayfish were noted during the 2003 wetland delineation field work. Upstream reaches of the creek within the study area are open canopied and support instream wetlands, dominated by spikerush (*Eleocharis macrostachya*), rabbitsfoot grass (*Polypogon monspeliensis*), bentgrass (*Agrostis* sp.), dock (*Rumex* sp.), and small cottonwood and willow.

1 In its January 9, 2001 decision in the court case *Solid Waste Agency of Northern Cook County v. U.S. Army Corps of Engineers,* the U.S. Supreme Court ruled that Corps jurisdiction did not extend to isolated waters that were both intrastate and non-navigable. Federal guidance has not been issued on this matter and the Corps may still regulate isolated waters on a case by case basis.

2 The study area for the wetland delineation includes all areas of potential impact within Airport property boundaries, within the southeastern portion of the Tank Farm site, and areas to the south and west of the Airport that are currently in agricultural production.

TABLE 5.11-1
JURISDICTIONAL WATERS WITHIN THE STUDY AREA

Other Waters	Linear feet	Jurisdictional Area	
		Square Feet	Acres
Intermittent drainage (East Fork of San Luis Obispo Creek)	3,300	44,891	1.031
Intermittent drainage (Acacia Creek)	620	2,540	0.060
Intermittent drainage (Orcutt Creek)	75	450	0.010
Ephemeral drainage (small tributary to the East Fork of San Luis Obispo Creek	490	726	0.017
Subtotal	**4,485**	**48,607**	**1.118**
Wetlands			
Instream wetlands			
Acacia Creek	na	4,000	0.091
East Fork of San Luis Obispo Creek	na	4,391	0.101
Freshwater marsh			
Westside detention basin	na	2,545	0.060
Northern detention basin	na	5,040	0.115
On small tributary to East Fork	na	320	0.007
In drainage ditch	na	100	0.002
Seasonal wetlands			
Area of ponding (already filled)	na	975	0.02
Eastside detention basin (already filled)	na	1,736	0.04
Chevron Tank Farm property; 28 features	na	348,480	8.00
Subtotal	**0**	**367,587**	**8.436**
Total	**4,485**	**416,194**	**9.554**

SOURCE: EDAW, 1999; ESA, 1999; ESA, 2005

Orcutt Creek: Orcutt Creek is an intermittent stream potentially subject to Corps jurisdiction as other Waters of the U.S. (0.010 acre; 450 square feet; 75 linear feet). The riparian canopy is dense along this creek reach and made up of arroyo willow, blue gum eucalyptus (*Eucalyptus globulus*), and California bay (*Umbellularia californica*). The understory is dominated by non-native species, including Himalayan blackberry (*Rubus armeniacus (=discolor)*) and Italian thistle (*Carduus pycnocephalus*).

SOURCE: ESA, 1999, 2005; JENESIS, 2005

Note: For a map showing specific jurisdictional wetlands, see Appendix 5.11

Figure 5.11-1
General Locations of Potentially Jurisdictional Waters of the U.S. in the Vicinity of SBP

East Fork of San Luis Obispo Creek: The East Fork of San Luis Obispo Creek is potentially subject to Corps jurisdiction as Waters of the U.S. (1.132 acres; 49,282 square feet; 3,300 linear feet). Of this total, 1.031 acres (44,891 square feet) are other waters and 0.101 acre (4,391 square feet) are instream wetlands. Within the study reaches, the channel ranges between three and 20 feet in width, with the average width being 15 feet. The creek channel has incised to a point at least 15 feet below its original grade and the banks are slumping and eroding in some spots. Bank erosion is exacerbated by the presence of cattle in the riparian corridor. The riparian overstory ranges from dense to open and consists of a mix of primarily native species, with a few blue gum eucalyptus and non-native pines (*Pinus* sp.) present. Native trees along the East Fork of San Luis Obispo Creek include arroyo willow, California black walnut (*Juglans hindsii*), coast live oak (*Quercus agrifolia*), and California bay. Shrubs and other species occurring along the banks of the East Branch include coyote brush (*Baccharis pilularis*) and a variety of non-native grasses, as well as fennel (*Foeniculum vulgare*), cocklebur (*Xanthium strumarium*), and mugwort (*Artemisia douglasii*), with a number of other plant species occurring along the banks and on vegetated sand or gravel bars generally located within the stream channel itself. Vegetation along the East Fork of San Luis Obispo Creek is fairly disturbed. Cattle grazing is used as a vegetation management tool within the riparian corridor and aerial photographs show that the downstream portions of the study reach were apparently cleared of vegetation within the past 20 years. There is currently a dense re-growth of willows along the downstream reach.

Unnamed Tributary to East Fork of San Luis Obispo Creek: This drainage is potentially subject to Corps jurisdiction as other Waters of the U.S. (0.017 acre; 726 square feet; 490 linear feet). The origin of this feature is unclear. It may be a small but natural tributary to the East Fork of San Luis Obispo Creek or it may be a drainage channel excavated in uplands. In the field it begins as a swale in an area currently used for agriculture. As the swale flows onto land that has not been disturbed as recently as that described above, an incised channel develops in the middle of the swale. The incised channel ranges from one to four feet in width. The incised channel is unvegetated in places and supports primarily facultative species, such as sedge, curly dock (*Rumex crispus*), and birdsfoot trefoil (*Lotus corniculatus*) in other places. A segment approximately 40 feet long supports cattail, sedge (*Cyperus eragrostis*), and spikerush. This area is discussed more fully below under wetlands.

Wetlands Within the Proposed Action Footprint

Instream wetlands

Instream wetlands occur on sand and gravel bars that are located below, or directly adjacent to, the ordinary high water mark of the East Fork of San Luis Obispo Creek and the upper reach of Acacia Creek within the study area. The area of these potentially jurisdictional wetlands is estimated to be 0.192 acre (8,391 square feet). This type of wetland is considered, if not ephemeral, then less than permanent because a fluvial environment is highly dynamic. As rainfall patterns change from year to year and as land use changes over time, patterns of sediment acquisition, transport, and deposition within a stream also change. Temporally, sand and gravel bars can be deposited in one storm and removed by the runoff from the next. On the other hand, these stream features can last for years or decades. Many of the bars found in the reaches within

the study area are primarily vegetated with annual and herbaceous perennial plant species, such as watercress (*Rorippa nasturtium-aquaticum*), bentgrass, willow herb (*Epilobium* sp.), and spikerush, as well as willow seedlings or saplings. Such vegetation implies that either these bars have not been in existence for long periods of time or that they are scoured by annual flows. A few of these bars support primarily perennial species, such as cattails and larger willows, suggesting they are longer standing or less subject to scouring flows.

Freshwater Marsh

Northern Detention Basin: This feature is potentially subject to Corps jurisdiction as a wetland (0.115 acre; 5,040 square feet). This feature is an excavated detention basin that holds water long enough throughout the year to support obligate hydrophytes on the basin floor, including water smartweed (*Polygonum amphibium*), bulrush (*Scirpus robustus*.), spikerush, and water plantain (*Alisma plantago-aquatica*). The lower slopes of the basin sides support facultative hydrophytes, including arroyo willow, curly dock, and hyssop loosestrife (*Lythrum hyssopifolium*). The water level appears to reach a depth of approximately five feet within the basin as there is a fairly abrupt change in vegetation at this point and non-native grassland species, such as wild oat, dominate with few if any hydrophytes. During field investigations (ESA, 2003) soils of the basin floor were saturated within the upper 12 inches and the depth to saturated soil was less than one inch. Soils were assumed to be hydric due to the prevalence of obligate vegetation and obvious soil saturation. Wetland area was measured at the five-foot level within the basin.

Westside Detention Basin: This feature is subject to Corps jurisdiction as a wetland (0.060 acre; 2,545 square feet). The wetland is a ditch along the western and southern perimeters of the detention basin, which itself does not exhibit wetland characteristics. The feature has an average width of six feet and supports primarily opportunistic, facultative wetland species, such as curly dock, rabbitsfoot grass, umbrella sedge, and willow herb.

Unnamed Tributary to the East Fork of San Luis Obispo Creek: This feature occurs within the unnamed tributary to the East Fork of San Luis Obispo Creek described as other Waters of the U.S. above and is potentially subject to Corps jurisdiction as a wetland (0.007 acre; 320 square feet). An 8-foot-wide area of freshwater marsh approximately 40 feet long is located within a swale and dominated by two obligate wetland species, cattail (*Typha latifolia*.) and spikerush, with umbrella sedge also present. Other than an incised channel approximately one foot in width, indicators of hydrology included drift lines and water marks on vegetation in the bottom of the swale. Soils were generally a dark gray-brown in color with a low chroma whether sampled inside the swale or in the uplands. Low chroma soils are common in clayey grassland soils in upland situations where a high organic input over time produces very dark brown to black colors.

Drainage ditch excavated through uplands: This is a small area of freshwater marsh potentially subject to Corps jurisdiction as a wetland (0.002 acre; 100 square feet). This feature occurs in a ditch excavated through uplands that itself is not considered jurisdictional in the delineation (see description below). Because there was obligate hydrophytic vegetation and a primary hydrologic indicator at this point, the assumption was made that the low chroma soil present was hydric.

Seasonal wetlands

Area of Ponding: This feature is located immediately north of the General Aviation tie-down. The jurisdictional area was 975 square feet (0.02 acre), and corresponded to the extent of baltic rush (*Juncus balticus*), the dominant wetland plant species. A shallow topographic basin was created by placement of fill for the tie-down and for the Runway 11 end of Runway 11/29. Surface runoff from the runway collected in the basin and drained toward a ditch to the west. The soils were saturated during the growing season and supported a sparse wet meadow consisting of opportunistic wetland plant species. There was a gradual transition from the wetter center of the basin to the surrounding upland grassland. Within the wetland, the soil exhibited indicators of saturation.

Eastern Stormwater Retention Basin: The stormwater retention basin north of the Runway 29 end of Runway 11/29 receives water from one culvert on its eastern boundary and replaces a small drainage that carries water from State Route 227 (see Figure 5.11-1). The basin temporarily stores the water and discharges it through an open culvert on its western boundary under Runway 29, ultimately discharging into an Unnamed Tributary to the East Fork of San Luis Obispo Creek. Water moves by sheet flow to the low end of the basin, near the outlet. On a gradient corresponding with topography and direction of flow, the vegetation in the basin consists of a relatively discrete area of wet meadow at the west end (English plantain, curly dock, umbrella sedge, annual ryegrass, prickly ox-tongue), facultative-dominated grassland (annual ryegrass), and upland non-native annual grassland that comprises about 90% of the basin area. Only the wettest portion of the basin was mapped as a jurisdictional wetland. The area is 1,736 square feet (0.04 acres).

The basin was excavated in dry land and is maintained for the purpose of stormwater drainage. Periodic maintenance includes grading and excavating the perimeter ditch every one to two years. In addition, the Airport Fire Department holds range fire training exercises in the basin annually. The basin fills across the bottom only after very large storms, after which the water is retained for about a half a day while it flows through the outlet culvert.

Seasonal Wetlands on the Chevron Tank Farm Property

EDAW, Inc. conducted a federal wetland delineation of the Chevron Tank Farm (formerly Unocal) property in 1999 that was verified by the NRCS later that year. The Corps concurred with the NRCS verification at that time. The delineation found 28 wetland features (totaling approximately 8 acres) in the southwestern portion of the Tank Farm, several of which might potentially be affected by Proposed Action components. In 2001, after the SWANCC ruling, a hydrologic study of the Chevron Tank Farm property was carried out (McKay and Somps, 2001). to determine which wetlands delineated by EDAW might be considered isolated and thus no longer jurisdictional under the SWANCC decision. This study found that 25 of the 28 features mentioned above were isolated. However, as of May 2003 (Jenesis Ecological Services, 2003), the Corps had not responded to Unocal's request for revision of their 1999 verification in light of the SWANCC decision and the hydrological analysis done of the site.

Seasonal wetlands on the Chevron Tank Farm property are variable in terms of their habitat value and the species they support. Historically, this grassland area was part of the floodplain of the East Fork of San Luis Obispo Creek. Clay soils here likely supported seasonal wetlands in low

lying areas as well. Today, most wetland features on the property occur in depressions and swales created by excavations and the building of berms in association with the oil storage facilities that once occupied this area. As mentioned, the natural substrate here consists of clay soils and these soils were significantly disturbed and compacted during the building of the Chevron Tank Farm property, increasing their natural slow permability. In addition, some of today's wetlands occur where asphalt or tar have formed an impermeable surface. Water ponds in these features during the rainy season and supports vernal pool and California fairy shrimp, as well as several rare plant species. Common vegetation found in these wetlands includes common spikerush, dwarf woolyheads (*Psilocarphus brevissimus*), iris-leaved rush (*Juncus xiphioides*), and curly dock.

Non-Jurisdictional Waters Within the Study Area

This is an approximately 2,600 linear foot drainage ditch excavated through uplands that lies only partially on Airport property but within the study area. This ditch conveys water from the Westside Detention Basin off of Airport property. The ditch runs west and south from the detention basin, through non-Airport property. It then re-emerges onto Airport property and turns west again and, at the time of the field investigation (ESA, 2003), disappears into a plowed agricultural field. In high precipitation years water from this ditch may enter the agricultural pond described above under freshwater marsh. There would appear to be a hydrologic connection between the pond and the East Fork of San Luis Obispo Creek.

The first reach of the excavated ditch was examined from the point it emerges from a culvert under Santa Fe Road to the point it leaves Airport property. It was also examined where it re-enters Airport property. Rip-rap along the bank as the ditch emerges from the culvert and evidence of an OHWM throughout suggests that flow can be high at times. In the first reach and as it re-enters Airport property the ditch was essentially unvegetated, with an average width at the ordinary high water mark ranging from 2 to 4 feet. Except for the area called out as a freshwater marsh above, vegetation observed along the banks and in the channel is dominated by opportunistic facultative and upland species, including Italian ryegrass (*Lolium multiflorum*), fennel, curly dock, wild oat (*Avena barbata*), umbrella sedge, mayweed (*Anthemis cotula*), and birdsfoot trefoil.

Since this appears to be solely a ditch excavated through uplands for drainage that does not appear to have a direct hydrologic connection to the East Fork of San Luis Obispo Creek and provides minimal habitat value, this feature was considered non-jurisdictional in the 2005 wetland delineation.

5.11.3 Impacts and Mitigation

5.11.3.1 No Action Alternative

Under the No Action Alternative, Airport facilities would be limited to those already existing and to previously approved projects that have not yet been constructed. Construction of Airport facilities under the No Action Alternative would result in the fill of 0.06 acre of seasonal wetland that occurs within the northside detention basin.

5.11.3.2 Proposed Action

Phase I (2005-2010)

Proposed Action components with the potential to adversely affect jurisdictional waters include the realignment of Santa Fe Road, the construction of a swale between the realigned Santa Fe Road and the East Fork of San Luis Obispo Creek, and the fill of existing detention basins on airport property for construction of airport facilities.

Impact 5.11-1: Impacts on Jurisdictional Waters of the U.S. and Waters of the State

Implementation of the Phase I project components would include work within the ordinary high water mark and bed and banks of a stream, and would result in the temporary and permanent removal of riparian habitat as well as the temporary and permanent fill of wetlands. Implementation of the Proposed Action also could result in degradation of riparian, aquatic, and wetland habitat through adverse affects on water quality resulting from accidental discharges or increases in sedimentation as a result of road or facilities construction. Actions within streams and rivers, seasonal wetlands, freshwater marsh, and riparian woodland and scrub associated with these habitats are regulated by a variety of agencies, including the Corps, CDFG, and the Regional Water Quality Control Board (RWQCB). Such actions will require permitting from the above agencies, including a Section 404 Nationwide Permit from the Corps, a Streambed Alteration Agreement from CDFG, and a Section 401 Water Quality Certification from the RWQCB (see Appendix J).

NEPA Analysis

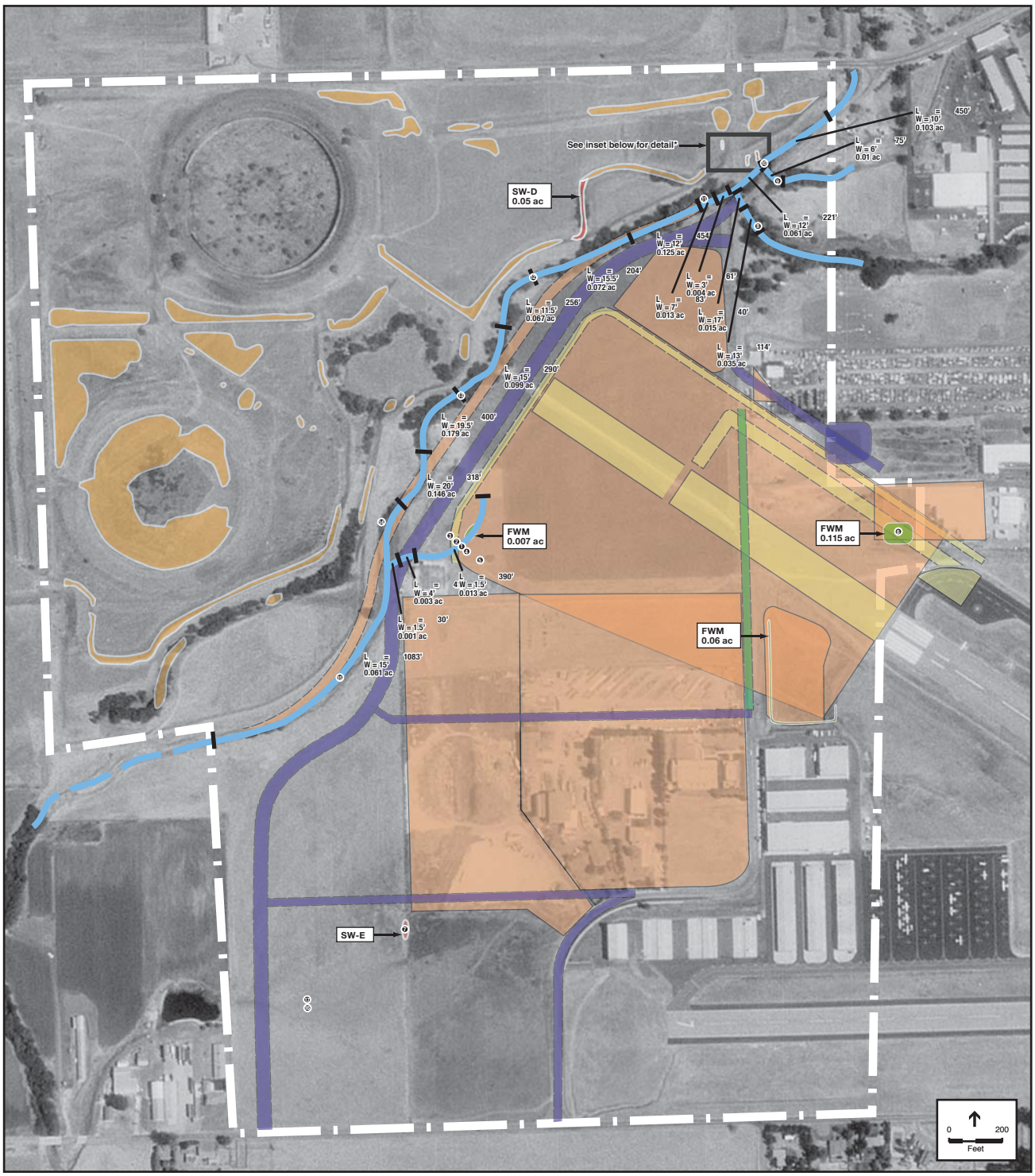
Compared to the No Action Alternative, the Proposed Action would affect 0.184 acres of jurisdictional waters in the Airport vicinity (see Figure 5.11-2). Federal and state "no-net loss policies" with respect to wetlands require that wetland losses be compensated.

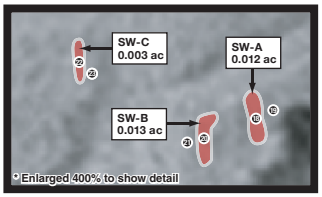
CEQA Analysis

Compared to the Baseline Conditions, the impacts of the Proposed Action on jurisdictional waters in the Airport vicinity would be the same as those described above under NEPA Analysis.

Mitigation Measure 5.11-1: Develop and Implement a Wetland Mitigation and Monitoring Plan. The County shall compensate for the loss of jurisdictional waters through the development and implementation of a Wetland Mitigation and Monitoring Plan.

It should be noted that the preferable form of mitigation recommended by the Corps is avoidance of jurisdictional waters. Compensation for loss of jurisdictional Waters of the U.S. would be based on this verified delineation. The discussion and measures below form the basis of a conceptual mitigation plan that would be reviewed and approved by the permitting agencies, as well as by agencies with authority to comment on wetland permitting actions. During the permit application process for the Proposed Action the County shall consult with the Corps, CDFG, and the RWQCB regarding the most appropriate assessment and mitigation methods to adequately address losses to wetland function that may occur as a result the Proposed Action.





WETLANDS

- Freshwater Marsh (FWM)
- Seasonal Wetland (SW)
  - EDAW 1999 / ESA assessed 2005
  - ESA 2003 / 2005
- Other Waters
- Ditch Excavated through Dry Land (not jurisdictional)
- Project Boundary

SOURCE: ESA, 2006

San Luis Obispo County Regional Airport Master Plan Update EA-EIR . 203092

Figure 5.11-2

Jurisdictional Waters Affected by Proposed Action

According to recent guidance from the Corps (U.S. Army Corps of Engineers 2002), compensatory mitigation should be based, if feasible, on functional equivalency. While the Corps has traditionally used acreage as the standard measure for determining impacts and required mitigation, the agency is now renewing its focus on wetland function and encouraging the use of functional assessment methods to measure impacts and mitigation. In any one case, the same approach must be used to determine losses and gains, in terms of amounts, types, and locations, for describing both impacts and compensatory mitigation. Therefore, a functional assessment should be made by qualified professionals using techniques generally accepted by experts in the field and fully considering the ecological functions included in the 404 (b)(1) Guidelines. The objective of such an assessment is to provide, at a minimum, a one-to-one functional replacement for losses in wetland function, including an adequate margin of safety to reflect anticipated success. In cases where functional assessment is not practicable or feasible or where definitive information on the functions of a particular wetland or stream are lacking, a minimum one-to-one acreage may be used as a reasonable surrogate for no net loss of functions. For streams where function cannot be adequately assessed, mitigation should generally replace linear feet of stream on a one-to-one basis (U.S. Army Corps of Engineers 2002).

A focus on replacing wetland functions, rather than simply calculating the acreage affected by development, will in most cases provide a more accurate and effective way to achieve the environmental performance objectives of the Corps' no net loss policy and provide greater opportunity for development of a balanced mitigation package that may contain multiple components, including both on-site and off-site components as described below. Whenever possible, wetland restoration should be implemented rather than wetland creation. Restoration has been demonstrated to be more feasible and successful than creation of wetlands. Therefore, in any wetland mitigation plan, restoration should be emphasized first, then enhancement, and lastly creation or preservation, when no other options exist (NRC, 2001).

A Wetland Mitigation and Monitoring Plan shall be developed prior to implementation of the Proposed Action and submitted to permitting agencies for their approval. The plan would include one or more of the following mitigation options:

1. Restoration, rehabilitation, or enhancement of drainages and wetlands in areas on-site that remain unaffected by grading and project development or off-site at one or more suitable locations within the project region:

   On-site restoration, rehabilitation, and enhancement. Streams, riparian, and wetland habitat in the vicinity of the Airport have all suffered varying degrees of degradation due to past land uses. Most of the streams have incised and support a large non-native plant component. On-site riparian or wetland habitat could be restored, rehabilitated, or enhanced as mitigation for losses to function, with a focus on restoring or enhancing function of degraded streams and riparian habitat.

   Off-site restoration, rehabilitation and enhancement. This can consist of either rebuilding or re-establishing former waters or rehabilitation of degraded waters. The former activity results in a net increase in acreage, while the latter does not. However, both aspects of restoration result in a net increase in wetland functions. While enhancement activities do not result in an increase in acreage, their objective is to provide a net gain in wetland or

riparian function. Under this option, restoration, rehabilitation, or enhancement activities would occur on lands that were protected in perpetuity. Such lands would contain streams and/or wetlands in need of restoration or enhancement and capable of having functions similar to or higher than those lost due to development as a result of the project.

2. Creation of on-site or off-site drainages or wetlands at a minimum of a 1:1 functional equivalency or acreage ratio (as verified by the U.S. Army Corps of Engineers):

   On-site wetland creation: new drainages or wetlands, as appropriate, could be created on-site, in buffer areas or areas otherwise protected from development that would replace lost functions, including drainage of the property, flood water detention, and support of riparian habitat and riparian dependent animals.

   Off-site wetland creation: wetlands could also be created in suitable off-site locations, including a project-specific or otherwise designated mitigation bank.

   The following guidelines shall be adhered to whether created wetlands are located on- or off-site:

   - Corps guidelines encourage the selection of a mitigation site with natural hydrology and soils suitable for supporting wetland or riparian vegetation; therefore, an analysis of local watersheds, runoff patterns that would contribute water to the wetlands, and local soils shall be conducted prior to wetland design.
   - Created wetlands or drainages shall be excavated topographic depressions designed to fill with and/or convey seasonal rainfall and local runoff.
   - Following excavation, wetlands or drainages shall be seeded or planted with appropriate native wetland plants of local genetic stock and then allowed to establish naturally.
   - Wetlands or drainages shall be created within larger upland areas left in a natural state as a buffer and a buffer zone of a minimum of 50 feet from wetland borders shall be preserved.
   - One purpose of these wetlands or drainages will be to provide natural habitat values. Therefore, landscaped ponds shall not be considered acceptable mitigation for loss of wetland habitat.
   - Maintenance shall be provided in the form of weeding and replanting as necessary.
   - Created wetlands or drainages shall be monitored for 5-years in order to ensure wetland conditions are achieved (i.e., successful establishment of native wetland plants and hydrologic regime) in accordance with the conditions of State and/or Federal permit approvals.
   - Mitigation and Monitoring reports shall be prepared annually.

3. Purchase of credits in an authorized mitigation bank acceptable to the Corps and CDFG. The purchase of mitigation bank credits and the addition of land or other contribution to an already existing mitigation bank may result in greater overall habitat and resource value than would smaller parcels of land set aside for mitigation at the margins of developed areas within the project area. A wetlands mitigation bank should provide similar vegetation and wildlife values as those habitats on the project site, as determined through consultation with the permitting agencies.

4. Contributions in support of restoration and enhancement programs located within the project region, such those operated by local non-profit organizations such as the Land Conservancy of San Luis Obispo County; or regionally based organizations, such as the Nature Conservancy; or supporting CDFG or USFWS conservation efforts in the region. For example, under certain circumstances the Corps has determined that greater resource protection and conservation benefits may be achieved by gathering funds in lieu of actual required mitigation actions and allocating such in-lieu fees to independent conservation projects that will offset wetland impacts resulting from the authorized activity (U.S. Army Corps of Engineers 2000).

All mitigation work proposed in existing wetlands or drainages on- or off-site shall be authorized by applicable permits. Off-site restoration, rehabilitation, enhancement or creation of drainages and wetlands in the project region shall occur prior to commencement of construction activities at the project site. Purchase of mitigation bank credits and contributions towards restoration or enhancement programs also shall be made prior to project implementation.

For Options 1 and 2 a detailed Mitigation and Monitoring Plan shall be developed prior to implementation of the Proposed Action and submitted to the permitting agencies for approval. The plan shall include, at a minimum:

- A description of existing site conditions, restoration and enhancement goals, and an assessment of how the mitigation will address impacts to wetland functions and values.
- Methods and specifications for site preparation and vegetation propagation and/or installation (or other enhancement methods), including a planting plan and species to be used.
- A description of irrigation methods and water sources, if necessary.
- Recommended measures for herbivore and weed control.
- Recommended measures for site protection, if necessary).
- Recordation of a conservation easement or other instrument to protect the restoration site in perpetuity.
- A five year mitigation monitoring plan including the following components:
  - Performance criteria
  - Final success criteria
  - Quantitative and qualitative monitoring methods
  - Contingency measures (including replacement plantings or other measures necessary to ensure success of the mitigation.
  - Financial assurances.
  - Submittal of annual reports to the permitting agencies as required.

With the implementation of Mitigation Measure 5.11-1, as described above, as well Mitigation Measures 5.6-1a and 5.6-1b, which are designed to protect water quality, and Mitigation Measure 5.10-1a, which focuses on protecting special status species and their aquatic and wetland habitat, the impacts resulting from implementation of the Proposed Action on jurisdictional wetlands would be less than significant.

Phase II (2011-2023)

Impact 5.11-1: Impacts on Jurisdictional Waters of the U.S. and Waters of the State

Implementation of Phase II of the Proposed Action would result in the temporary and permanent fill of wetlands within the study area. These wetlands are considered to be potentially jurisdictional wetlands by a variety of agencies, including the Corps, CDFG, and the Regional Water Quality Control Board (RWQCB). In addition, the wetlands affected by Phase II of the Proposed Action provide habitat for federally threatened fairy shrimp and rare plants. Section 5.10, Endangered and Threatened Species of Flora and Fauna, details mitigation measures to minimize impacts to listed fairy shrimp and rare plants, which would also serve to minimize impacts to their wetland habitat.

CEQA Analysis

Compared to the Baseline Conditions, the Proposed Action would affect jurisdictional waters in the Airport vicinity. With the continued implementation of Mitigation Measure 5.11-1, as described above, as well Mitigation Measures 5.6-1a and 5.6-1b, which are designed to protect water quality, and Mitigation Measure 5.10-1b, which focuses on protecting special status species and their aquatic and wetland habitat, the impacts resulting from implementation of the Proposed Action on jurisdictional wetlands would be less than significant.

Mitigation Measure 5.11-1: No additional mitigation required.

5.11.4 Summary of Impacts

Consistent with Executive Order 11990, FAA Order 1050.1E recommends that impacts to wetlands be avoided and that every practicable alternative to such impacts be considered. The order states that a project would impact wetlands if it would "involve development in a wetland area; involve dredging, filling, draining, channelizing, diking, impounding, or otherwise directly impacting a wetlands area."

To meet the standard of "no net loss" of wetlands for the Proposed Action, the County would be required to adopt the Wetlands Mitigation and Monitoring Plan detailed above and either create, restore, or enhance wetlands on- or off-site or participate in a wetlands restoration program managed by another entity. With mitigation implementation, adverse effects on wetlands resulting from implementation of the Proposed Action would be less than significant.

FAA Order 1050.1E requires that findings be made with respect to the filling of wetlands, as follows:

(a) There is no practicable alternative to such construction; and

(b) that the proposed action includes all practicable measures to minimize harm to wetlands which may result from such use.

Both findings (a) and (b) can be made for the Proposed Action through the implementation of the identified mitigation measures, which include avoidance and minimization of fill in addition to compensatory mitigation.

The FAA will request concurrence in its finding that the wetland impacts of the Proposed Action can be mitigated and that mitigation would achieve a minimum standard of "no net loss" of wetlands. Table 5.11-2 summarizes wetlands impacts as they relate to Phase I and Phase II of the Proposed Action, as mitigated.

TABLE 5.11-2
WETLANDS IMPACTS SUMMARY MATRIX

	Phase I (2005-2010)		Phase II (2011-2023)
Impact	**Compared to No Action Alternative**	**Compared to Baseline Conditions**	**Compared to Baseline Conditions**
Temporary and Permanent Impacts to Jurisdictional Waters	Impact to 0.184 acres; mitigation to result in no-net loss of wetlands	LTS	LTS

LTS = Less than significant
N/A = Not Applicable
S = Significant

SOURCE: ESA, 2006

5.12 Floodplains

5.12.1 Background and Methodology

The following section evaluates the potential impacts of the Proposed Action on floodplains, specifically with respect to increases in surface water runoff and floodplain encroachment. The discussion is based on current San Luis Obispo County drainage requirements and review of technical memorandums and reports regarding the Proposed Action and its effects on hydrology and local drainage conditions. Additional information regarding stormwater can be found in Section 5.6, Water Quality.

5.12.1.1 Regulatory Context

For a discussion of the regulatory context for floodplains, see Appendix O.

5.12.1.3 Methodologies

Hydrologic and hydraulic analyses were conducted by Mead & Hunt to evaluate project-related increases in stormwater runoff and increases in the 100-year water surface elevation in the East Fork of San Luis Obispo Creek. The results of the analyses were presented in the *San Luis Obispo County Regional Airport Runway 11 Drainage Study* (Mead & Hunt, 2006), which is included as Appendix K. The HEC-HMS hydrologic[1] model and HEC-RAS hydraulic[2] model developed for the *Waterway Management Plan* were used as the basis for the study. The *Waterway Management Plan* was prepared by the City of San Luis Obispo Department of Public Works and San Luis Obispo County Flood Control District – Zone 9 for the purpose of developing a comprehensive, watershed-based management plan for San Luis Obispo Creek and its tributaries. However, the HEC-HMS did provide adequate detail for the design of internal drainage features at the Airport. For this reason, a Stormwater Management Model (SWMM) was prepared specifically for the Airport by Mead & Hunt to design internal drainage features and calculate the detention volume needed to reduce increases in peak flow resulting from future Airport improvements.

The SWMM model was used to calculate the required detention volume needed to reduce post-development flows to pre-development conditions for the 100-year storm event. Specifics regarding the detention basin are discussed later in this section.

The significance of project-related floodplain encroachment impacts are based on the Mead & Hunt report. The existing conditions HEC-RAS hydraulic model prepared for the *Waterway Management Plan* was modified by Mead & Hunt to evaluate project impacts to the 100-year floodplain of the East Fork of San Luis Obispo Creek. Specifically, the HEC-RAS model was used to determine project-related increases in 100-year water surface elevations. The Mead &

[1] Hydrologic models such as HEC-HEMS are used to calculate the volumetric changes in peak runoff in streams, drainage infrastructure, or across the land surface under various storm events resulting from changes in land use.

[2] Hydraulic models such as HEC-RAS are used to evaluate of the physical properties of increases in stormwater (erosive velocity, increase in water surface elevation).

Hunt report evaluated three alternatives to offset project-related increases in 100-year water surface elevations: (1) increase the conveyance of the left overbank of the East Fork of San Luis Obispo Creek by providing an excavated channel; (2) divert flow into the existing old channel of the East Fork of San Luis Obispo Creek; and (3) divert flow through four 8-foot diameter reinforced concrete pipes under the runway extension. Based on permitting constraints and feasibility of implementation, the first alternative (increased conveyance in the left overbank of the East Fork of San Luis Obispo Creek by providing an excavated channel) was selected as the superior alternative.

5.12.1.2 Thresholds of Significance

5.12.1.2.1 NEPA Thresholds

FAA Order 5050.4A, *Airport Environmental Handbook,* and FAA Order 1050.1E, *Environmental Impacts: Policies and Procedures,* provide the NEPA requirements for the analysis on floodplain impacts and the information needed for environmental assessment.

According to FAA Order 5050.4A, if a proposed action occurs within the 100-year floodplain, it is considered to be a floodplain encroachment. However, impacts to the 100-year floodplain can also occur from project components located outside the floodplain. Such impacts would include impacts on natural and beneficial floodplain values, water pollution, increased runoff from impermeable surfaces, changes in hydrologic patterns, or induced secondary development.

FAA Order 1050.1E states that agencies are required to make a finding that there is no practicable alternative before taking action that would encroach on a 100-year floodplain. The Order states that the "FAA shall, prior to taking the action, design or modify the proposed action to minimize potential harm to or within the base floodplain." Federal actions shall not cause higher flood elevations or alter flood storage in a way that could adversely affect beneficial or natural floodplain values.

In accordance with FAA Order 5050.4A and FAA Order 1050.1E, a floodplain encroachment would be considered significant if one or more of the following would occur:

- A considerable probability of loss of human life;
- Likely future damage associated with the encroachment that could be substantial in cost or damage, including interruption of service on or loss of a vital transportation facility; or
- A notable adverse impact on natural and beneficial floodplain values.

5.12.1.2.2 CEQA Thresholds

According to the CEQA Guidelines, Appendix G, a storm drainage or hydrologic impact would be considered significant if the proposed project would result in any of the following:

- Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner that would result in flooding on or off the site;

- Create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems;

- Place within a 100-year flood hazard area structures that would impede or redirect flood flows; or

- Expose people or structures to a significant risk of loss, injury, or death involving flooding, including flooding as a result of failure of a levee or a dam.

5.12.2 Baseline Conditions

5.12.2.1 Regional Hydrology

The regional climate is characterized by relatively low rainfall, warm summers and mild winters. The average annual rainfall in the Airport area is approximately 22 inches (City of San Luis Obispo and San Luis Obispo County, 2003) with the majority of precipitation falling between November and April. Streamflows in the area are ephemeral with creeks flowing dry shortly after the conclusion of the winter rainfall season.

The Airport is within the San Luis Obispo Creek Watershed. San Luis Obispo Creek originates in the Santa Lucia Range within the Los Padres National Forest. The creek flows south adjacent to U.S. 101 through the City of San Luis Obispo, turns west about a mile from the coastline, and enters the ocean at Avila Beach. Tributaries to San Luis Obispo Creek include Stenner Creek, which joins the creek near the U.S. 101/Marsh Street intersection, Prefuma Creek, which joins the creek near Los Osos Valley Road, and the East Fork of San Luis Obispo Creek, which joins the creek approximately one mile downstream of the Prefumo Creek confluence. Prefumo Creek drains Laguna Lake, which provides a storage basin for a number of small tributaries.

The Airport is drained by the East Fork of San Luis Obispo Creek. The East Fork of San Luis Obispo Creek drains an area of 7,980 acres from the foothills of the Santa Lucia Range westward through the Orcutt Road and Airport areas (San Luis Obispo County, 1995). The topography of the East Fork of San Luis Obispo Creek watershed is characterized by generally flat to rolling relief. The reach of the East Fork of San Luis Obispo Creek downstream of Santa Fe Road is bounded by open space. Stormwater runoff from the Airport drains west and south to the East Fork of San Luis Obispo Creek and the Unnamed Tributary to the East Fork of San Luis Obispo Creek, respectively. Flows from these creeks merge approximately 1,000 feet south of Buckley Road. These tributaries are shown as unnamed channels on the U.S. Geological Survey quadrangle maps of the area (USGS, 1994). The combination of relatively flat topography, the confluence of several drainage ways, upstream urban development, and inadequate channel capacity has historically resulted in flooding problems along the East Fork of San Luis Obispo Creek.

5.12.2.2 On-Site Drainage

Stormwater runoff from offsite areas east of the Airport enters the Airport boundary on the northeast side of Highway 227. Runoff from the Airport area is conveyed within pipelines and open channels to four downstream outlet points. Two detention basins serve to attenuate existing flows from the Airport prior to discharge to the East Fork of San Luis Obispo Creek. Existing drainage infrastructure for the Airport site is shown in Figure 5.12-1.

5.12.2.3 Flooding

Major flooding in 1995 caused widespread damage throughout the San Luis Obispo Creek watershed. In 2003, the City and County employed hydrologic/hydraulic studies to update and verify the 1981 Flood Insurance Rate Map (FIRM) previously published by the Federal Emergency Management Agency (FEMA) for the San Luis Obispo Creek watershed. The updated flooding depth and frequency data were used to help identify channel constrictions and flood prone areas and is the basis for the 100-year flood protection management needs contained in the Waterway Management Plan (City of San Luis Obispo and San Luis Obispo County, 2003). The existing 100-year floodplain of the East Fork of San Luis Obispo Creek adjacent to the Airport is shown in Figure 5.12-1.

5.12.3 Impacts and Mitigation

5.12.3.1 No Action Alternative

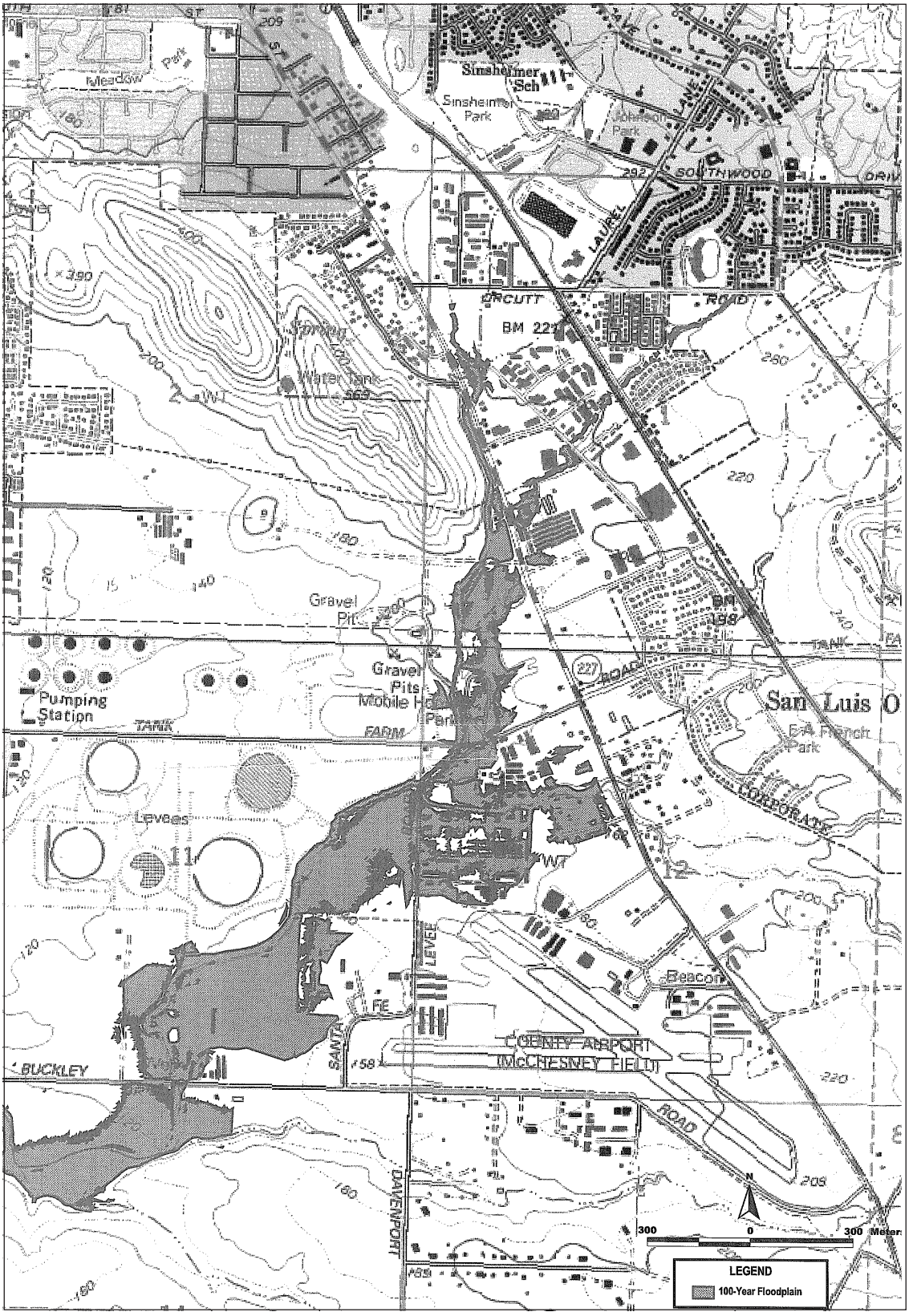
Airport facilities that would be constructed under the No Action Alternative would be limited to projects that have been approved, but not yet built. The construction of previously approved facilities will increase the amount of impervious surfaces at the Airport by approximately 17.6 acres by 2010, thus increasing stormwater runoff volumes and peak flows in the Airport vicinity. The No Action Alternative does not include measures to attenuate increases in peak discharge caused by the construction of new facilities. Previously-approved projects that would be constructed under the No Action Alternative would be located outside of the 100-year floodplain of the East Fork of San Luis Obispo Creek or the Unnamed Tributary to the East Fork of San Luis Obispo Creek and would not result in floodplain encroachment.

5.12.3.2 Proposed Action

Phase I (2005-2010)

Impact 5.12-1: Increases in Peak Runoff

Implementation of Phase I Proposed Action components would include the development of EMAS for both ends of Runway 11/29, the extension of Taxiway A, the extension of Runway 11 by 800 feet, the construction of a new perimeter service road around the new Runway 11, a new Santa Fe Road alignment, and new access roads from Santa Fe Road. Together, construction of these facilities would result in an approximate 18.9-acre increase in impervious surfaces at the



SOURCE: City of San Luis Obispo and San Luis Obispo County, 2003

San Luis Obispo County Regional Airport Master Plan Update EA-EIR . 203092

Figure 5.12-1
Existing 100-Year Floodplain in the Vicinity of SBP

Airport. The increase in impervious surface area resulting from project development would increase the peak flows[3] in downstream waterways.

The *Waterway Management Plan* defines a significant increase in peak runoff as an increase of over 5 percent at and immediately downstream of the project site for the 2-year, 10-year, 25-year, and 100-year storm recurrence intervals. The *Waterway Management Plan* requires that significant increases in peak runoff from increases in impervious surfaces be detained to ensure no significant increase in flow rates in downstream areas occur. Under the Proposed Action, increases in stormwater runoff associated with approved projects and Phase I Proposed Action project components would be mitigated by a new detention pond. The new Northwest Detention Pond would be located north of the proposed extension of the western end of Runway 11. A new storm drain line extending from the new apron and hangar areas north of the eastern end of Runway 11 would run parallel to and north of Runway 11. The new storm drain would convey stormwater flows from the new apron and hangar areas, a portion of the business park, the center of the Airport between the new runways, and from Runway 11 to the Northwest Detention Pond. The existing Westside Detention Basin, located just southwest of the existing end of Runway 11, would be filled in to accommodate proposed Airport facilities.

The remaining runoff from the eastern area (excluding the future apron and hangar areas) and offsite runoff from the area north of State Route 227 would continue to be conveyed through the Airport south towards Buckley Road. It should be noted that an offsite detention basin would be constructed on the lands north of State Route 227 to detain offsite flows as part of an unrelated residential development project on the Mortibito/Burke Property.

The Northwest Detention Pond has been designed to accommodate existing flows and increases in stormwater runoff associated with the Phase I project components. The detention pond would attenuate post-development flows to pre-project peak flows and, thus, would not result in an increase in the 100-year peak flow in the East Fork of San Luis Obispo Creek. With the construction of future Airport facilities and drainage infrastructure there would be six points of stormwater discharge from the Airport (see Figure 5.12-2). Pre- and post-development flows from the Airport for the 100-year storm events are shown in Table 5.12-1. Peak flow was calculated at the five points where internal drainage leaves the Airport, and the one point where external drainage from the northeast enters the Airport. As indicated in Table 5.12-1, there would be a net reduction in discharge into and exiting the Airport. The calculated post-development runoff reflects future conditions with the proposed drainage improvements, including both the Northwest Detention Pond as well as the offsite detention pond that would be constructed part of future development on the Mortibito/Burke Property.

NEPA Analysis

Although Phase I Proposed Action components would result in an additional 18.9-acre increase in impervious surfaces compared to the No Action Alternative, the Northwest Detention Pond that would be constructed under Phase I of the Proposed Action would mitigate increases in flows

[3] Peak discharge is a function of several variables including precipitation, topography, and land use within a given drainage area.,

TABLE 5.12-1
100-YEAR PEAK DISCHARGE UNDER PRE- AND POST-DEVELOPMENT CONDITIONS

Location	Existing Conditions		Proposed Conditions (with Drainage Improvements)	
	Inflow (cfs)	Outflow (cfs)	Inflow (cfs)	Outflow (cfs)
Northeast offsite inflow	90.4		42.6	
East Drainage		90.4		42.6
KL Drainage		89.1		89.5
Collette Drain		76.0		57.4
Northwest Detention Pond		31.6		103.3
I2 Drainage		56.3		39.3
J/M West		95.9		96.6
Total		**439.3**		**428.7**

\SOURCE: Mead & Hunt, 2006. San Luis Obispo County Regional Airport Runway 11 Extension, Final Drainage Study, February 15, 2006.

associated with previously approved projects and all Phase I project components. In fact, the new detention pond would decrease flows in the East Fork of San Luis Obispo Creek, thereby reducing existing drainage problems along the channel. Phase I project components would not contribute to notable adverse impacts on natural or beneficial floodplain values. Impacts associated with peak runoff from Phase I project components would be considered less than significant.

CEQA Analysis

Impervious surfaces that would be created under the Phase I Proposed Action would result in increased peak flows in the East Fork of San Luis Obispo Creek. The Northwest Detention Pond proposed as part of Phase I of the Proposed Action would ensure the construction of project components and associated increases in peak runoff would not exceed CEQA significance criteria. Thus, impacts associated with increases in peak runoff from Phase I project components would be considered less than significant.

Mitigation Measure 5.12-1: None required.

Impact 5.12-2: Encroachment on the 100-Year Floodplain

Floodplain encroachment is the placement of fill or the construction of structures or buildings within a 100-year floodplain. Floodplain encroachment can reduce flood storage capacity, increase floodwater elevations, and/or redirect flows, thereby potentially impacting nearby stream conditions or other properties. Several Phase I project components, including the fill to be imported for the extension of Runway 11, the Northwest Detention Pond, and the realignment of Santa Fe Road, would result in the encroachment of about four acres into the existing 100-year floodplain of the East Fork of San Luis Obispo Creek. The encroachment would have a backwater effect, increasing 100-year water surface elevations in the East Fork of San Luis Obispo Creek at

and upstream of the proposed encroachment by an estimated 2.7 inches. Per the requirements of the *Waterway Management Plan*, development proposals that include floodplain encroachments shall mitigate for any increase in floodwater elevations greater than 2.5 inches.

Three separate alternatives to mitigate the encroachment of the 100-year floodplain of the East fork and associated increases in floodwater elevations were evaluated in the *San Luis Obispo County Regional Airport Runway 11 Extension Final Drainage Study* (Mead & Hunt, 2006), which is included as Appendix K. Based on the results of the study, it was decided that the calculated increase in surface water elevations in the East Fork of San Luis Obispo Creek would be mitigated by the construction of a trapezoidal swale between the proposed Santa Fe Road alignment and the East Fork of San Luis Obispo Creek. The swale would run parallel to the East Fork of San Luis Obispo Creek between Stations 5897.261 and 4875.326[4]. The swale would compensate for the conveyance lost due to the encroachment and would drain to the floodplain associated with the East Fork of San Luis Obispo Creek west of the Airport. The swale would be approximately 3,280 feet long and have a bottom width of 50 feet and a varying depth of approximately 3 to 8 feet. The results of the hydraulic modeling indicate this measure would limit the 100-year water surface elevation increase to less than 2.5 inches.

NEPA Analysis

Phase I Proposed Action components, specifically the extension of Runway 11, the development of the Northwest Detention Pond, and the relocation of Santa Fe Road, would result in floodplain encroachment of about four acres. However, construction of a trapezoidal swale, as proposed under Phase I of the Proposed Action, would mitigate project impacts to floodplains to less-than-significant levels.

CEQA Analysis

Potential project impacts associated with floodplain encroachment associated with Phase I Proposed Action components under CEQA would be similar to those described under NEPA. Thus, potential impacts to floodplains would be mitigated by measures inherent in the project description and would be considered less than significant.

Mitigation Measure 5.12-2: None required.

Phase II (2011 - 2023)

Impact 5.12-1: Increases in Peak Runoff

Phase II Proposed Action project components that would contribute impervious surfaces to the project area include the Buckley Road site development, the extension of Runway 7 and Taxiway J by 500 feet, the extension of Taxiway M by 800 feet, and the relocation of the perimeter service road adjacent to Taxiway M. Construction of these project components would result in an approximately 29-acre increase in impervious surfaces and a corresponding increase in peak runoff. The Northwest Detention Pond that would be constructed under Phase I of the

[4] Stream stations are in meters.

Proposed Action would be sized to accommodate increases in runoff from previously approved projects, the Phase I project components and the Phase II project components. Pre- and post-development runoff from the Airport is shown in Table 5.12-1. As indicated in Table 5.12-1, the detention pond would reduce post-development flows to pre-development levels.

CEQA Analysis

Implementation of Phase II Proposed Action project components would increase stormwater runoff from the Airport. Projected increases in runoff would be attenuated by the Northwest Detention Pond that would be constructed under Phase I of the Proposed Action. Project impacts on stormwater runoff would be considered less than significant.

Mitigation Measure 5.12-1: None required.

Impact 5.12-2: Encroachment on 100-Year Floodplain

Phase II Proposed Action project components would be located outside of the 100-year floodplain of the East Fork of San Luis Obispo Creek. Thus, Phase II project components would not substantially alter local or downstream floodplains or result in adverse impacts to natural or beneficial floodplain values.

CEQA Analysis

Phase II Proposed Action components would not result in floodplain encroachment. Thus, floodplain impacts would be considered less than significant.

Mitigation Measure 5.12-2: None required.

5.12.4 Summary of Impacts

Increases in stormwater runoff that would result from implementation of Phase I and Phase II of the Proposed Action would be mitigated by the Northwest Detention Pond and thus, would be considered less than significant with measures inherent in the project description. Floodplain encroachment impacts associated with Phase I project components would be mitigated by the proposed swale. Therefore, project impacts to floodplains would be considered less than significant.

TABLE 5.12-2
FLOODPLAINS IMPACTS SUMMARY MATRIX

	Phase I (2005-2010)		Phase II (2011-2023)
Impact	**Compared to No Action Alternative**	**Compared to Baseline Conditions**	**Compared to Baseline Conditions**
Increase in Peak Runoff	No change in peak runoff because of the development of detention basins.	LTS	LTS
Encroachment of 100-Year Floodplain	Encroachment of about four acres of the existing floodplain; the proposed drainage swale would mitigate the floodplain encroachment impacts.	LTS	LTS

LTS = Less than significant
N/A = Not Applicable
S = Significant

SOURCE: ESA, 2006

5.13 Coastal Zone Management Program (NEPA Only)

In 1972, the U.S. Congress enacted the Coastal Zone Management Act to "preserve, protect, develop and where possible restore or an enhance the coast resources such as wetlands, floodplains, estuaries, beaches, dunes, barrier islands, and coral reefs as well as fish and wildlife using those habitats." The California Coastal Act of 1976 grants authority to the California Coastal Commission to regulate development and related resource depleting activities in a defined costal zone boundary. This boundary extends 1,000 feet from the mean high tide line in developed areas. SBP is more than 5 miles from the Pacific Ocean and is outside of the California Coastal Zone. Therefore, none of the various alternatives would have an impact on the coastal zone and all alternative would comply with the federal Coastal Zone Management Act of 1972.

5.14 Coastal Barriers (NEPA Only)

The Coastal Barriers Resource Act of 1982, Public Law 97-348, as amended, addresses undeveloped coastal barriers along the coasts of the Atlantic Ocean, the Gulf of Mexico. Therefore, the Proposed Action and the No Action alternative would have no impact on coastal barriers.

5.15 Wild and Scenic Rivers (NEPA Only)

The U.S. Department of the Interior, National Park Service, maintains a National Inventory of Rivers Segments that qualify for inclusion into the National Wild and Scenic Rivers System. According to the Nationwide Rivers Inventory, the two closest wild and scenic river segments to SBP are a segment of the Big Sur River, which is located over 100 miles to the northwest, and a 33-mile segment of the Sisquoc River, which is over 100 miles to the southwest in Santa Barbara County in the Los Padres National Forest. Due to the significant distance from SBP and the intervening mountains between SBP and the river segments, neither the Proposed Action nor the No Action Alternative would have any impact on any wild and scenic river. Therefore, both the Proposed Action and the No Action Alternative would be in compliance with the Wild and Scenic Rivers Act (Public Law 90-542, as amended).

5.16 Farmland

5.16.1 Background and Methodology

5.16.1.1 Regulatory Context

For a discussion of the regulatory context for farmland, see Appendix O.

5.16.1.2 Thresholds of Significance

5.16.1.2.1 NEPA Thresholds

Pursuant to FAA Order 1050.1E, Appendix A, Section 7, the FAA is required to prepare and submit Form AD-1006 "Farmland Conversion Impact Rating" and initiate formal coordination with U.S. Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) when Farmland Protection Policy Act (FPPA)-regulated farmlands will be converted to non-agricultural use. If the total score on Form AD-1006 ranges from 201 to 260, a significant impact would occur pursuant to NEPA. An exception exists for prime farmlands purchased specifically for Airport use prior to August 6, 1984. If the lands were purchased prior to 1984, consultation with NRCS is not required. In addition, pursuant to Paragraph 47(e)(16) of FAA Order 5050.4A, lands that are committed to urban development are by definition not included as "prime" farmlands.

5.16.1.2.2 CEQA Thresholds

According to CEQA, agricultural land refers to prime farmland, farmland of statewide importance or unique farmland as defined by the USDA land inventory and monitoring criteria, as modified for California. Appendix G of the CEQA Guidelines states that a proposed project would normally have a significant effect on the environment if it would:

- Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance, as shown on maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use.
- Conflict with existing zoning for agricultural use, or a Williamson Act Contract.
- Involve other changes in the existing environment which, due to their location or nature, could result in the conversion of Farmland to non-agricultural use.

5.16.1.3 Methodologies

The locations of prime farmlands and farmlands of local importance were identified and illustrated using a recent aerial photograph of SBP and its environs (see Figure 5.16-1).

SOURCE: California Department of Conservation

Figure 5.16-1
Prime Farmland and Farmland of Local Importance at SBP

Afterward, the locations of the project components were superimposed on the same aerial photograph to identify where the proposed project components would have the potential to affect designated agricultural lands. SPB County staff also were consulted (Pehl, 2005).

5.16.2 Baseline Conditions

Agricultural land uses in the SBP vicinity include vineyards, irrigated vegetable crops, non-irrigated field crops and grazing land. As shown on Figure 5.16-1, the Airport currently leases approximately 34 acres west of the end of Runway 11 for agricultural purposes. This area includes three parcels: one 22-acre parcel designated previously as prime farmland and two parcels totaling more than 11 acres that were previously designated as farmland of local importance. Row crops are grown on this Airport-owned land, which was acquired by the County in 1976.

Other Airport-owned land designated as Farmland of local importance includes approximately 38 acres acquired in 1991 and 1996 west of the end of Runway 7 and adjacent to Buckley Road, and approximately 12 acres east of the end of Runway 29. Although the 12-acre parcel near the end of Runway 29 was formerly identified as farmland of local importance, it is not in agricultural production at this time, and this area was previously disturbed for the development of the runway safety area for Runway 29 and for the relocation of Buckley Road, both of which were previously approved actions. (San Luis Obispo County, 1998).

In accordance with the California Department of Conservation, Office of Land Conservation, Prime Agricultural Lands Map for San Luis Obispo County, part of the land at the Airport was considered to be prime farmland and farmland of local importance. These soils are classified as Class I and II irrigated soils and are considered prime soils. The farmland classifications for the land currently in agricultural production as well as the vacant land on the Airport are presented in Figure 5.16-1. Prime farmland is defined as the land with the best combination of physical and chemical features for the production of agricultural crops. Farmland of local importance is defined as non-irrigated prime and statewide land, and dry land wheat, barley, oats, and hayland (Conserve California, 2005). Such farmlands are protected when they are not committed to urban development.

Although agriculture is an important part of the countywide economy and the Airport area has a historic of agricultural use, the Airport area is no longer planned for agriculture. Approved plans, such as the San Luis Obispo Airport Area Specific Plan and the San Luis Obispo County General Plan, designate the area for urban uses. Because these lands are committed to urban development, the FAA does not considered them to be “prime” farmlands pursuant to Paragraph 47(e)(16) of FAA Order 5050.4A.

5.16.3 Impacts and Mitigation

5.16.3.1 No Action Alternative

The No Action Alternative assumes that the Proposed Action would not occur at SBP, but all previously approved projects would be constructed such as: the midfield taxiway improvements,

relocated runway threshold, terminal building and parking structure, east side hangar development, fuel storage facility, and fixed base operator facility. None of the proposed projects in the No Action Alternative would affect areas designated as prime farmland or farmland of local importance.

5.16.3.2 Proposed Action

Phase I (2005 – 2010)

Phase I of the Proposed Action would include the construction of several new facilities and require grading and filling in several areas. Several of the project components associated with Phase I of the Proposed Action have the potential to affect prime farmland and farmland of local importance.

Impact 5.16.1: Conversion of Agricultural Lands to Non-agricultural Use

Approximately 33 acres of prime farmland and contiguous farmland of local significance at the end of Runway 11 would be converted to non-agricultural use with the implementation of the Phase I projects. The 12-acre at the end of Runway 29 would remain uncultivated, as it was previously disturbed as a result of the development of the runway safety area for Runway 29 and the relocation of Buckley Road. Further filling and grading would be associated with the proposed EMAS installation.

The 38-acre area currently used for agriculture located west of Runway 7 can continue to be used for agricultural purpose as practicable based on the locations of the final alignment of Santa Fe Road, which would be constructed in this area. To perform a conservative analysis of potential farmland impacts, it was assumed that about half of the 2 acres in agricultural use in the Runway 7 area would be converted to non-agricultural use during Phase I of the Proposed Action (relocation of Santa Fe Road).

NEPA Analysis

The area that would be converted to non-agricultural use is not considered to be prime farmland by the FAA. Therefore, no conversion of farmland would occur and no consultation with the NRCS is required.

CEQA Analysis

Compared to Baseline Conditions, Phase I of the Proposed Action would lead to the conversion of 24 acres of prime farmland and the conversion of approximately 23 acres of farmland of local importance. However, the prime farmland was acquired for airport use prior to 1984, which makes it exempt from federal consultation, and the farmland areas that were formerly designated as farmlands of local importance also have been designated for urban uses in the City's Airport Area Specific Plan.

None of the proposed project components would conflict with existing zoning for agricultural use or conflict with a Williamson Act Contract. Based on their location, none of the project components of the Proposed Action would indirectly cause the conversion of Farmland to non-agricultural use. While agriculturally zoned areas exist within the Airport vicinity, the Phase I project components would not lead to environmental impacts that would affect these areas or result in their conversion to non-agricultural use. In addition, none of the Phase I project components would cause significant changes to hydrology, result in discharges of fuel or other substances, or change traffic patterns to prevent access to agricultural areas.

Mitigation Measure 5.16-1: None required.

Phase II (2011 – 2023)

Impact 5.16.1: Conversion of Agricultural Lands to Non-agricultural Use

Phase II of the Proposed Action would include the extension of Runway 7 and Taxiway J by 500 feet. This runway extension would be limited to the area east of the current Santa Fe Road alignment and would not displace existing prime agricultural soils used for historical agricultural production.

CEQA Analysis

Compared to the Baseline Conditions, Phase II of the Proposed Action would not have an effect on farmlands.

None of the project components of the Proposed Action would conflict with existing zoning for agricultural use or conflict with a Williamson Act Contract. Based on their location, none of the project components of the Proposed Action would indirectly cause the conversion of Farmland to non-agricultural use. While agriculturally zoned areas exist within the Airport vicinity, the Phase II project components would not lead to environmental impacts that would affect these areas or result in their conversion to non-agricultural use. In addition, none of the Phase II project components would cause significant changes to hydrology, result in discharges of fuel or other substances, or change traffic patterns to prevent access to nearby agricultural areas.

Mitigation Measure 5.16-1: None required.

5.16.4 Summary of Impacts

Table 5.16-1 summarizes potential impacts to prime and unique farmland associated Phase I and Phase II of the Proposed Action. These impacts are determined to be less than significant.

TABLE 5.16-1
FARMLAND IMPACT SUMMARY MATRIX

Impact	Phase I (2005-2010)		Phase II (2011-2023)
	Compared to No Action Alternative	Compared to Baseline Conditions	Compared to Baseline Conditions
Conversion of agricultural lands to non-agricultural use.	The farmland that would be converted to non-agricultural use has been committed to urban development as is not considered to be prime farmland.	LTS	LTS

LTS = Less than significant
N/A = Not Applicable
S = Significant

SOURCE: ESA, 2006

5.17 Energy Supply and Natural Resources

5.17.1 Background and Methodology

Airport-related activities consume energy for transportation purposes (aircraft, ground support equipment, and motor vehicle traffic); for building space and water heating, ventilation, and lighting; and for industrial processes such as aircraft maintenance. Most of this energy derives from non-renewable energy resources.

5.17.1.1 Regulatory Context

For a discussion of the regulatory context for energy supply and natural resources, see Appendix O.

5.17.1.2 Thresholds of Significance

5.17.1.2.1 NEPA Thresholds

Determining significance under NEPA is guided by the FAA Order 1050.1E, *Environmental Impacts: Policies and Procedures* and FAA Order 5050.4A, *Airport Environmental Handbook.* In the case of energy supply and natural resources, only FAA Order 5050.4A provides guidance on significance. The *Airport Environmental Handbook* states that, for most airport actions, changes in energy or other natural resource consumption would not result in significant impacts, except where the action would cause energy demand to exceed the capacity of the utility infrastructure, or where changes in aircraft or ground vehicle use (interpreted to mean increased average ground movement or run-up times) would greatly increase fuel consumption, or where the action would use a natural resource that is in short supply. Construction of facilities under the Master Plan is expected to require common building materials, such as asphalt, concrete, and base/sub-base materials, none of which are unusual or in short supply; therefore, the issue of natural resources that are in short supply will not be discussed further.

5.17.1.2.2 CEQA Thresholds

The CEQA *Guidelines* state that a project may be deemed to have a significant effect if it would encourage activities that would result in the use of large amounts or fuel or energy or that would use fuel or energy in a wasteful manner.

5.17.1.3 Methodologies

Given the above qualitative criteria under both NEPA and CEQA, the impact discussion will focus on energy consumption and effects on the local distribution system. Fuel consumption was obtained from County records. Electricity consumption at Airport facilities was estimated by applying the CALARCH *California Building Energy Reference Tool* to facilities and building areas as identified in the Master Plan. These estimates were generally consistent with the County's records for the subset of facilities for which they are billed. Natural gas consumption, a

much smaller component, was estimated by determining the ratio of electricity to natural gas use for facilities with records and applying that ratio to the remainder of Airport facilities. Energy consumption at SBP is summarized in Table 5.17-1.

5.17.2 Baseline Conditions

Existing energy consumption at SBP is summarized in Table 5.17-1.

5.17.2.1 Transportation Energy

Surface Transportation

SBP generated about 525,000 passenger- and cargo-related motor vehicle trips in 2004. Assuming an average trip length of 20 miles, these trips accounted for about 10.5 million vehicle miles traveled (VMT). Based on the vehicle mix for San Luis Obispo, the average fuel economy is estimated to be about 24 miles per gallon (CARB, 2004). Airport-related VMT consumed just under 0.5 million gallons of gasoline, which is equivalent to about 62 billion British thermal units[1] (Btu).

TABLE 5.17-1
SUMMARY OF ANNUAL SBP ENERGY CONSUMPTION ESTIMATES

		2004	Phase I (2005-2010)		Phase II (2011-2023)
Energy Category	**Units**	**Baseline Conditions**	**No Action Alternative**	**Proposed Action**	**Proposed Action**
Gasoline	Million gallons	0.5	0.5	0.5	0.8
Jet A	Million gallons	1.4	1.5	1.3	1.4
AvGas	Million gallons	0.3	0.3	0.3	0.4
Electricity	Million kWh	2.8	5.0	6.6	7.6
Natural Gas	Thousand therms	10	17	22	25
Total	Billion Btu	300	320	300	370

SOURCE: ESA, 2006

Air Traffic

Aircraft consume two types of fuel: Jet A and Aviation Gasoline (AvGas). Jet A is used by turbine-powered aircraft (either jet or propeller) and AvGas is used by piston-powered aircraft. In 2003, about 1.4 million gallons of Jet A was distributed at SBP. This is equivalent to 189 billion

[1] A British thermal unit (Btu) is the amount of heat required to raise the temperature of one pound of water one degree Fahrenheit at sea level. Btu values reported herein are at-source values, meaning that they include the energy required for production and transmission of the energy to the point of use. Since the other units of energy can all be converted into equivalent Btu units, the Btu is used as the basis for comparing total energy impacts among the alternatives.

Btu. Over that same year, about 0.3 million gallons of AvGas was distributed at SBP, which is equivalent to 37 billion Btu.

5.17.2.2 Building Energy

Natural Gas

Natural gas is consumed at SBP facilities for space and water heating. Natural gas consumption in 2004 is estimated at 10,000 therms, which is equivalent to 1 billion Btu.

Electricity

Electricity is consumed for building ventilation and air conditioning, to power building and runway/taxiway lights, and to operate various pieces of equipment. Electricity consumption is estimated to be about 2.8 million kilowatt-hours (kWh) in 2004, which is equivalent to about 10 billion Btu.

5.17.3 Impacts and Mitigation

5.17.3.1 No Action Alternative

Under the No Action Alternative, energy would be consumed for construction of facilities such as the new terminal building. Energy use related to transportation (aircraft and ground traffic) would increase relative to Baseline Conditions in proportion to predicted changes in aircraft activity (and associated ground vehicle trips).

As shown in Table 5.17-1, energy consumption would increase under the No Action Alternative by about seven percent between 2004 and 2010. This increase is primarily the result of the larger terminal building and resulting heating and cooling requirements, as well as greater consumption of Jet A fuel due to increasing air carrier operations during this time. Under the No Action Alternative, passenger enplanements are expected to increase by about 30 percent between 2004 and 2010.

5.17.3.2 Proposed Action

Phase I (2005 – 2010)

Impact 5.17-1: Increase in Energy Consumption

As shown in Table 5.17-1, overall energy consumption in not expected to change much under Phase I of the Proposed Action. Increased hangar space and lighting requirements (e.g., for the longer runway and new taxiways) would result in greater consumption of electricity and natural gas. Under Phase I of the Proposed Action, passenger enplanements are expected to increase about 30 percent between 2004 and 2010.

NEPA Analysis

Consumption in most energy categories is not expected to change much under Phase I of the Proposed Action. However, Jet A fuel consumption would be less than that anticipated under the No Action Alternative because the increasing reliance on larger jet aircraft to transport the same number of passengers would result in fewer commercial operations. Consumption of electricity and natural gas would increase slightly. As shown in Table 5.17-1, energy consumption under the Proposed Action would be about seven percent less than the No Action Alternative.

The projection that Phase I of the Proposed Action would accommodate the same number of enplanements, with fewer operations and less consumption of Jet A fuel, is an indicator that the increased consumption of energy at SBP would not be wasteful. Therefore, in accordance with NEPA thresholds of significance, the increase in energy consumption would be a less-than-significant impact.

CEQA Analysis

Consumption in most energy categories is not expected to change much under Phase I of the Proposed Action. However, it is anticipated that Jet A fuel consumption would be less than under Baseline Conditions, because of the increasing reliance on larger jet aircraft. Even with a projected 30 percent increase in enplanements between 2004 and 2010, Phase I of the Proposed Action would result in fewer commercial aircraft operations than under Baseline Conditions. As shown in Table 5.17-1, energy consumption under the Proposed Action compared to Baseline Conditions would be comparable.

The projection that Phase I of the Proposed Action would accommodate a 30 percent increase in enplanements compared to Baseline Conditions, is an indicator that the increased consumption of energy at SBP would not be wasteful. Therefore, in accordance with the CEQA thresholds of significance, the increase in energy consumption would be a less-than-significant impact.

Mitigation Measure 5.17-1: None required.

Impact 5.17-2: Increase in Demand on the Local Distribution Infrastructure

Under Phase I of the Proposed Action, electricity consumption would increase compared to the No Action Alternative and Baseline Conditions, to serve additional hangar space and lighting requirements (e.g., for the longer runway and new taxiways). However, the increase would be relatively modest and the local power supplier would be able to accommodate this increase using existing electric distribution infrastructure. Changes in natural gas consumption and effects on natural gas distribution infrastructure would be even less.

NEPA Analysis

In accordance with NEPA thresholds of significance, the effects to local distribution infrastructure would be less than significant.

CEQA Analysis

In accordance with CEQA thresholds of significance, the effects to local distribution infrastructure would be less than significant.

Mitigation Measure 5.17-2: None required.

Impact 5.17-3: Use of Mineral Resources

Phase I of the Proposed Action would not render any mineral resources (sand, gravel, oil, natural gas, etc) unrecoverable. The project components of Phase I would not result in covering any sand or gravel source or cap any oil wells or natural gas wells.

NEPA Analysis

In accordance with NEPA thresholds of significance, no impacts to mineral resources would occur.

CEQA Analysis

In accordance with CEQA thresholds of significance, no impacts to mineral resources would occur.

Mitigation Measure 5.17-3: None required.

Phase II (2011 – 2023)

Impact 5.17-1: Increase in Energy Consumption

As shown in Table 5.17-1, energy consumption would increase under Phase II of the Proposed Action to serve additional hangar space and lighting requirements (e.g., for the longer runway and new taxiways). Energy consumption would also temporarily increase during construction activity. Most of the increase in energy consumption would be related to increased ground traffic and would increase in proportion to predicted changes in enplanements (and associated ground vehicle trips). Under Phase II of the Proposed Action, passenger enplanements are expected to increase about 84 percent between 2004 and 2023.

CEQA Analysis

Consumption in most energy categories would increase under Phase II of the Proposed Action, compared to Baseline Conditions. However, the greatest increase would be in gasoline for ground transportation. Jet A fuel consumption would be comparable to Baseline Conditions, because of the increasing reliance on larger jet aircraft. Even with a projected 84 percent increase in enplanements between 2004 and 2023, Phase II of the Proposed Action would result in only a slight increase in commercial operations.

The increase in energy consumption would be about 23 percent compared to Baseline Conditions. The projection that energy consumption would grow at a slower rate than enplanements is an

indicator that the increased consumption of energy at SBP would not be wasteful. Therefore, in accordance with CEQA thresholds of significance, the increase in energy consumption would be a less-than-significant impact.

Mitigation Measure 5.17-1: None required.

Impact 5.17-2: Increase in Demand on the Local Distribution Infrastructure

CEQA Analysis

Under Phase II of the Proposed Action, electricity consumption would increase compared to Baseline Conditions, to serve additional hangar space and lighting requirements (e.g., for the longer runway and new taxiways). However, the increase would be relatively modest and would not be expected to strain existing electric distribution infrastructure. Changes in natural gas consumption and effects on natural gas distribution infrastructure would be even less. Therefore, in accordance with CEQA thresholds of significance, the effects to local distribution infrastructure would be less than significant.

Mitigation Measure 5.17-2: None required.

Impact 5.17-3: Use of Mineral Resources

Phase II of the Proposed Action would not render any mineral resources (sand, gravel, oil, natural gas, etc) unrecoverable. The project components of Phase II would not result in covering any sand or gravel source or cap any oil wells or natural gas wells.

CEQA Analysis

In accordance with CEQA thresholds of significance, no impacts to mineral resources would occur.

Mitigation Measure 5.17-3: None required.

5.17.4 Summary of Impacts

Table 5.17-2 summarizes energy impacts as they relate to Phase I and Phase II of the Proposed Action.

TABLE 5.17-2
ENERGY IMPACTS SUMMARY MATRIX

Impact	Phase I (2005-2010)		Phase II (2011-2023)
	Compared to No Action Alternative	Compared to Baseline Conditions	Compared to Baseline Conditions
Increase in Energy Consumption	Energy consumed would be 7% less	LTS	LTS
Increase in Demand on Distribution	Existing energy infrastructure would accommodate increase in energy demand	LTS	LTS
Use of Mineral Resources	No use of mineral resources would occur	LTS	LTS

LTS = Less than significant
N/A = Not Applicable
S = Significant

SOURCE: ESA, 2006

For Phase I of the Proposed Action, about seven percent more energy would be consumed compared to the No Action Alternative and about the same amount compared to Baseline Conditions. Phase II of the Proposed Action would consume about 23 percent more energy compared to Baseline Conditions. However, energy consumption would increase at a slower rate than passenger enplanements. The effect of the increased use of energy would be less than significant. Also, the increased demand at SBP for electricity and natural gas would not have a significant effect on the local distribution infrastructure and no mitigation is warranted.

5.18 Light Emissions

5.18.1 Background and Methodology

5.18.1.1 Regulatory Context

For a discussion of the regulatory context for light emissions, see Appendix O.

5.18.1.2 Thresholds of Significance

5.18.1.2.1 NEPA Thresholds

FAA safety requirements prohibit any major source of glare from being present at the Airport. Nighttime lighting facilities include those to facilitate evening operations and security. Lighting includes runway approach lighting, runway and taxiway lighting, outside building and garage lighting, and high-level lighting in vehicle, aircraft parking, and air cargo parking areas.

5.18.1.2.2 CEQA Thresholds

According to the CEQA *Guidelines*, potentially significant aesthetic effects include substantial or potentially substantial adverse changes in objects having aesthetic significance, and substantial or potentially substantial, demonstrable negative aesthetic effects. Guidance in identifying adverse and potentially significant aesthetic effects is provided in Appendix G and Appendix I of the CEQA *Guidelines*. According to the criteria presented in these appendices, a significant impact could be associated with the following:

- Obstruction of a scenic vista or view open to the public;
- Creation of an aesthetically offensive site open to public view;
- Degradation of an object having historic or aesthetic significance;
- Division or disruption of the physical arrangement of an established community;
- Production of new light and glare; and
- Conflict with adopted environmental plans and goals of the community in which the project would be located.

5.18.1.3 Methodologies

The project elements associated with the Proposed Action were evaluated and compared to the No Action Alternative and the Baseline Condition to identify the potential to create new sources of glare and lighting pursuant to NEPA criteria and their potential to cause substantial aesthetic effects pursuant to CEQA criteria.

5.18.2 Baseline Conditions

5.18.2.1 Light Emissions

During the day, moving vehicles and aircraft on Airport runways, aprons, and roadways generate glare from reflective surfaces (e.g., bumpers, windows, painted surfaces). Traffic arriving at and departing from the Airport, the operation of aircraft, and support equipment require the use of nighttime lighting. Other sources of nighttime illumination include building lights, parking lot and security lighting, navigation equipment, and exterior light fixtures. Much of the existing nighttime lighting is concentrated around the passenger terminal facilities and parking areas.

5.18.2.2 Aesthetics

The San Luis Obispo area is located within the Southern California Coast Range. The most distinctive feature is a chain of 14 remnant volcanoes that extend northwesterly from the City of San Luis Obispo to the City of Morro Bay, terminating in the prominent visual landmark of Morro Rock. Other visually prominent members of this volcano chain include Hollister Peak, Bishop Peak, and Islay Hill (San Luis Obispo County, April 2005).

The Airport is located on a relatively flat alluvial plain with few visually significant topographic, vegetative, or constructed features nearby. The visual character of the built-up portions Airport is typical of urban environments: a mixture of low-rise commercial, agricultural use, and industrial buildings surrounded by surface parking lots. The existing development has low visual quality, lacking in distinctive design features and landscaping. However, the openness of the area and its surroundings allow for a dramatic and highly scenic visual setting that includes sweeping views of the rural and agricultural open space and distinctive peaks and ridgelines. The principal vantage points for viewing the Airport are from elevated fixed viewpoints that are typically panoramic, as well as from moving vehicles on State Route 227, Santa Fe Road, and Buckley Road.

5.18.3 Impacts and Mitigation

5.18.3.1 No Action Alternative

Light Emissions

New lighting would be associated with reconfigured midfield taxiways and the relocated threshold for Runway 25. These facilities would not be placed in areas that have the potential to conflict with aviation operations or have the potential to be nearer to sensitive receptors, such as residents (San Luis Obispo County, 2005a).

The proposed construction of the terminal and parking facilities would result in a slight intensification of land use on Airport property (San Luis Obispo County, 2005b). Additional lighting would be associated with the new building, signs, and parking areas, and to provide security for employees and visitors using these facilities. The County will submit plans for all

proposed lighting to FAA's 7460 review process to ensure that the potential lighting and glare from these facilities would not affect aircraft navigation. To prevent potential glare from affecting travelers, motorists, and aviation, the County would employ downward-facing lights, light shields, and amber lumens.

In addition to the proposed facilities associated with the No Action alternative, increases in air and ground traffic would be anticipated to accommodate the increases in air cargo and passenger levels. The increased air and ground traffic would generate additional glare during the day and add to existing illumination levels during the evening and night. However, these increases would be gradual and would not create an annoyance for residents in the Airport vicinity.

Aesthetics

Additional structures, such as the new terminal building and parking garage were evaluated previously under a 2005 SEIR and were determined not to create visual impacts. Although the size and scale of the new terminal building and parking structure would increase slightly compared to previous development, they would be consistent with surrounding Airport uses and would not result in the obstruction of any public scenic views, disrupt existing landscape character, or create visually intrusive structures or offensive sites for public view. These facilities would affect views for motorists traveling on SR 227, but this change in visual character would be compatible with existing development at SBP and other development in the vicinity and was determined to be less than significant (San Luis Obispo County 2005b).

5.18.3.2 Proposed Action

Phase I (2005 – 2010)

Impact 5.18-1: Light Emissions

Some of the project components in the Proposed Action would result in changes to airfield lighting facilities. These changes include additional lighting to accommodate new facilities, such as EMAS installation, Runway 11 extension, taxiway hold apron, perimeter service road, navigational aids, roadway realignment, and improvements to the runway lighting system. However, these changes would not lead to additional lighting or glare; runway taxiway lighting would be installed on the airfield and lighted signs would be installed to identify taxiway locations.

NEPA Analysis

Compared to the No Action Alternative, the Proposed Action would result in an additional 800 feet of runway-related airfield lighting at the Airport. This lighting is for safety purposes and would not be considered a significant impact.

CEQA Analysis

Compared to the Baseline Conditions, the Proposed Action would increase the airfield lighting at the Airport. This additional lighting would be only at the Airport and would not result in any

additional light and glare to off-Airport properties. Therefore, this is considered to be a less-than-significant impact.

Mitigation Measure 5.18-1: None required.

Impact 5.18-2: Aesthetics

None of the project components under the Proposed Action would create new structures or facilities that would have the potential to cause visual impacts. Proposed airfield improvements would be constructed at ground level and would not intrude on a scenic vista or create an aesthetically offensive site to public view. In most cases, existing facilities (airfield pavement, drainage improvements, etc.) would merely modify or expand existing facilities.

Similarly, aviation support facilities, such as the perimeter service road, detention basin and drainage improvements, and relocated roadways would not interrupt scenic views. As previously described in Section 5.8, Cultural Resources, no historic or aesthetically significant structures are present at SPB; therefore, impacts to these resources are not anticipated. Since all project components included in the Proposed Action are located on airport property, or involve property adjacent to the Airport, they do not have the potential to divide or disrupt an established community.

NEPA Analysis

Compared to the No Action Alternative, the Proposed Action would not result in any new structures or facilities that would have an aesthetic impact. Therefore, this is considered to be a less-than-significant impact.

CEQA Analysis

Compared to the Baseline Conditions, the facilities that would be constructed under the Proposed Action would not result in the obstruction of a scenic vista or view open to the public or create an aesthetically offensive site open to public view. In addition, the project components under the Proposed Action would not degrade an object having historic or aesthetic significance and would not divide or disrupt the physical arrangement of an established community. Therefore, this is considered to be a less-than-significant impact.

Mitigation Measure 5.18-2: None required.

Phase II (2011 – 2023)

Impact 5.18-1: Light Emissions

The project components under the Proposed Action include the construction of additional taxiway relocations and extensions, a new access road, additional hangars, extending the airfield lighting system (ALS) to accommodate these facilities, and the siting and relocation of the airport traffic control tower. Although proposed designs have not been developed for these facilities, all

facilities would have to be reviewed according to FAA's 7460 process to ensure that the proposed facilities would not produce glare to affect aircraft operations. In addition, further environmental study would be undertaken as designs are developed. In addition, most lights would be installed near to the ground for navigational purposes and would not provide for additional light sources to affect areas off Airport. Although the ATCT has the potential to create a new source of lighting, this would be evaluated as part of the siting study conducted prior to relocation.

CEQA Analysis

Compared to the Baseline Conditions, the facilities that would be constructed under the Proposed Action would not result in the obstruction of a scenic vista or view open to the public nor create an aesthetically offensive site open to public view. In addition, the project components under the Proposed Action would not degrade an object having historic or aesthetic significance, would not divide or disrupt the physical arrangement of an established community, and would not result in light and glare to off-Airport properties. Therefore, this is considered to be a less-than-significant impact.

Mitigation Measure 5.18-1: None required.

Impact 5.18-2: Aesthetics

The project components under the Proposed Action would be visible from roadways in the Airport vicinity. These project components, which would include hangars and a new ATCT, would be in keeping with the visual character of the Airport. Although these facilities would affect views for motorists traveling on SR 227, this change in visual character would be compatible with existing development at SBP and other development in the Airport vicinity.

CEQA Analysis

Compared to the Baseline Conditions, the facilities that would be constructed under the Proposed Action would not result in the obstruction of a scenic vista or view open to the public nor create an aesthetically offensive site open to public view. In addition, the project components under the Proposed Action would not degrade an object having historic or aesthetic significance, would not divide or disrupt the physical arrangement of an established community, and would not result in light and glare to off-Airport properties. Therefore, this is considered to be a less-than-significant impact.

Mitigation Measure 5.18-2: None required.

5.18.4 Summary of Impacts

Table 5.18-1 summarizes light emissions impacts related to implementation of Phase I and Phase II of the Proposed Action. As previously discussed, none of the proposed improvements has the potential to create lighting, glare, to create annoyance for nearby residents or airport visitors. All proposed project designs will be undergo review through FAA's 7460 process, which addresses

lighting and glare to ensure that new facilities do not create lighting and glare to affect air navigation.

San Luis Obispo is located in an area with dramatic landscapes and vistas. However, none of the proposed airfield improvements would interrupt existing views for site visitors or residents in the airport vicinity, and all proposed aviation support structures would be constructed at a size and scale that would be compatible with existing facilities.

No impacts associated with lighting, glare or visual impacts are anticipated, and no mitigation measures are required.

TABLE 5.18-1
LIGHT EMISSIONS IMPACTS SUMMARY MATRIX

	Phase I (2005-2010)		Phase II (2011-2023)
Impact	**Compared to No Action Alternative**	**Compared to Baseline Conditions**	**Compared to Baseline Conditions**
Light Emissions	Additional 800 feet of runway-related airfield lighting for safety purposes.	LTS	LTS
Aesthetics	No new structures or facilities that would have an aesthetic impact.	LTS	LTS

LTS = Less than significant
N/A = Not Applicable
S = Significant

SOURCE: ESA, 2006

5.19 Hazardous Materials and Solid Waste

5.19.1 Background and Methodology

The operation of the Airport involves the storage, use, and transport of hazardous materials and the generation of hazardous wastes. Hazardous materials are transported to and from the Airport by ground vehicles as well as by passenger and all-cargo aircraft. The largest quantity of hazardous material used at the Airport is aviation fuel, which is consumed in operations and therefore generates little hazardous waste. Smaller quantities of other hazardous materials are stored and used on the Airport. The most common hazardous waste generated at the Airport is used motor oil associated with the maintenance facilities at the Airport. Increases in aviation activity would increase the amount of hazardous materials stored, used, and transported at the Airport and the amount of hazardous wastes generated by Airport activities. The discussion in this section is based on Airport and County records, regulatory agency files, and current and recent reference materials. Airport operations also generate solid waste typical of commercial and industrial activities.

5.19.1.1 Regulatory Context

For a discussion of the regulatory context for hazardous materials and solid waste, see Appendix O.

5.19.1.2 Thresholds of Significance

5.19.1.2.1 NEPA Thresholds

Hazardous Materials

As discussed under Section 5.19.1.1, FAA Order 1050.1E Appendix A, Section 10, lays out the federal framework for regulating hazardous waste. The project sponsor much determine whether hazardous wastes will be generated, disturbed, transported or treated, stored or disposed of and provide a means of compliance as applicable. The FAA or the project sponsor should also comply with the pollution prevention and control requirements of EO 12088.

Hazardous materials and hazardous wastes, if mishandled, can pose risks to the public through exposure. Potential health and safety impacts can stem from interactions of construction workers, the public and/or future residents/workers with hazardous materials and wastes encountered or generated during project construction activities or project operations.

In qualitative terms, an increase in the level of risk would correlate with an increase in the nature and relative quantities of hazardous materials and wastes handled and/or stored at the Airport, in turn a function of operations involving hazardous material use. Potential increases in operations under the proposed project correlate most closely with expected increases in passenger levels, aircraft operations, and fuel storage. Aircraft fuel use (transport and handling) would increase as a result of the proposed new fuel storage facility. A third type of operation is the occasional air cargo

shipment of hazardous cargo. Given the lack of all-cargo flights, this would be expected to increase in rough proportion to the projected increase in all-cargo tonnage under the proposed project.

Three general sources of potential hazardous materials and waste impacts (risks) could occur: impacts could result from 1) increases in the transport, handling, and storage of hazardous materials on the Airport, notably aircraft fuel but also including materials used in equipment maintenance as well as cargo throughput; 2) from increases in generation and disposal of hazardous wastes from Airport and tenant operations; and 3) from exposure of additional workers and members of the public to hazardous materials during any disturbance of contaminated areas associated with construction.

For purposes of this document, hazardous materials impacts would be considered significant if the proposed action involves the use, production, or disposal of materials in a manner that poses a hazard to people, animal or plant populations in the area affected. A significant impact would also occur if the action were to present an undue potential risk for health or safety-related accidents.

Solid Waste

Determining significance under NEPA is guided by FAA Order 1050.1E, *Environmental Impacts: Policies and Procedures.* FAA Order 1050.1E states that "terminal area development may involve circumstances which require consideration of solid waste impacts. Preliminary review should indicate if the projected quantity or type of solid waste generation or method of collection or disposal will be appreciably different than would the case without the action." Any impacts causing an "appreciably different" level of service to meet a proposed action's needs would be considered a significant impact.

5.19.1.2.2 CEQA Thresholds

Hazardous Materials

A hazardous materials impact would be considered significant if it would result in any of the following, which are adapted from CEQA Guidelines, Appendix G:

- create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials;
- create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment;
- emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school;
- be located on a site, which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, create a significant hazard to the public or the environment; or
- impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.

Solid Waste

The CEQA *Guidelines* state that a project may be deemed to have a significant effect if it were to be served by a landfill without sufficient permitted capacity to accommodate the project's solid waste disposal needs.

5.19.1.3 Methodologies

Hazardous Materials

The potential significance of implementing the proposed action regarding the use or existence of hazardous materials was largely conducted using professional judgment. By evaluating the proposed actions and the regulatory environment that controls the use, storage, and handling of hazardous materials and waste, potential impacts were qualitatively developed.

Solid Waste

Given the qualitative criteria under both NEPA and CEQA, the impact discussion will focus on solid waste generated at SBP and the resulting contribution toward the capacity at Cold Canyon Landfill.

5.19.2 Baseline Conditions

5.19.2.1 Hazardous Materials

Hazardous materials present at the Airport include the following: aviation fuels; motor fuels; de-icing materials; substances used to operate or maintain aircraft, ground vehicles, equipment, and buildings; and various hazardous materials transported to and from the Airport via ground vehicles and aircraft. Their storage, use, and transport at SBP are controlled by a framework of federal, State, and local regulations and programs. Hazardous Materials Business Plans (HMBPs) prepared in compliance with the California Health and Safety Code, Division 20, Chapter 6.95, Article 1, include inventories of hazardous materials handled, specific locations of hazardous materials storage, emergency response plans, and provisions for employee training. HMBPs are on file at the San Luis Obispo County for the following Airport and its tenant facilities.

Aviation Fuel Storage and Use

Fuel storage at SBP occurs at two locations each with a pair of above ground tanks. The tanks store AvGas, jet fuel, and one additional tank is used for auto fuel for the car rental agencies. Previously, storage of commercial aircraft fuels and other fuels used at the Airport were provided at various above and underground storage tanks located throughout the Airport and also in fuel trucks on the tarmac. Most fuel was stored in underground storage tanks (USTs) at the hangar. Actual fueling of aircraft takes place on the ramps or at the loading gates.

Fuel spills can occur during fueling operations, generally due to human error. Over the years, the Airport has periodically reported small (less than 5 gallons) fuel spills. Most fuel spills are small and are contained and cleaned up with absorbent material in accordance with specific procedures set forth in the FAR regulations that are provided to all ramp employees. Spills greater than

5 gallons must be reported to Airport Operations, who then report the incident to the Airport fire station. Immediate actions are taken, including such measures as shutting off fueling equipment and controlling the spread of the fuel. These measures of protection against possible fuel spills are reinforced through implementation of the Airport's Stormwater Pollution Prevention Plan (SWPPP), discussed in Section 5.6, Water Quality. The County does not permit fuel spills to be flushed or washed away, or to enter the storm drain system. Records indicate that 6 spills over 5 gallons have occurred over the years but none since 1992 (SWPPP, 2005).

Leaks from underground storage tanks at the Airport have occurred and are discussed below under Environmental Contamination and Remediation. Leaks are less likely to occur from newer double-walled tanks equipped with a vapor and liquid spill detection systems than from older single-walled tanks. When leaks are detected, the resultant contamination is monitored under the supervision of the San Luis Obispo County Health Department or the Central Coast Regional Water Quality Control Board (RWQCB), as discussed below.

Other Hazardous Materials and Waste

Hazardous Materials Use

In addition to aviation fuels, smaller quantities of other hazardous materials are stored and used at the Airport for various purposes. Several tenants at the Airport, for example, have storage tanks and facilities for storage of associated solvents, cleaners, and motor oil. Rental car maintenance does not occur at the Airport. These Airport tenants store and use various hazardous materials such as solvents, degreasers, cleaners, de-icers, paints, paint thinners, diesel, welding gases, and pesticides in support of aircraft, ground vehicle, and buildings and grounds maintenance and operations. Airport records document spills of materials such as oil, diesel, hydraulic fluid, and transmission fluid. In addition, some of the older buildings at the Airport may contain asbestos. Hazardous materials users at SBP are inspected annually by the County Health Department.

Hazardous Waste

Airport operations generate hazardous waste; however, the vast majority of the hazardous material stored and used at the Airport is fuel. Hazardous wastes generated at SBP are accumulated at on-site, paved hazardous waste storage areas. Hazardous wastes accumulated in the storage areas include the following: waste oils, solvents, and thinners; used antifreeze, oil filters, and batteries; contaminated absorbent; fluorescent light tubes; and mercury-containing lamps. Wastes are held in storage bins that provide secondary containment. Hazardous waste generators are inspected by the San Luis Obispo County Health Department. The hazardous wastes generated at the Airport are transported by certified waste disposal contractors to a variety of regional transfer facilities and out-of-state disposal facilities.

Environmental Contamination and Remediation

The Airport has experienced hazardous material releases that have resulted in localized contamination, as documented in agency files (ESA, 1997). State, federal, and local lists indicated that a release of jet fuel to soils occurred at Wings West Airlines (835 Airport Drive) in 1987.

Contaminated soils were excavated and aerated on site. This case was closed in August of 1987. This was the only listed contamination incident at SBP (ESA, 1997).

Adjacent contamination incidents are the result of historic releases of emulsified oil at bulk storage tanks along Tank Farm Road, approximately one half mile north of the Airport. Additionally, Airport records indicate that clean-up of soil at the Collet Easement, which was contaminated with jet fuel 20-25 years ago, was conducted as a part of storm water compliance. The California Department of Forestry burn pit, where the Airport Fire Department practices training fires was also a site of contaminated soil removal. All of these incidents are either cleaned up, under remediation, or being monitored. Site investigations and remediation activities are under the jurisdiction of the County Health Department and RWQCB.

According to the most recent Storm Water Pollution Prevention Permit, there have been no reported spills or incidents at the Airport since 1992. The Airport is not listed on the State of California Hazardous Waste and Substances List (Cortese List) or on the State Water Resources Control Board (SWRCB) Leaking Underground Storage Tanks list (LUST) (SWRCB, 2005 and DTSC, 2005).

5.19.2.2 Solid Waste

The San Luis Obispo County Integrated Waste Management Plan (1995) states that Cold Canyon Landfill is permitted to dispose of a maximum of 750 tons of solid waste per day and 270,000 tons per year. Cold Canyon currently accepts about 800 tons of solid waste per day; about 530 tons of waste is buried in the landfill, while the remaining 270 tons is recycled (e.g., green waste, curbside recyclables, and construction and demolition debris). As of January 1, 2005, less than one million tons of capacity remains. The projected life of Cold Canyon Landfill, without an expansion, is 8 to 8 ½ years (Whittlesey, 2005). These projections are based on San Luis Obispo County General Plan population growth rate estimates, as well as continued successful implementation of policies and goals of the County's Source Reduction and Recycling Element (SRRE), Household Hazardous Waste Element, Non-Disposal Facility Element, and Siting Element.

San Luis Obispo County Recycles, the parent company of South County Sanitary Services, collects solid waste generated by the south county area, which includes the Airport vicinity. Branches of this service include Tri-City Disposal, Nipomo Garbage, and San Luis Garbage Company. Solid waste generated from SBP is collected by San Luis Garbage Company and disposed of at the Cold Canyon Landfill, which is owned and operated by South County Sanitary Services. Cold Canyon is located at 2268 Carpenter Canyon Road in San Luis Obispo County, about five miles south of the Airport. The Cold Canyon Landfill serves the cities of San Luis Obispo, Morro Bay, Grover Beach, Pismo Beach and Arroyo Grande, and the unincorporated areas of the north coast and south county, in which the Airport is located.

The existing (non-recyclable) solid waste generation at SBP is about 0.60 tons per day, or about 219 tons per year (Huber, 2005). This amount of solid waste is equivalent to 1.34 pounds of solid

waste for each passenger at SBP. This represents about 0.11 percent of the (non-recyclable) amount of solid waste annually accepted by the Cold Canyon Landfill.

5.19.3 Impacts and Mitigation

5.19.3.1 No Action Alternative

Hazardous Materials

Under the No Action Alternative the most substantial change in the presence of hazardous materials at the Airport would be in fuel storage. The new bulk fuel storage facility would result in a decreased exposure potential to the public and the environment from hazardous materials. The new facility would be designed according to updated materials and design criteria to mitigate the potential inadvertent release to storm water, leaks to soil or groundwater, fire, or secondary containment failure. This decrease in upset potential is due primarily to modernization, but also to consolidation of fuels at a single location. The hazardous materials impact of the new fuel storage facility would be considered less than significant since a catastrophic event resulting in a substantial spill or fire from the new storage facility or pipeline would be highly unlikely in view of the stringent regulations that govern the facility design, installation, operation, and incident response.

These stringent regulations also apply to the transportation and handling of other hazardous materials and wastes at the airport. Existing regulations and health and safety programs are designed to protect the public and workers from exposure to hazardous materials. The methods of handling and disposing of these hazardous wastes would continue to be done according to regulations and by licensed hazardous waste contractors as is the current practice at the Airport. The overall impact of hazardous materials under the No Action Alternative would be less than significant.

Solid Waste

With the forecasted increase in the number of passengers at SBP, there would be a corresponding increase in solid waste generation at SBP. Assuming no increased benefit from recycling, in 2010 SBP is estimated to generate about 284 tons of non-recyclable solid waste per year, or about 0.78 tons of solid waste per day under the No Action Alternative. At these levels, the Airport would continue to contribute a small fraction of one percent of the total annual amount of solid waste disposed at Cold Canyon Landfill.

5.19.3.2 Proposed Action

Phase I (2005 – 2010)

Impact 5.19-1: Fuel Storage Facility and Spills

Under the Proposed Action fuels would be stored in the newly constructed above-ground fuel storage facility as it would be under the No Action Alternative. This fuel storage facility would

provide sufficient storage capacity to accommodate the projected increases in aviation activity and enable a more efficient and secure fuel delivery system by creating reserve storage capacity.

NEPA Analysis

Compared to the No Action Alternative, no additional hazardous materials impacts related to fuel storage would occur under the Proposed Action. Therefore, this impact is considered to be less than significant.

CEQA Analysis

Compared to Baseline Conditions, the fuel storage and spills impact of the Proposed Action would result in a decreased exposure potential to the public. The new centralized location and updated materials design criteria would make a catastrophic event resulting in a substantial spill or fire from the new storage facility or pipeline highly unlikely in view of the stringent regulations that govern the facility design, installation, operation, and incident response. Therefore the impacts associated with the fuel storage and spill impacts would be a less-than-significant impact.

Mitigation Measure 5.19-1: None required.

Impact 5.19-2: Hazardous Materials Transportation

The transportation of hazardous materials would be the same under Phase I of the Proposed Action as that of the No Action Alternative. Fuels are delivered to various Airport facilities in tanker trucks. The California Highway Patrol annually subjects tanker trucks to tests that involve pressure testing, structural integrity testing, inspection of pressure relief devices, and inspection of accident damage protection (particularly against vehicle impact and rollover incidents).

Hazardous materials (non-fuel) would be delivered to various Airport facilities in small containers or drums, in compliance with appropriate regulations.

Hazardous wastes would be shipped to various locations throughout the country, but most local trips would go to a transfer facility.

NEPA Analysis

Compared to the No Action Alternative, no additional hazardous materials impacts related to hazardous materials transportation would occur under Phase I of the Proposed Action. Therefore, this impact is considered to be less than significant.

CEQA Analysis

Compared to Baseline Conditions, the transportation of hazardous materials under Phase I of the Proposed Action would be handled the same. Health and safety programs would minimize the hazards associated with transporting materials, and emergency response teams would be available to respond to accidents that occur on public roads. In light of a relatively low increase in the probability of a serious transportation accident, Phase I of the Proposed Action would not be

expected to substantially exacerbate a potential health or safety hazard or create an undue risk for health-related accidents. Therefore, the impact of increasing the transportation of fuels to the Airport would be less than significant.

Under Phase I of the Proposed Action, hazardous materials transport would likely increase as a result of increased Airport operations. The result may require more hazardous materials trips, but the typical load would probably carry the same types of materials and the same amounts of materials as at present.

Because suppliers and transporters are required to follow DOT regulations for packaging and handling, only a fraction of the potential accidents that could involve vehicles carrying hazardous materials would be expected to actually affect the integrity of the containers of hazardous materials on board. The regulatory requirements for hazardous materials containers are such that containers would be unlikely to release their contents in the event of an accident. Requirements for waste containers are more stringent than requirements for incoming non-waste materials containers.

Wastes would also be transported by licensed hazardous chemical waste haulers. Licensed hazardous waste drivers receive training in how to respond if a release were to occur. Caltrans also operates hazardous materials emergency response teams across the State. These measures would serve to minimize the consequences of an accident involving hazardous materials in transport. (Most accidents would simply be nuisances.) Because the consequences of accidents involving hazardous materials and waste would probably not be severe, the risk to the public posed by the transport of hazardous materials to and from the Airport would be expected to be relatively low, and therefore the impact would be less than significant.

Mitigation Measure 5.19-2: None required.

Impact 5.19-3: Storage and Use of Other Hazardous Materials

Phase I of the Proposed Action may result in an increase in the use of hazardous materials used for maintenance as a result of increased aircraft operations.

NEPA Analysis

Compared to the No Action Alternative, no additional hazardous materials impacts related to non-fuel hazardous materials would occur under Phase I of the Proposed Action. Therefore, this impact is considered to be less than significant.

CEQA Analysis

Compared to Baseline Conditions, the impact of non-fuel storage and use under Phase I of the Proposed Action would be similar. The hazardous material stream associated with non-fueling activities at the Airport is relatively small. Hazardous materials use and storage would continue to be stored in varying amounts, but generally would be limited to containers of 55 gallons or less. There would likely be an increase in the rate of use of hazardous materials used for maintenance as a result of increased aircraft operations. The majority of hazardous materials used in these

activities are typical of equipment maintenance: diesel fuel, paints, solvents, oils and other automotive fluids, ethylene glycol (deicer), and others.

With continuing enforcement of existing regulations that govern hazardous materials use and storage, the projected increase associated with increases in aviation would not necessarily pose significant health and safety hazards to Airport workers or the general public. Existing regulations and health and safety programs serve to control the storage and handling of hazardous materials at the Airport and the potential effects in the event of accidents. Airport tenants are inspected periodically by designated County authorities. Therefore, this impact is considered less than significant.

Mitigation Measure 5.19-3: None required.

Impact 5.19-4: Hazardous Waste Generation

This impact is related to the growth in passenger and air cargo activity. The increases in passenger and air cargo activity would be the same under Phase I of the Proposed Action as that described for the No Action Alternative. The Airport currently handles hazardous waste in a manner that does not pose a substantial health or safety hazard. An increase in the quantity of waste generated under Phase I of the Project Action would not alter this condition.

NEPA Analysis

Compared to the No Action Alternative, no additional hazardous materials impacts related to hazardous waste generation would occur under Phase I of the Proposed Action. Therefore, this impact is considered to be less than significant.

CEQA Analysis

Compared to Baseline Conditions, the hazardous waste generation impact of Phase I of the Proposed Action would result in a less-than-significant impact. The growth in passenger and air cargo activity may result in an indirect increase in the amount of hazardous wastes generated at the Airport. These hazardous wastes, such as waste motor oil, paint thinner, solvents, crushed oil filters, contaminated absorbent anti-freeze wastes, and auto batteries, are primarily associated with the maintenance operations at the Airport. They would continue to be handled and disposed of by licensed hazardous waste contractors. The methods of handling and disposing of these hazardous wastes would be the same as the methods currently used at the Airport: that is, hazardous wastes are collected in approved storage bins with secondary containment, and are transported off site for recycling, treatment such as incineration, and/or disposal by contractors. These activities are subject to regulations, enforced locally by the San Luis Obispo County Hazardous Materials Compliance Division.

The Airport currently handles hazardous waste in a manner that does not pose a substantial health or safety hazard. An increase in the quantity of waste generated under Phase I of the Proposed Action would not alter this condition and therefore would not be significant.

Mitigation Measure 5.19-4: None required.

Impact 5.19-5: Exposure of Workers to Hazardous Materials

Construction activity associated with Phase I of the Proposed Action could potentially expose workers to hazardous materials. Project components include sites known to be contaminated (existing and former fuel storage facilities). Other project components involving earthmoving activities could encounter hazardous materials at sites not yet identified. Asbestos could be encountered and may require disposal during structural renovation of buildings.

NEPA Analysis

Compared to the No Action Alternative, Phase I of the Proposed Action could result in a hazardous materials impact to workers if they were to be unknowingly exposed to unidentified hazardous materials during construction or demolition activities. As discussed under the No Action Alternative, adherence to state and local requirements regarding the safe handling of hazardous and potentially hazardous materials would reduce the potential impact to workers to less than significant levels. However, construction activities could disturb unknown areas that have been impacted by contamination from past unreported releases. With implementation of Mitigation Measure 5.19-5, this impact would be reduced to less than significant.

CEQA Analysis

Compared to Baseline Conditions, there would be a similar potential impact to workers as described above in the NEPA analysis. Implementation of Mitigation measure 5.19-5 would reduce this potential impact to less than significant.

Mitigation for Impact 5.19-5: The County shall conduct "due diligence," or screening investigations, of each potentially contaminated site where demolition, renovation, or earthmoving activities are to be conducted. These investigations should determine the potential for workers to encounter hazardous materials contamination, identify the likely presence of contamination, and determine the need to notify regulatory agencies and take further precautions as prescribed by law, regulation, and local procedures to protect the health and safety of site workers.

Impact 5.19-6: Increase in Solid Waste

With the forecasted increase in the number of passengers at SBP, there would be a corresponding increase in solid waste generation at SBP. Assuming no increased benefit from recycling, in 2010 SBP is estimated to generate about 284 tons of non-recyclable solid waste per year, or about 0.78 tons of solid waste per day. In addition to the solid waste generated by passengers at SBP, construction and demolition activities would occur under Phase I of the Proposed Action that would also generate solid waste requiring disposal.

NEPA Analysis

The amount of solid waste generated under the Proposed Action would be similar to the amount generated under the No Action Alternative, since the number of passengers at SBP would be the same. Although the Proposed Action would also generate construction- and/or demolition-related

solid waste, this impact would be temporary and would not appreciably increase the solid waste generated at SBP on an annual basis. Furthermore, as of January 1, 2005, all but the very smallest projects at SBP will be required to recycle 50 percent of the project's construction and demolition waste stream. The increase in solid waste would be a less-than-significant impact.

CEQA Analysis

In 2010 SBP is estimated to generate about 284 tons of non-recyclable solid waste per year, or about 0.78 tons of solid waste per day under the Proposed Action. Compared to Baseline Conditions, this is an increase of 65 tons per year, or an increase of about 0.18 tons per day. At this rate, the Airport would continue to contribute well under one percent of the total annual amount of solid waste disposed at Cold Canyon Landfill. The increase in solid waste would be a less-than-significant impact.

Mitigation Measure 5.19-6: None required.

Phase II (2011 – 2023)

Impact 5.19-1: Fuel Storage Facility and Spills

Under the Proposed Action fuels would be stored in the previously constructed above-ground fuel storage facility. This fuel storage facility would provide sufficient storage capacity to accommodate the projected increases in aviation activity and enable a more efficient and secure fuel delivery system by creating reserve storage capacity.

CEQA Analysis

Compared to Baseline Conditions, the fuel storage and spills impact of the Proposed Action would result in a decreased exposure potential to the public. The new centralized location and updated materials design criteria would make a catastrophic event resulting in a substantial spill or fire from the new storage facility or pipeline highly unlikely in view of the stringent regulations that govern the facility design, installation, operation, and incident response. Therefore the impacts associated with the fuel storage and spill impacts would be a less-than-significant impact.

Mitigation Measure 5.19-1: None required.

Impact 5.19-2: Hazardous Materials Transportation

The transportation of hazardous materials would not change under Phase II. Fuels are delivered to various Airport facilities in tanker trucks. The California Highway Patrol annually subjects tanker trucks to tests that involve pressure testing, structural integrity testing, inspection of pressure relief devices, and inspection of accident damage protection (particularly against vehicle impact and rollover incidents).

Hazardous materials (non-fuel) would be delivered to various Airport facilities in small containers or drums, in compliance with appropriate regulations.

Hazardous wastes would be shipped to various locations throughout the country, but most local trips would go to a transfer facility.

CEQA Analysis

Compared to Baseline Conditions, the transportation of hazardous materials under Phase II of the Proposed Action would be handled the same. Health and safety programs would minimize the hazards associated with transporting materials, and emergency response teams would be available to respond to accidents that occur on public roads. In light of a relatively low increase in the probability of a serious transportation accident, the Proposed Action would not be expected to substantially exacerbate a potential health or safety hazard or create an undue risk for health-related accidents. Therefore, the impact of increasing the transportation of fuels to the Airport would be less than significant.

Under the Proposed Action, hazardous materials transport would likely increase as a result of increased Airport operations. The result may require more hazardous materials trips, but the typical load would probably carry the same types and amounts of materials.

Because suppliers and transporters are required to follow DOT regulations for packaging and handling, only a fraction of the potential accidents that could involve vehicles carrying hazardous materials would be expected to actually affect the integrity of the containers of hazardous materials on board. The regulatory requirements for hazardous materials containers are such that containers would be unlikely to release their contents in the event of an accident. Requirements for waste containers are more stringent than requirements for incoming non-waste materials containers.

Wastes would also be transported by licensed hazardous chemical waste haulers. Licensed hazardous waste drivers receive training in how to respond if a release were to occur. Caltrans also operates hazardous materials emergency response teams across the State. These measures would serve to minimize the consequences of an accident involving hazardous materials in transport. (Most accidents would simply be nuisances.) Because the consequences of accidents involving hazardous materials and waste would probably not be severe, the risk to the public posed by the transport of hazardous materials to and from the Airport would be expected to be relatively low, and therefore the impact would be less than significant.

Mitigation Measure 5.19-2: None required.

Impact 5.19-3: Storage and Use of Other Hazardous Materials

Phase II of the Proposed Action may result in an increase in hazardous materials used for maintenance as a result of increased aircraft operations.

CEQA Analysis

Compared to Baseline Conditions, the impact of non-fuel storage and use under Phase II of the Proposed Action would be similar. The hazardous material stream associated with non-fueling activities at the Airport is relatively small. Hazardous materials use and storage would continue to

be stored in varying amounts, but generally would be limited to containers of 55 gallons or less. There would likely be an increase in the rate of use of hazardous materials used for maintenance as a result of increased aircraft operations. The majority of hazardous materials used in these activities are typical of equipment maintenance: diesel fuel, paints, solvents, oils and other automotive fluids, ethylene glycol (deicer), and others.

With continuing enforcement of existing regulations that govern hazardous materials use and storage, the projected increase associated with increases in aviation activity would not necessarily pose significant health and safety hazards to Airport workers or the general public. Existing regulations and health and safety programs serve to control the storage and handling of hazardous materials at the Airport and the potential effects in the event of accidents. Airport tenants are inspected periodically by designated County authorities. Therefore, this impact is considered less than significant.

Mitigation Measure 5.19-3: None required.

Impact 5.19-4: Hazardous Waste Generation

This impact is related to the growth in passenger and air cargo activity. The Airport currently handles hazardous waste in a manner that does not pose a substantial health or safety hazard. An increase in the quantity of waste generated under Phase II of the Project Action would not alter this condition.

CEQA Analysis

Compared to Baseline Conditions, the hazardous waste generation impact of Phase II of the Proposed Action would result in a less-than-significant impact. The growth in passenger and air cargo activity may result in an indirect increase in the amount of hazardous wastes generated at the Airport. These hazardous wastes, such as waste motor oil, paint thinner, solvents, crushed oil filters, contaminated absorbent anti-freeze wastes, and auto batteries, are primarily associated with the maintenance operations at the Airport. They would continue to be handled and disposed of by licensed hazardous waste contractors. The methods of handling and disposing of these hazardous wastes would be the same as the methods currently used at the Airport: that is, hazardous wastes are collected in approved storage bins with secondary containment, and are transported off site for recycling, treatment such as incineration, and/or disposal by contractors. These activities are subject to regulations, enforced locally by the San Luis Obispo County Hazardous Materials Compliance Division.

The Airport currently handles hazardous waste in a manner that does not pose a substantial health or safety hazard. An increase in the quantity of waste generated under the Proposed Action would not alter this condition and therefore would not be significant.

Mitigation Measure 5.19-4: None required.

Impact 5.19-5: Exposure of Workers to Hazardous Materials

Construction activity associated with Phase II of the Proposed Action could potentially expose workers to hazardous materials. Project components include sites known to be contaminated (existing and former fuel storage facilities). Other project components involving earthmoving activities could encounter hazardous materials at sites not yet identified. Asbestos could be encountered and require disposal during structural renovation of buildings.

CEQA Analysis

Compared to Baseline Conditions, Phase II of the Proposed Action could result in a hazardous materials impact to workers if they were to be unknowingly exposed to unidentified hazardous materials during construction or demolition activities. Adherence to state and local requirements regarding the safe handling of hazardous and potentially hazardous materials would reduce the potential impact to workers to less than significant levels. However, construction activities could disturb unknown areas that have been impacted by contamination from past unreported releases. With implementation of Mitigation Measure 5.19-5, this impact would be reduced to less than significant.

Mitigation for Impact 5.19-5: The County shall conduct "due diligence," or screening investigations, of each potentially contaminated site where demolition, renovation, or earthmoving activities are to be conducted. These investigations should determine the potential for workers to encounter hazardous materials contamination, identify the likely presence of contamination, and determine the need to notify regulatory agencies and take further precautions as prescribed by law, regulation, and local procedures to protect the health and safety of site workers.

Impact 5.19-6: Increase in Solid Waste

With the forecasted increase in the number of passengers at SBP by the year 2023, there would be a corresponding increase in the generation of solid waste at SBP. Assuming no increased benefit from recycling, in 2023 SBP is estimated to generate about 403 tons of solid waste per year, or about 1.10 tons of solid waste per day. In addition to the solid waste generated by passengers at SBP, construction and demolition activities would occur under Phase II of the Proposed Action that would also generate solid waste requiring disposal.

CEQA Analysis

Compared to Baseline Conditions, SBP is projected to generate an additional 184 tons per year of solid waste, or about 0.50 tons per day more under the Proposed Action. At this rate, the Airport would contribute well under one percent of the total annual amount of solid waste disposed at Cold Canyon Landfill. Current projections anticipate the need for additional landfill capacity well before 2023. However, there is sufficient capacity in the north county at the Chicago Grade Landfill and the County anticipates that the Cold Canyon Landfill owners will apply for an expansion permit there (Whittlesey, 2005). Given the relatively minimal solid waste contribution from SBP and the anticipated landfill expansion elsewhere in the County, this would be a less-than-significant impact.

Mitigation Measure 5.19-6: None required.

5.19.4 Summary of Impacts

No significant hazardous materials impacts would occur as a result of the No Action Alternative or the Proposed Action provided that both alternatives include strict adherence to the governing regulations and implementation of the mitigation measure identified above. Solid waste impacts would be less than significant and no mitigation is warranted.

TABLE 5.19-1
HAZARDOUS MATERIALS AND SOLID WASTE IMPACTS SUMMARY MATRIX

	Phase I (2005-2010)		Phase II (2011-2023)
Impact	**Compared to No Action Alternative**	**Compared to Baseline Conditions**	**Compared to Baseline Conditions**
Fuel Storage Facility and Spills	No impacts related to fuel storage	LTS	LTS
Hazardous Materials Transportation	No impacts related to hazardous materials transportation	LTS	LTS
Storage and Use of Other Hazardous Materials	No impacts related to non-fuel hazardous materials	LTS	LTS
Hazardous Waste Generation	No impacts related to hazardous waste generation	LTS	LTS
Exposure of Workers to Hazardous Materials	With mitigation, no impacts to workers being exposed to hazardous materials	LTS	LTS
Increase in Solid Waste	No change in the amount of solid waste generated	LTS	LTS

LTS = Less than significant
N/A = Not Applicable
S = Significant

SOURCE: ESA, 2006

5.20 Construction

5.20.1 Background and Methodology

This section describes the potential effects of construction that would occur under the Proposed Action. These would include temporary effects such as increased noise disturbance, traffic, air emissions, water quality degradation and soil erosion, habitat loss and other impacts to biological resources, and exposure of workers to hazardous materials. These temporary impacts are intermittent in nature and can be minimized through the use of environmental controls. For further information on the topics summarized in this section, refer to Section 5.1, Noise; Section 5.3-1, Transportation; Section 5.5, Air Quality; Section 5.6, Water Quality; Section 5.10, Threatened and Endangered Species of Flora and Fauna; Section 5.11, Wetlands; and Section 5.19, Hazardous Materials and Solid Waste.

5.20.1.1 Regulatory Context

For a discussion of the regulatory context for construction impacts, see Appendix O.

5.20.1.2 Thresholds of Significance

Construction activities were evaluated in terms of their potential to result in adverse impacts related to noise levels, traffic, air emissions, water quality degradation and soil erosion, habitat loss and other impacts to biological resources, and exposure of workers to hazardous materials

5.20.1.2.1 NEPA Thresholds

Determining significance under NEPA is guided by FAA Order 1050.1E, *Environmental Impacts: Policies and Procedures* and FAA Order 5050.4A, *Airport Environmental Handbook.* Order 1050.1E provides primary guidance and notes that construction activities are addressed by regulations at all levels of government and that these impacts are generally discussed under descriptions within the appropriate impact category. At a minimum, project specifications should incorporate the provisions of Advisory Circular 150/5370-10 Standards for Specifying Construction of Airports, (Change 10), Item P-156 Temporary Air and Water Pollution, Soil Erosion, and Siltation Control.

The *Airport Environmental Handbook* also notes that, "In general, impacts during construction are of lesser magnitude than long term impacts of the proposed action. Many of the specific types of impacts which could occur will be covered in the descriptions of other impact categories. To the extent not discussed elsewhere, this item shall include a general description of the type and nature of the construction and measures to be taken to minimize potential adverse effects."

5.20.1.2.2 CEQA Thresholds

The CEQA *Guidelines* do not establish a specific significance threshold for construction impacts. Instead significance is derived from Section 15382 which defines "significant effect on the

environment" as "substantial, or potentially substantial, adverse changes in any of the physical conditions within the area affected by the project…" However, given the temporary nature of construction, these short-term impacts, typically, are not considered significant.

5.20.1.3 Methodologies

Based on the NEPA and CEQA significance criteria, the impact discussion will focus on summarizing the construction impacts, and corresponding mitigation, as discussed in other sections of this document.

5.20.2 Baseline Conditions

5.20.2.1 Noise Disturbance

As described in Section 5.1, Noise, the principal source of noise in the Airport vicinity is aircraft noise. Depending upon the location of a specific receiver, aircraft noise may be mostly caused by aircraft in flight (i.e., landings, takeoffs, pattern operations) or aircraft moving about the airfield. However, like most urban or suburban areas, surface traffic noise is pervasive in the Airport vicinity. The third principal noise source is railroad noise.

5.20.2.2 Transportation

As described in Section 5.3-1, Transportation, primary local access to SBP (with direct access to the terminal building and parking lots) is provided by Aero Drive from SR 227, with secondary access from Airport Drive (off SR 227) and Santa Fe Road (off Tank Farm Road). The predominant mode of travel to/from the Airport is private vehicle, rental car, taxi, and RIDE-ON (direct door-to-door airport transportation).

5.20.2.3 Air Emissions

Air emissions at SBP are described in Section 5.5, Air Quality. Table 5.5-3 shows the estimated average annual (2004) emissions for six emissions parameters.

5.20.2.4 Water Quality and Soil Erosion

As described in Section 5.6, Water Quality, stormwater runoff from impervious surfaces at the Airport is conveyed via underground pipes to the East Fork of San Luis Obispo Creek and the Unnamed Tributary of the East Fork of San Luis Obispo Creek. The quality of the stormwater discharged is the product of existing industrial activities and water quality BMPs at the Airport. Nonpoint source pollutants in stormwater can be a significant source of pollution to downstream watercourses.

5.20.2.5 Biological Resources

As described in Section 5.10, Threatened and Endangered Species of Flora and Fauna and Section 5.11, Wetlands, the Airport and vicinity support the following plant communities and

wildlife habitats: landscaped urban lands, grassland and ruderal habitats, wetlands, and aquatic and riparian habitat associated with the East Fork of San Luis Obispo Creek and its tributary. These areas provide varying degrees of habitat for special status species with riparian habitat the most diverse, ecologically productive, and important for these species.

The Airport and vicinity provides potential habitat for the following special status species: Morro shoulderband snail, vernal pool fairy shrimp, California linderiella, tidewater goby, steelhead, California red-legged frog, southwestern pond turtle, American peregrine falcon, Cooper's hawk, sharp-shinned hawk, golden eagle, northern harrier, white-tailed kite, burrowing owl, ferruginous hawk, merlin, tricolored blackbird, California horned lark, saltmarsh common yellowthroat, loggerhead shrike, and special-status plants.

5.20.2.6 Worker Exposure to Hazardous Materials

As described in Section 5.19, Hazardous Materials and Solid Waste, hazardous material present at the Airport include aviation fuels; motor fuels; de-icing materials; substances used to operate or maintain aircraft, ground vehicles, equipment, and buildings; and various hazardous materials transported to and from the Airport via ground vehicles and aircraft. Their storage, use, and transport at SBP are controlled by a framework of federal, state, and local regulations and programs.

5.20.3 Impacts and Mitigation

5.20.3.1 No Action Alternative

The No Action Alternative would involve construction of a new passenger terminal, parking structure, access road, and ancillary airfield and support facilities. This construction would result in short-term increases in noise disturbance, traffic, air emissions, water quality degradation and soil erosion, habitat loss and other impacts to biological resources, and exposure of workers to hazardous materials.

5.20.3.2 Proposed Action

Phase I (2005 – 2010)

Phase I of the Proposed Action would include construction of additional airside and landside facilities, including extending Runway 11, 800 feet to the west, as described in Section 1.1.1, Phase I – 2010 (Proposed Near-Term Projects).

Impact 5.20-1: Increased Noise Disturbance

As described in Section 5.1, Noise, construction of Phase I of the Proposed Action, would result in noise disturbance. The closest noise-sensitive uses from any proposed construction location would be residential areas to the south and west of the Airport. Construction equipment generates single-event noise levels in the range of 70 to 90 dBA at a 50-foot distance from the source and

has the potential for disturbing surrounding land uses when equipment is operating in their vicinity. However, noise levels from a point source, such as construction equipment, decrease at the rate of approximately 6 dB with each doubling of distance from the source. Therefore, at a distance of 1,000 feet, the resulting construction equipment noise levels would range from 44 dBA to 64 dBA. In some cases, intervening buildings or topography would further reduce noise at noise-sensitive locations. These are exterior noise levels, and interior noise levels typically would be 15 to 25 dB lower.

NEPA Analysis

The construction noise that would occur under Phase I of the Proposed Action would result in noise levels that are comparable to common noise events that occur in any residential neighborhood. Therefore, this is a less-than-significant impact.

CEQA Analysis

The construction noise that would occur under Phase I of the Proposed Action would result in noise levels that are comparable to common noise events that occur in any residential neighborhood. Therefore, this is a less-than-significant impact.

Mitigation Measure 5.20-1: None required.

Impact 5.20-2: Increased Traffic

As described in Section 5.3-1, Transportation, construction of Phase-I airfield facilities, aviation support facilities, and non-aviation projects would generate off-site traffic, which would include the initial delivery of construction vehicles and equipment to the project site, the daily arrival and departure of construction workers, and the delivery of materials and removal of construction debris throughout the construction period. The impact of construction-related traffic would be a temporary and intermittent lessening of the capacities of project area streets because of the slower movements and larger turning radii of construction trucks compared to passenger vehicles.

Through-traffic on Santa Fe Road would be temporarily blocked between the start of construction of the Runway 11 extension and the completion of the realigned Santa Fe Road. However, access to land uses on Santa Fe Road would be maintained from Buckley Road (for uses south of the road closure) and from Tank Farm Road (for uses north of the road closure).

NEPA Analysis

A temporary and intermittent lessening of the capacities of project area streets, and a short-term closure of Santa Fe Road to through traffic, would occur under Phase I of the Proposed Action compared to conditions under the No Action Alternative. The effect would be a temporary inconvenience to individual motorists who currently drive from Buckley Road to land uses north of the road closure, or from Tank Farm Road to land uses south of the road closure. Given that the daily traffic volume on Santa Fe Road is about 1,400 and 2,100 vehicles near Buckley Road

and Tank Farm Road, respectively, the impact of Phase I construction on traffic circulation patterns would be less than significant.

CEQA Analysis

A temporary and intermittent lessening of the capacities of project area streets, and a short-term closure of Santa Fe Road to through traffic, would occur under Phase I of the Proposed Action compared to Baseline Conditions. These short-term effects would not have a significant effect on traffic circulation patterns and congestion, and as described above, would be a temporary inconvenience to individual motorists who currently drive from Buckley Road to land uses north of the road closure, or from Tank Farm Road to land uses south of the road closure. Therefore, the traffic impact resulting from construction of Phase I of the Proposed Action would be less than significant.

Mitigation Measure 5.20-2: None required.

Impact 5.20-3: Increased Air Emissions

As described in Section 5.5, Air Quality, Phase I construction would generate substantial amounts of dust (including PM10 and PM2.5) primarily from "fugitive" sources (i.e., emissions released through means other than through a stack or tailpipe) due to earthmoving and grading and lesser amounts of other criteria air pollutants from operation of heavy equipment construction machinery (primarily diesel operated) and construction worker automobile trips (primarily gasoline operated).

Construction-related dust emissions would vary from day to day, depending on the level and type of activity, silt content of the soil, and the weather. In the absence of mitigation, construction activities may result in significant quantities of dust and, as a result, local visibility and PM10 concentrations may be adverse on a temporary and intermittent basis. In addition, the fugitive dust generated by construction would include not only PM10, but also larger particles, which would settle out within several hundred feet of the site and could result in nuisance-type impacts. Combustion emissions from heavy equipment and construction worker commute trips also would vary from day to day, and would contribute incrementally to regional ozone concentrations over the construction period. Construction emissions have been quantified (see Table 5.5-4) according to the methodologies specified in the CEQA *Air Quality Handbook*. The emission estimates are conservative in estimating the amount of time the equipment would be used and the area of disturbance.

NEPA Analysis

As explained in Section 5.5.1.2, no air quality analysis is needed under NEPA to assess National Ambient Air Quality Standards. Therefore, for NEPA purposes, construction-related emissions would be less than significant.

CEQA Analysis

Based on the conservative estimate of construction emissions, the NO_x emissions are potentially significant. The sources that contribute most of the NO_x emissions would be the loaders and off-highway trucks. Construction-related dust emission impact also is considered to be potentially significant, but may be effectively mitigated by implementing Mitigation Measure 5.20-3. Any DPM emissions are temporary and intermittent, but would also be substantially improved by the increased reduction of sulfur in diesel fuel. Their long-term effects on chronic health impacts would be small compared to the standard of 70-year exposure to these toxic substances. Therefore, the impacts of diesel construction emissions would be less than significant.

Mitigation Measure 5.20-3: Mitigate as described in Section 5.5, Air Quality to address construction-related dust emissions.

Impact 5.20-4: Water Quality Degradation and Soil Erosion

As described in Section 5.6, Water Quality, increased soil erosion during Phase I construction has the potential to result in the sedimentation and siltation of receiving waters and lead to a reduction in the water quality and habitat benefits of the East Fork of San Luis Obispo Creek and the Unnamed Tributary to the East Fork of San Luis Obispo Creek. Excessive deposition of sediments in stream channels can degrade aquatic habitat. Additionally, eroded sediment can accumulate in downstream drainage facilities, interfering with flow and aggravating downstream flooding conditions.

NEPA Analysis

Implementation of Phase I of the Proposed Action would result in extensive grading and earthwork on 32.5 acres, or 13.7 more acres than what would occur under the No Action Alternative. Although the project components would be constructed in compliance with NPDES General Construction Activities permit requirements, grading and earthwork activities associated with the extension of Runway 11, the relocation of Santa Fe Road, and the excavation of the new swale could have potentially significant impacts on water quality in the East Fork of San Luis Obispo Creek. The impacts would be reduced to less than significant through the mitigation identified in Section 5.6, Water Quality and by incorporating into project specifications the provisions of Advisory Circular 150/5370-10 Standards for Specifying Construction of Airports, (change 10), Item P-156 Temporary Air and Water Pollution, Soil Erosion, and Siltation Control.

CEQA Analysis

Compared to Baseline Conditions, Phase I the Proposed Action would result in grading and earthwork on approximately 32.5 acres. Construction activities adjacent to and within the floodplain of the East Fork of San Luis Obispo Creek, specifically those associated with the extension of Runway 11, the relocation of Santa Fe Road, and the new swale, could have detrimental impacts on water quality. The impacts would be reduced to less than significant through the mitigation identified in Section 5.6, Water Quality and by incorporating into project specifications the provisions of Advisory Circular 150/5370-10 Standards for Specifying

Construction of Airports, (change 10), Item P-156 Temporary Air and Water Pollution, Soil Erosion, and Siltation Control.

Mitigation Measure 5.20-4: Mitigate as described in Section 5.6, Water Quality and by incorporating into project specifications the provisions of Advisory Circular 150/5370-10 Standards for Specifying Construction of Airports.

Impact 5.20-5: Construction Impacts to Biological Resources.

As described in Section 5.10, Threatened and Endangered Species of Flora and Fauna, implementation of Phase I of the Proposed Action would result in both temporary and permanent disturbance to seasonal wetlands, riparian habitat, woodlands, and grasslands that support, or may support, special status species. Potential impacts of Phase I the Proposed Action would include:

- Special Status Aquatic Vertebrates – direct mortality or disturbance of southwestern pond turtle as well as elimination of foraging and nesting habitat, disruption of essential migratory corridors, and higher water temperatures that may be inhospitable to native species downstream of the Airport.

- Special Status Birds – disturbance or loss of foraging habitat for American peregrine falcon and foraging and/or nesting habitat for non-listed special status birds such as tricolored blackbird, California horned lark, loggerhead shrike, salt marsh common yellowthroat, as well as Cooper's hawk, sharp-shinned hawk, northern harrier, white-tailed kite, burrowing owl, golden eagle, ferruginous hawk, merlin and other raptors.

- Special Status Plants – indirect and direct disturbance or mortality of Congdon's tarplant.

As described in Section 5.11, Wetlands, implementation of Phase I of the Proposed Action would result in both temporary and permanent disturbance to seasonal wetlands and riparian areas through filling and draining. This would include work within the ordinary high water mark and bed and banks of a stream, which would result in temporary and permanent removal of riparian habitat as well as temporary and permanent filling of wetlands. Construction would also result in wetland and riparian degradation due to accidental discharges and sedimentation increases.

NEPA Analysis

Compared to the No Action Alternative, the construction of several project components under Phase I of the Proposed potentially could result in:

- Significant adverse impacts to the southwestern pond turtle (federal species of concern and California species of species concern).

- Significant direct or indirect disturbance of special status nesting birds.

- Significant adverse impacts to special status plants.

Compared to the No Action Alternative, Phase I of the Proposed Action would affect jurisdictional waters in the Airport vicinity. Federal and state "no-net loss policies" with respect to wetlands require that wetland losses be compensated.

CEQA Analysis

Compared to Baseline Conditions, certain components of Phase I construction potentially could result in:

- Significant adverse impacts to southwestern pond turtle.
- Significant direct or indirect disturbance of special status nesting birds.
- Significant adverse impacts to special status plants.

Compared to Baseline Conditions, the impacts of Phase I of the Proposed Action would affect jurisdictional waters in the Airport vicinity. Federal and state "no-net loss policies" with respect to wetlands require that wetland losses be compensated.

Mitigation Measure 5.20-5: Mitigate as described in Section 5.10, Threatened and Endangered Species of Flora and Fauna and Section 5.11, Wetlands.

Impact 5.20-6: Increased Worker Exposure to Hazardous Materials

As described in Section 5.19, Hazardous Materials and Solid Waste, construction activities associated with Phase I of the Proposed Action could potentially expose workers to hazardous materials. Project components include sites known to be contaminated (existing and former fuel storage facilities), earthmoving activities that could encounter hazardous materials and sites not yet identified, and asbestos encountered during building demolition or renovation that would require disposal.

NEPA Analysis

Compared to the No Action Alternative, Phase I of the Proposed Action could result in a hazardous materials impact to workers if they were unknowingly exposed to unidentified hazardous materials during construction or demolition activities. Adherence to state and local requirements as well as implementation of mitigation as described in Section 5.19, Hazardous Materials and Solid Waste, would reduce the potential impact to less than significant.

CEQA Analysis

Compared to Baseline Conditions, potential impact to workers would be similar to those described under the NEPA Analysis. Implementation of mitigation as described in Section 5.19, Hazardous Materials and Solid Waste, would reduce the potential impact to less than significant.

Mitigation Measure 5.20-6: Mitigate as described in Section 5.19, Hazardous Materials and Solid Waste.

Phase II (2011 – 2023)

Phase II of the Proposed Action would include construction of additional airside and landside facilities, including extending Runway 7, 500 feet to the southwest, as described in Section 1.1.2, Phase II – 2023 (Proposed Long-Term Projects).

Impact 5.20-1: Increased Noise Disturbance

As described in Section 5.1, Noise, construction of Phase II of the Proposed Action would result in noise disturbance. The closest noise-sensitive uses from any proposed construction location would be residential areas to the south and west of the Airport. Noise levels decrease with distance and are further reduced by intervening topography and structures, and are even lower inside buildings. Conditions under Phase II would be similar to those under Phase I, except that the amount and duration of construction activities would be much less.

CEQA Analysis

The construction noise that would occur under Phase II of the Proposed Action would result in noise levels that are comparable to common noise events that occur in any residential neighborhood. Therefore, this is a less-than-significant impact.

Mitigation Measure 5.20-1: None required.

Impact 5.20-2: Increased Traffic

As described in Section 5.3-1, Transportation, construction of Phase-II airfield and aviation support facilities would generate off-site traffic, which would include the initial delivery of construction vehicles and equipment to the project site, the daily arrival and departure of construction workers, and the delivery of materials and removal of construction debris throughout the construction period. The impact of construction-related traffic would be a temporary and intermittent lessening of the capacities of streets in the Airport vicinity because of the slower movements and larger turning radii of construction trucks compared to passenger vehicles.

CEQA Analysis

A temporary and intermittent lessening of street capacity in the Airport vicinity would occur under Phase II of the Proposed Action compared to Background Conditions. This short-term condition would not have a significant effect on traffic circulation patterns and congestion. Therefore, the construction of Phase II of the Proposed Action would have a less-than-significant impact on traffic conditions.

Mitigation Measure 5.20-2: None required.

Impact 5.20-3: Increased Air Emissions

As described in Section 5.5, Air Quality, Phase II construction-related emissions would be similar to the types of air emissions generated during Phase I construction. Phase II construction emissions have been quantified in Table 5.5-8 according to the methodologies specified in the CEQA *Air Quality Handbook*. The emission estimates are conservative.

CEQA Analysis

Based on the conservative estimate of Phase II construction emissions, the NO_x emissions are potentially significant. The sources which contribute most of the NO_x emissions would be the loaders and off-highway trucks. In addition, the construction-related dust emission impact also is considered to be potentially significant. Any DPM emissions are temporary and intermittent, but would also be substantially improved by the increased reduction of sulfur in diesel fuel. Their long-term effects on chronic health impacts would be small compared to the standard of 70-year exposure to these toxic substances. Therefore, the impacts of diesel construction emissions during Phase II construction would be less than significant.

Mitigation Measure 5.20-3: Mitigate as described in Section 5.5, Air Quality to address NO_x and construction-related dust emissions.

Impact 5.20-4: Water Quality Degradation and Soil Erosion

As described in Section 5.6, Water Quality, construction of Phase II Proposed Action components would require earthwork and grading activities on approximately 29.0 acres between the years 2011 and 2023. Existing structures, pavement, and vegetation that currently help to stabilize site soils would be removed during construction. Although these improvements would not be constructed simultaneously, they could potentially result in significant construction-related erosion, adversely affecting water quality and riparian habitat in the East Fork of San Luis Obispo Creek and the Unnamed Tributary to the East Fork of San Luis Obispo Creek.

CEQA Analysis

Construction activities associated with Phase II Proposed Action components would subject unprotected bare soil areas to the erosional forces of runoff. These impacts would be reduced to less than significant through the mitigation identified in Section 5.6, Water Quality and by incorporating into project specifications the provisions of Advisory Circular 150/5370-10 Standards for Specifying Construction of Airports, (Change 10), Item P-156 Temporary Air and Water Pollution, Soil Erosion, and Siltation Control.

Mitigation Measure 5.20-4: Mitigate as described in Section 5.6, Water Quality and by incorporating into project specifications the provisions of Advisory Circular 150/5370-10 Standards for Specifying Construction of Airports.

Impact 5.20-5: Construction Impacts to Biological Resources

As described in Section 5.10, Endangered and Threatened Species of Flora and Fauna, implementation of Phase II of the Proposed Action would result in both temporary and permanent disturbance to seasonal wetlands, riparian habitat, woodlands, and grasslands that support, or may support, special status species. Potential impacts of Phase II the Proposed Action would include:

- Special Status Aquatic Invertebrates – direct mortality of vernal pool fairy shrimp and California linderiella as well as temporary and permanent habitat loss and degradation due to removal of vegetation, sedimentation and erosion, introduction of equipment fluids and other hazardous construction materials, and other water quality impacts.

- Special Status Birds – disturbance or loss of foraging habitat for American peregrine falcon and foraging and/or nesting habitat for non-listed special status birds such as tricolored blackbird, California horned lark, loggerhead shrike, salt marsh common yellowthroat, as well as Cooper's hawk, sharp-shinned hawk, northern harrier, white-tailed kite, burrowing owl, golden eagle, ferruginous hawk, merlin and other raptors.

- Special Status Plants – indirect and direct disturbance or mortality of Congdon's tarplant, Cambria morning glory, and Hoover's button-celery.

As described in Section 5.11, Wetlands, implementation of Phase II of the Proposed Action would result in the temporary and permanent fill of wetlands in the Airport vicinity. The wetlands affected by Phase II are potentially jurisdictional wetlands and provide habitat for federally threatened fairy shrimp and rare plants.

CEQA Analysis

Compared to Baseline Conditions, certain components of Phase II construction potentially could result in:

- Significant adverse impacts to vernal pool ferry shrimp and California linderiella.

- Significant direct or indirect disturbance of special status nesting birds.

- Significant adverse impacts to special status plants.

Compared to Baseline Conditions, the impacts of Phase II of the Proposed Action would affect jurisdictional waters in the Airport vicinity. Federal and state "no-net loss policies" with respect to wetlands require that wetland losses be compensated.

Mitigation Measure 5.20-5: Mitigate as described in Section 5.10, Endangered and Threatened Species of Flora and Fauna and Section 5.11, Wetlands.

Impact 5.20-6: Increased Worker Exposure to Hazardous Materials

As described in Section 5.19, Hazardous Materials and Solid Waste, construction activities associated with Phase II of the Proposed Action could potentially expose workers to hazardous

materials. Project components include sites known to be contaminated (existing and former fuel storage facilities), earthmoving activities that could encounter hazardous materials and sites not yet identified, and asbestos encountered during building demolition or renovation that would require disposal.

CEQA Analysis

Compared to Baseline Conditions, Phase II of the Proposed Action could result in a hazardous materials impact to workers if they were unknowingly exposed to unidentified hazardous materials during construction or demolition activities. Adherence to state and local requirements as well as implementation of mitigation as described in Section 5.19, Hazardous Materials and Solid Waste, would reduce the potential impact to less than significant.

Mitigation Measure 5.20-6: Mitigate as described in Section 5.19, Hazardous Materials and Solid Waste.

5.20.4 Summary of Impacts

Table 5.20-1 summarizes construction impacts as they relate to Phase I and Phase II of the Proposed Action.

For Phase I of the Proposed Action, construction impacts are somewhat greater than construction impacts under the No Action Alternative. Compared to Baseline Conditions, both Phase I and Phase II of the Proposed Action would generate increased impacts, due to construction, compared to Baseline Conditions. However, these impacts are temporary and intermittent in nature and can be minimized through the use of environmental controls. For further information on the topics summarized in this section, refer to Section 5.1, Noise; Section 5.3-1, Transportation; Section 5.5, Air Quality; Section 5.6, Water Quality; Section 5.10, Threatened and Endangered Species of Flora and Fauna; Section 5.11, Wetlands; and Section 5.19, Hazardous Materials and Solid Waste. Impacts are either less than significant, or may be mitigated to less-than-significant levels.

TABLE 5.20-1
CONSTRUCTION IMPACTS SUMMARY MATRIX

Impact	Phase I (2005-2010)		Phase II (2011-2023)
	Compared to No Action Alternative	Compared to Baseline Conditions	Compared to Baseline Conditions
Increased Noise Disturbance	No increase in noise disturbance	LTS	LTS
Increased Traffic	Temporary impacts to traffic on Tank Farm and Santa Fe Roads	LTS	LTS
Increased Air Emissions	With mitigation, some temporary increase in dust emissions	LTS	LTS
Water Quality Degradation and Soil Erosion	With mitigation, no degradation of water quality	LTS	LTS
Construction Impacts to Biological Resources	With mitigation, no impacts to biological resources	LTS	LTS
Increased Worker Exposure to Hazardous Materials	With mitigation, no impacts to workers being exposed to hazardous materials	LTS	LTS

LTS = Less than significant
N/A = Not Applicable
S = Significant

SOURCE: ESA, 2006

5.21 Geology and Seismicity (CEQA Only)

5.21.1 Background and Methodology

This section provides an overview of existing geologic and seismic conditions at the Airport and in the Airport vicinity, associated regulatory framework, and an analysis of potential geology and seismicity-related impacts that would result from implementation of the Proposed Action. This section evaluates the temporary impacts due to project construction and long-term impacts due to project operations. FAA Order 1050.1E and FAA Order 5050. 4A do not require the examination of geology and seismicity impacts in an environmental assessment (EA). However, an analysis of geology and seismicity is included here for CEQA compliance.

5.21.1.1 Regulatory Context

For a discussion of the regulatory context for geology and seismicity, see Appendix O.

5.21.1.2 Thresholds of Significance

A soils or geologic impact would be considered significant if it would result in any of the following, which are adapted from CEQA *Guidelines*, Appendix G:

- Substantial erosion or loss of topsoil,
- Exposure of people or structures to geologic hazards, soils and/or seismic conditions so unfavorable that they could not be overcome by special design using reasonable construction and/or maintenance practices.
- Construction on substrate that consists of material subject to liquefaction in the event of groundshaking.
- Earthwork with substantial or sustained import of export of soils through offsite areas (i.e., outside the Area Plan).
- Construction on excessively steep slopes that could result in slope failure or landslides.
- Deformed foundations from exposure to expansive soils (those characterized by shrink-swell potential).

Therefore, if the project is located in an area of high seismic, liquefaction, landslide or erosion potential, a significant impact may occur.

5.21.1.3 Methodologies

Geologic hazards and risks are rarely predictable and the extent to which they affect people and property cannot be easily quantified. Therefore, analysis for this document was accomplished using available resources and professional judgment. The California Geologic Survey has produced seismic shaking maps for the entire state which show that estimate the peak ground

acceleration rates that are used for design purposes. The shaking hazard maps show the level of ground motion that has 1 chance in 475 of being exceeded each year, which is equal to a 10% probability of being exceeded in 50 years.

5.21.2 Baseline Conditions

5.21.2.1 Geology

The San Luis Obispo area is within the southern half of the natural geologic region known as the Coast Ranges Province of California, one of the most complex geologic provinces in the state[1]. This province is characterized by northwest trending mountain ridges and valleys that are subparallel to the San Andreas Fault Zone.

The San Luis Obispo area is underlain primarily by rocks of the Franciscan complex. In general, the Franciscan complex consists of graywacke, shale, greenstone (altered volcanic rocks), basalt, chert (ancient silica-rich ocean deposits), and sandstone that originated as ancient sea floor sediments. Sedimentary rocks known as the Monterey and Pismo formations overlie the Franciscan in many parts of the San Luis Obispo area. The most distinctive geologic feature in the area is a chain of 14 volcanic plugs (remnants of volcanoes) that extend northwesterly from the City of San Luis Obispo to the City of Morro Bay, terminating in the prominent visual landmark of Morro Rock. Other notable members of this volcanic chain include Hollister Peak, Bishop Peak and Islay Hill.

The Airport is within the San Luis Valley, which is drained by San Luis Obispo Creek. The underlying material of this alluvial valley is alluvium and river deposits (CDMG, 1958).

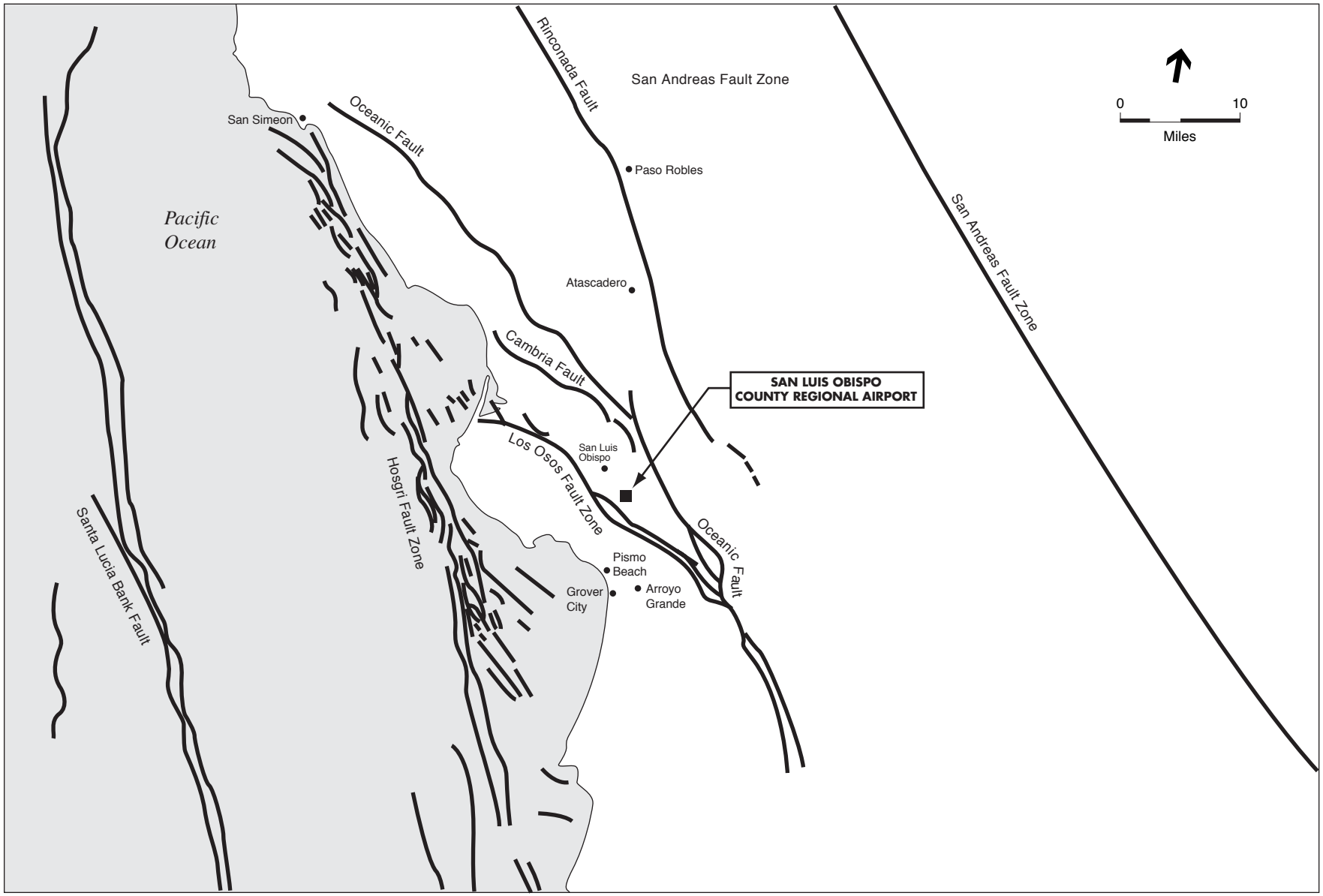
5.21.2.2 Seismicity

The Airport is within a region of California that contains many active and potentially active faults and is considered an area of high seismic activity (see Figure 5.21-1).[2] The 2001 California Building Code locates the entire San Luis Obispo County within Seismic Risk Zone 4. Areas within Zone 4 are expected to experience maximum magnitudes and damage in the event of an earthquake.

Richter magnitude for an earthquake represents the highest amplitude measured by the seismograph at a distance of 100 kilometers from the epicenter. Richter magnitudes vary logarithmically with each whole number step representing a ten fold increase in the amplitude of the recorded seismic waves. Earthquake magnitudes are also measured by their Moment

1 California has been divided in 11 geologic regions that are referred to as provinces. Each province displays distinct landscape or landform defined by unique geologic features, faults, topographic relief and climate (CGS, 2002).

2 An "active" fault is defined by the State of California as a fault that has had surface displacement within Holocene time (approximately the last 11,000 years). A "potentially active" fault is defined as a fault that has shown evidence of surface displacement during the Quaternary (last 1.6 million years), unless direct geologic evidence demonstrates inactivity for all of the Holocene or longer. This definition does not, of course, mean that faults lacking evidence of surface displacement are necessarily inactive. "Sufficiently active" is also used to describe a fault if there is some evidence that Holocene displacement occurred on one or more of its segments or branches (Hart, 1997).



SOURCE: ESA Airports, prepared from Jennings, 1994

San Luis Obispo County Regional Airport Master Plan Update EA-EIR . 203092

Figure 5.21-1
Regional Fault Map

Magnitude (Mw) which is related to the physical characteristics of a fault including the rigidity of the rock, the size of fault rupture, and movement or displacement across a fault (CGS, 2002).

Ground movement during an earthquake can vary depending on the overall magnitude, distance to the fault, focus of earthquake energy, and type of geologic material. The composition of underlying soils, even those relatively distant from faults, can intensify ground shaking. The intensities of an earthquake will vary over the region of a fault and generally decrease with distance from the epicenter of the earthquake.

The San Luis Obispo area includes several active earthquake faults of both local and regional significance, including the San Andreas, Los Osos, Rinconada and Hosgri faults. An active fault is defined as a fault that has a historic seismic record or shows evidence of displacement within the last 11,000 years. Figure 5.21-1 shows the regional faults most likely to cause earthquakes that could affect the SBP vicinity. Table 5.21-1 lists the maximum credible earthquake magnitudes of each fault, the distance of the fault from the Airport, and other relevant information.

Small to moderate earthquakes (magnitudes less than 5.0 M) are common in San Luis Obispo County. The most significant quakes affecting the County during the last century have generally been centered outside the County itself, and have included events in excess of 7.0 M (Lompoc in 1927 and Tehachapi in 1952). The most recent major quake in the area was the 6.5 M San Simeon earthquake of 2003 which caused damage throughout San Luis Obispo County (CISN, 2005).

Ground Rupture

Seismically induced ground rupture is defined as the physical displacement of surface deposits in response to an earthquake's seismic waves. Ground rupture is considered more likely along active faults, which are numerous in San Luis Obispo County (see Figure 5.21-1). The Airport is not within an Alquist Priolo Special Study Zone[3] for fault rupture hazards, as designated by the state. Since no mapped faults are known to pass through the Airport or anywhere reasonably close, the potential risk from fault rupture is considered very low.

Liquefaction

Liquefaction is a phenomenon whereby unconsolidated and/or near saturated soils lose cohesion and are converted to a fluid state as a result of severe vibratory motion. The relatively rapid loss of soil shear strength during strong earthquake shaking results in the temporary fluid-like behavior of the soil. Soil liquefaction causes ground failure that can damage roads, runways, pipelines, underground cables, and buildings with shallow foundations. Loose, granular soils are most susceptible to these effects, while more stable silty clay and clay materials are generally somewhat less affected. The potential for liquefaction varies over the Airport area, and is

[3] The Alquist Priolo Earthquake Fault Zoning Act was established to mitigate the hazard of surface rupture by identifying active faults and prohibiting construction of any buildings on the surface trace of the fault.

TABLE 5.21-1
MAJOR SAN LUIS OBISPO AREA EARTHQUAKE FAULTS

Fault Name[a]	Age[a]	Slip Rate[b]	MCE[c]	Repeat Interval	Proximity to Site	
					Nearest Distance	Direction
Oceanic	Late Quaternary	N/A	7.25	N/A	4 miles	E
Los Osos	Holocene	0.5 ± 0.4	6.75	1,925 years	5 miles	W
Cambria	Late Quaternary	N/A	6.25	N/A	5 miles	NNE
Rinconada	Late Quaternary	1.00 ± 1.00	7.5	1,764 years	11 miles	ENE
Hosgri Fault Zone	Holocene	2.50 ± 1.00	7.5	646 years	15 miles	W
San Andreas (Central section)	Historic	34.00 ± 5.00	8.0	206 years	38 miles	NE
Santa Lucia Bank	Historic	N/A	N/A	N/A	48 miles	W

a Age is the period of recorded or most recent geologic evidence of earthquake displacement on a fault
b Slip Rate is data indicating the amount of surface displacement along the fault over a unit period; the higher the slip rate, the shorter the expected time to the next earthquake
c MCE is the Maximum Credible Earthquake Magnitude, an estimate of the largest earthquake that is judged by geologic studies to be capable of occurring on a fault or segment of a fault for a design period.

NA = Not Available

SOURCES: California Division of Mines and Geology and U.S.G.S., 1996; Jennings, C.W., 1994.

dependent on specific soils types and conditions. Areas most susceptible to this hazard would likely be adjacent to the creeks where there are loose cohesionless sediments and a high groundwater table.

Landslides

The occurrence of landslides is generally influenced by a number of factors, including slope angle, soil moisture content, vegetative cover and the physical nature of the underlying strata. Landsliding can be triggered by one or more specific events including development-related construction, seismic activity and fires. In general, the Airport is located in a relatively flat area with a low potential for landslides.

5.21.3 Impacts and Mitigation

5.21.3.1 No Action Alternative

The No Action Alternative would result in the reconfiguration of the midfield taxiways, the relocation of the threshold for Runway 25, construction of a new terminal building, a parking structure, hangar development, and a fuel storage facility. Standard design and construction practices would be included for each project component to address the potential for geologic

hazards including soil stability and expansive soils. All foundations and geotechnical recommendations would be incorporated as part of each project. Building components would be required to comply with the most current California Building Code (CBC) standards.

5.21.3.2 Proposed Action

Phase I (2005-2010) and Phase II (2011-2023)

Impact 5.21-1: Geologic Impact

The main geologic consideration for the proposed facilities at the Airport is the foundation design for the proposed buildings and the use of imported fill to accommodate the extension of the runway. Standard design and construction practices would be included for each project component to address the potential for geological impacts through implementation of the Proposed Action.

Geotechnical investigations would be completed as necessary for each of the project components under the Proposed Action. The location and scope of these studies would be based on detailed site plans for each project component, and would evaluate the geotechnical feasibility of these projects. All foundations and geotechnical recommendations presented in the site-specific geotechnical investigations would be incorporated as part of the Proposed Action and would comply with the most current CBC standards.

Landslide potential can be characterized as low at the Airport due to the relatively flat terrain. The risk of tsunami and seiches at the Airport are remote since the Airport is over six miles from the ocean.

CEQA Analysis

Compared to Baseline Conditions, the Proposed Action would not result in significant geologic impacts. There would be no increased risk associated with landslides, unstable soils, or substantial erosion or loss of topsoil. The implementation of the above described standard design and construction methods in accordance with all applicable codes and regulations, which are a part of the Proposed Action, would result in potential geologic impacts to be less-than-significant.

Mitigation Measure 5.21-1: None required.

Impact 5.21-2: Seismicity Impact

According to the California Geologic Survey, a probabilistic earthquake in the region would produce groundshaking at the Airport that could cause slight damage on buildings of good design and slight to moderate damage on older buildings (CGS, 2005).

The potential for liquefaction triggered by a seismic event exists in the SBP vicinity, and would be limited to areas underlain by saturated alluvium. These areas are generally located adjacent to watercourses on alluvial plains. The assessment of potential impacts associated with liquefaction

requires site-specific information regarding underlying soils, which would be obtained from site-specific geotechnical studies for individual projects.

The major source of seismic hazards at the site would likely be from non-structural building elements. Potential damage and injuries may be caused by falling objects such as suspended ceilings and light fixtures. Other hazards include toppling furniture; overturned shelving; broken glass; falling plaster, ceiling tiles, and light fixtures; and rupture of overhead water pipes. As part of the Proposed Action construction, all non-structural features would be tied into structural elements of the building. Heavy equipment and other potentially hazardous objects would be secured to floors or walls.

A larger earthquake could potentially cause strong groundshaking that could rupture fuel and natural gas pipelines, resulting in leaks/spills and fire hazards. To reduce the potential for hazardous materials exposure, any new gas lines would be equipped with automatic shut-off valves that would be activated in the event of a major earthquake.

Improved construction techniques in new buildings should further reduce the potential for seismic impacts. The earthquake hazards discussed above currently exist at the site and will continue to exist to some degree following Airport expansion. The effectiveness of measures aimed at reducing earthquake hazards would depend primarily on implementation of safety policies, facility and equipment maintenance, proper training of workers in safety procedures, and the degree to which facility users respect the need for safe use, storage, and disposal of hazardous materials. Most of the potential seismic hazards would be mitigated through sound structural design and construction techniques and ongoing inspection and employee training programs. All new facilities would be included in the Airport's earthquake safety inspections. Periodic training concerning earthquake preparedness and seismic hazards reduction would be conducted at all new facilities. The Airport's Emergency Response Plan would continue to be practiced and would be updated as necessary to incorporate the Proposed Action project components as they are completed.

CEQA Analysis

Compared to the Baseline Conditions, all new construction under the Proposed Action would incorporate, where appropriate, site specific geotechnical evaluation and design criteria in compliance with the most current building code requirements which would minimize any potential damage from an earthquake to a less-than-significant level impact. Implementation of recommendations designed to mitigate seismic hazards would reduce potential impacts to a less-than-significant level.

Mitigation Measure 5.21-2: None required.

5.21.4 Summary of Impacts

The Proposed Action would incorporate contemporary seismic engineering design and construction methods. Therefore, no significant geologic or seismic impacts would occur.

Table 5.21-2 provides a summary of geologic and seismic impacts associated with the Proposed Action.

TABLE 5.21-2
GEOLOGIC AND SEISMIC IMPACTS SUMMARY MATRIX

	Phase I (2005-2010)		Phase II (2011-2023)
Impact	**Compared to No Action Alternative**	**Compared to Baseline Conditions**	**Compared to Baseline Conditions**
Geologic Impacts	N/A	LTS	LTS
Seismic Impacts	N/A	LTS	LTS

LTS = Less than significant
N/A = Not Applicable
S = Significant

SOURCE: ESA, 2006

5.22 Cumulative Impacts

Both NEPA and CEQA require the evaluation and disclosure of all potential direct, indirect (secondary), and cumulative impacts of a proposed action.

5.22.1 Background and Methodology

5.22.1.1 Regulatory Context

For a discussion of the regulatory context for cumulative impacts, see Appendix O.

5.22.1.2 Thresholds of Significance

5.22.1.2.1 NEPA Thresholds

Determining significance under NEPA is guided by FAA Order 1050.1E, *Environmental Impacts: Policies and Procedures* and FAA Order 5050.4A, *Airport Environmental Handbook.* An Environmental Assessment (EA) is required to discuss the potential direct, indirect, and cumulative effects of a proposed action and their significance and determine whether a proposed action would cause a cumulative impact that includes projects within defined temporal and geographic boundaries. In determining the significance of the cumulative effects, the same thresholds of significance used in identifying individual project-related impacts apply. In determining the significance of potential cumulative effects, consideration is given to local, state, and federal standards for affected resources, as well as other applicable policies from land use management plans and other guiding programs. Where numerical thresholds are not available or cannot be determined, impacts are typically quantified in relative terms of magnitude.

5.22.1.2.2 CEQA Thresholds

CEQA allows the use of either a list of past, present, and reasonably foreseeable future projects, including projects outside the jurisdiction or control of the lead agency, or a summary of projections in an adopted planning document. The analytical method and thresholds used to determine the potential cumulative impacts associated with individual environmental resources (e.g., air, noise, etc.) would be the same as those used to identify the direct impacts associated with each resource.

5.22.1.3 Methodologies

For the purpose of assessing cumulative impact, the incremental direct and indirect impacts associated with Phase I and Phase II of the Proposed Action were considered with the direct and indirect effects of other local projects to determine whether they would cause additive or synergistic effects. Specific projects in the vicinity of SBP were identified by the City of San Luis Obispo and by San Luis Obispo County.

Most of the area surrounding SBP is being considered by the City for future annexation. As a result, this analysis evaluates the cumulative effect of these projects in the Airport vicinity which correlates

generally with the areas covered by the City's Airport Area Specific Plan (AASP), Margarita Area Specific Plan, and Orcutt Area Specific Plan as shown in Figure 4-1. On October 12, 2004, the City Council certified the Program Environmental Impact Report (EIR) for the Airport Area and Margarita Area Specific Plans. The vicinity covered by the City's EIR for the Airport Area and Margarita Area Specific Plans correlates closely with the SBP vicinity and the cumulative effects analysis conducted for that EIR is helpful at the programmatic level. Specific projects in the SBP vicinity were identified by City and County staff and are summarized in Table 5.22-1.

5.22.2 Baseline Conditions

The Baseline Condition includes past and present projects included in Table 5.22-1.

5.22.3 Impacts and Mitigation

This analysis only evaluates cumulative impacts to those resource areas where the impacts of the Proposed Action were determined to be more than diminimis or not fully mitigated. This section evaluates cumulative impacts related to transportation, air quality, and endangered and threatened species.

5.22.3.1 No Action Alternative

The No Action Alternative would increase passenger enplanements and flight operations at SBP. The No Action Alternative would also include additional airside and landside facilities, including a new passenger terminal, as described in Section 3.2, No Action Alternative. Existing on-Airport land uses would continue to be consistent and compatible with relevant County and City plans and policies. Cumulative projects would include those projects in the vicinity scheduled for completion by 2010.

5.22.3.2 Proposed Action

Phase I (2005 – 2010)

Phase I of the Proposed Action would generate the same number of passenger enplanements at SBP, but fewer flight operations, compared to the No Action Alternative. Phase I of the Proposed Action would include additional airside and landside facilities, including extending Runway 11, 800 feet to the west, as described in Section 1.1.1, Phase 1 – 2010 (Proposed Near-Term Projects).

Impact 5.22-1: Cumulative Impacts to Transportation

Implementation of Phase I of the Proposed Action would not result in substantial changes to the transportation infrastructure in the Airport vicinity. Santa Fe Road would be relocated and the alignment improved. In cooperation with the California Department of Transportation (Caltrans), previously approved signalization and reconfigured Airport access would improve levels of service (LOS) at the intersection of SR 227 and Airport Drive. As described in Section 5.3-1 Transportation, the signalized intersection of Los Osos Valley Road / U.S. 101 Southbound

TABLE 5.22-1
CUMULATIVE IMPACT PROJECTS

Project Name	Project Size and Description	Project Impacts
Past Actions (constructed since 2000)		
Courtside Cellars/Tolosa Winery	17.2 acre winery site, 124 acre vineyard	Traffic, erosion
Cole Motor Auto Dealership	8,500 sq. ft. dealership, showroom, office	Traffic
Furniture Store	8,500 sq. ft. retail building	Traffic
Kennedy Health Club	47,000 sq. ft. building	Traffic
Retail/Admin Project	5 acres, farm supply building	Traffic (limited)
Aero Vista Business Park	75,000 sq. ft. building	Traffic, erosion
Office/Technology Building	20,000 sq. ft. building	Traffic
Stone Creek Residential	26 residential units	Traffic, erosion
Roadhouse/Mixed Use	15, 293 sq. ft. building	Traffic
Current Actions (construction 2005-2006)		
Cinderella Carpet One Mixed Use	10,432 sq. ft. showroom, 5,286 sq. ft. warehouse; 6 1-bedroom residential units	Traffic
Tompkin's Medical Center	2 2-story bldgs – 52,352 / 24,756 sq. ft.	Traffic
Dioptics Commercial Manufacturing	10 acres, about 120,000 sq. ft. building	Traffic, erosion
Cannon Commercial Park	102,000 sq. ft. office building, 4,000 sq. ft. mini mart/gas station	Traffic, erosion, hazardous materials
Brezden Commercial Development	13,820 sq. ft. building	Traffic
Auto Sales, Smith Volvo	47,000 sq. ft. (permit may expire)	Traffic
Commercial and Industrial Buildings	2 new buildings	Traffic
Tank Farm Office Building	25,000 sq. ft. building	Traffic
Rental Car Ready Return Facility at Airport	25,000 sq. ft.	Traffic
Broad Street Mixed Use	12 acres; 86 residential units; 32,000 sq. ft. commercial building	Traffic, erosion
Margarita Area Specific Plan (initial phase)	131 residential units	Traffic, erosion
PUD	9 residential units	Traffic (limited)
Future Actions (construction 2007-2023)		
Veterinary Facility Expansion and Rezone	20.38 acres; rezoned to Residential Rural	Traffic, erosion
Zoomed Manufacturing Facility	10 acres, about 106,541 sq. ft., but new industrial development being proposed	Traffic, erosion
Morabito/Burke Warehouse	57 acres, subdivided into 28 commercial lots for 500,000 sq. ft. (construction 2007)	Traffic, erosion
Industrial Facility	35,000 sq. ft. (construction date unknown)	Traffic
Margarita Area Specific Plan remainder	420 acres, including earlier residential phase; 749 additional residential units and 969,100 sq. ft. commercial space	Traffic, erosion
Airport Area Specific Plan	958 acres Cluster Development: 346 acres Open Space, 114 acres Business Park, 491 acres Services/Manufacturing, seven acres Medium-density Residential	Traffic, erosion
Orcutt Specific Plan	231 acres; 900-1,000 residences on 113 acres, mixed use on 5 acres, and 5-acre elementary school site	Traffic, erosion, airport compatibility
Weyrich Agricultural Cluster	294 acres; Agricultural Cluster of 13 1-acre lots (under County review)	Traffic, erosion
Avila Ranch	150 acres, commercial and residential (in conceptual design and layout stage)	Traffic, erosion
Dalidio/Marketplace	large commercial development with smaller residential and open space components (under County review)	Traffic, erosion

SOURCE: County and City of San Luis Obispo Records and Four Creeks Rezoning Project Final EIR, 2005.

Off-Ramp would operate at an unacceptable LOS F during both peak hours, and the signalized intersection of SR 227 / Tank Farm Road is expected to operate at an unacceptable LOS E during the p.m. peak hour (see also Appendix D). All other study intersections would operate at an acceptable level of service (i.e., LOS D or better) under Phase I of the Proposed Action.

NEPA Analysis

No cumulative degradation in levels of service would occur under Phase I of the Proposed Action compared to conditions under the No Action Alternative. FAA Order 1050.1E, *Environmental Impacts: Policies and Procedures* and FAA Order 5050.4A, *Airport Environmental Handbook* do not provide specific NEPA thresholds of significance for impacts on surface transportation.

CEQA Analysis

No degradation in levels of service would occur under Phase I of the Proposed Action compared to Baseline Conditions. The increased delay due to traffic generated by growth in the Airport activity would not be great enough to significantly affect traffic circulation patterns and congestion. Regarding cumulative effects, the City's EIR for the Airport Area and Margarita Area Specific Plans concluded that no feasible mitigation is available for levels of service in excess of LOS D (Impact T-2) and that the cumulative transportation impact is significant and unavoidable (City of San Luis Obispo, 2004).

Mitigation Measure 5.22-1: No feasible mitigation is available to address cumulative impacts to transportation.

Impact 5.22-2: Cumulative Impact to Air Quality

As described in Section 5.5 Air Quality, implementation of Phase I of the Proposed Action would require importing about 320,000 cubic yards of clean fill material from various sources. Relatively nearby sources of fill would be preferred, in order to minimize haul distance. Construction activities would generate dust. Implementation of Phase I of the Proposed Action would involve various types of machinery, cars and other motor vehicles, and aircraft operations. These project activities would generate various air emissions including particulate matter (PM10 and PM 2.5), diesel-powered motor (DPM), carbon monoxide (CO), sulfur dioxide (SO2), nitrogen oxides (NOx), and reactive organic gas (ROG) emissions.

NEPA Analysis

Compared to the No Action Alternative, Phase I of the Proposed Action would reduce ROG, CO, and SO2 emissions and would produce roughly the same levels of NOx, PM10, and PM2.5 emissions. No air quality analysis is needed under NEPA to assess national Ambient Air Quality Standards (NAAQS). For NEPA purposes, cumulative air emissions would be less than significant.

CEQA Analysis

Compared to Baseline Conditions, Phase I of the Proposed Action would result in the same emissions for ROG and SO2 and decreased emissions for CO and NOx. PM10 and PM2.5

emissions would increase, but the amount of the increase would be less than significant. For CEQA purposes, cumulative operational air emissions would be less than significant. During construction, NOx emissions would be less than significant due to the limited exposure duration. Construction-related PM10 levels would be considered significant and would contribute to cumulative PM10 emissions in the Airport vicinity.

Mitigation Measure 5.22-2: Mitigate as described in Section 5.5, Air Quality to address construction-related dust impacts.

Impact 5.22-3: Cumulative Impact to Endangered and Threatened Species

As described in Section 5.10, Threatened and Endangered Species of Flora and Fauna, implementation of Phase I of the Proposed Action would result in both temporary and permanent disturbance to seasonal wetlands, riparian habitat, woodlands, and grasslands that support, or may support, special status species. Potential cumulative impacts of Phase I the Proposed Action would include:

- Special Status Aquatic Vertebrates – direct mortality or disturbance of southwestern pond turtle as well as elimination of foraging and nesting habitat, disruption of essential migratory corridors, and higher water temperatures.
- Special Status Birds – disturbance or loss of foraging habitat for American peregrine falcon and foraging and/or nesting habitat for non-listed special status birds.
- Special Status Plants – indirect and direct disturbance or mortality of Congdon's tarplant, Cambria morning glory and Hoover's button-celery.

NEPA Analysis

Compared to the No Action Alternative, the cumulative effect of implementing Phase I of the Proposed potentially could result in:

- Significant adverse impacts to the southwestern pond turtle (federal species of concern and California species of species concern).
- Significant direct or indirect disturbance of special status nesting birds.
- Significant adverse impacts to special status plants.

CEQA Analysis

Compared to Baseline Conditions, the cumulative effect of implementing Phase I of the Proposed Action potentially could result in:

- Significant adverse impacts to southwestern pond turtle.
- Significant direct or indirect disturbance of special status nesting birds.
- Significant adverse impacts to special status plants.

Mitigation Measure 5.22-3: Mitigate as described in Section 5.10, Threatened and Endangered Species of Flora and Fauna. The City's EIR for the Airport Area and Margarita Area Specific Plans requires similar measures to mitigate project-specific impacts so that cumulative effects are less than significant (City of San Luis Obispo, 2004).

Phase II (2011 – 2023)

Phase II of the Proposed Action would generate about 84 percent more passenger enplanements at SBP, but slightly fewer flight operations, compared to Baseline Conditions due to increasing reliance on regional jet aircraft. Phase II of the Proposed Action would include additional airside and landside facilities, including extending Runway 7 by 500 feet to the southwest, as described in Section 1.1.2, Phase II – 2023 (Proposed Long-Term Projects).

Impact 5.22-1: Cumulative Impact to Transportation

Implementation of Phase II of the Proposed Action would not result in substantial changes to the transportation infrastructure in the Airport vicinity. As described in Section 5.3-1 Transportation, five of the eight signalized study intersections are projected to operate at an unacceptable LOS E or F during one or both of the peak traffic hours (see also Appendix D). The three other signalized study intersections would operate at an acceptable level of service (i.e., LOS D or better) under Phase II of the Proposed Action.

In addition, the level of service for critical movements (e.g., left turns from stop-sign-controlled side streets) at the unsignalized study intersection of SR 227 / Airport Drive is projected to operate at an unacceptable LOS F in 2023. Growth in traffic generated by Airport activities would increase outbound left turns, exacerbating delays to complete those turns. SR 227 / Airport Drive currently is a "T"-intersection, but is assumed to be reconfigured by 2023 to form a four-leg intersection, with the fourth leg providing access for the proposed Senn/Glick and Moribito/Burke development. The traffic volume making the affected minor-street left turns (eastbound and westbound) would be about two and three percent of the total intersection volume, without and with the traffic increase due to increased Airport activities, respectively.

CEQA Analysis

No degradations in levels of service at the signalized study intersections would occur under Phase II of the Proposed Action compared to conditions under Baseline Conditions. The increased delay due to traffic generated by growth in Airport activity would not be great enough to have a significant effect on traffic circulation patterns and congestion. Although the impact of Phase II of the Proposed Action at the unsignalized intersection of SR 227 / Airport Drive would be significant, this project impact may be mitigated as described in Section 5.3-1, Transportation. Regarding cumulative effects, the City's EIR for the Airport Area and Margarita Area Specific Plans concluded that no feasible mitigation is available for levels of service in excess of LOS D (Impact T-2) and that the cumulative transportation impact is significant and unavoidable (City of San Luis Obispo, 2004).

Mitigation Measure 5.22-1: Mitigate as described in Section 5.3-1, Transportation to address project-specific transportation impacts. No feasible mitigation is available to address cumulative impacts to transportation.

Impact 5.22-2: Cumulative Impact to Air Quality

As described in Section 5.5 Air Quality, implementation of Phase II of the Proposed Action would generate fugitive dust (PM10 and PM 2.5) due to earthmoving and grading as well as less amounts of emissions from heavy equipment and automobiles. Phase II operations would involve various types of machinery, cars and other motor vehicles, and aircraft operations. These project activities would generate various air emissions including particulate matter (PM10 and PM 2.5), diesel-powered motor (DPM), carbon monoxide (CO), sulfur dioxide (SO2), nitrogen oxides (NOx), and reactive organic gas (ROG) emissions.

CEQA Analysis

Compared to Baseline Conditions, Phase II of the Proposed Action would result in reduced total daily incremental emissions of ROG, CO, NOx, and SO2, and the impacts would be less than significant. Total PM10 emissions (primarily from entrained road dust) are distributed over the entire trip distance of 20 miles and extend beyond the immediate vicinity of the Proposed Action. Mitigation measures are not feasible and/or technically possible and these impacts, taken together with other projects, are significant but unavoidable. During construction, NOx emissions are less than significant due to the limited exposure duration. Construction-related PM10 levels are considered significant.

Mitigation Measure 5.22-2: Mitigate as described in Section 5.5, Air Quality to address construction-related dust impacts. No feasible mitigation is available to address cumulative impacts of PM10 emissions due to project operations.

Impact 5.22-3: Cumulative Impact to Endangered and Threatened Species

As described in Section 5.10, Threatened and Endangered Species of Flora and Fauna, implementation of Phase II of the Proposed Action would result in both temporary and permanent disturbance to seasonal wetlands, riparian habitat, woodlands, and grasslands that support, or may support, special status species. Potential cumulative impacts of Phase II the Proposed Action would include:

- Special Status Aquatic Invertebrates – direct mortality of vernal pool fairy shrimp and California linderiella as well as temporary and permanent habitat loss and degradation.
- Special Status Birds – disturbance or loss of foraging habitat for American peregrine falcon and foraging and/or nesting habitat for non-listed special status birds.
- Special Status Plants – indirect and direct disturbance or mortality of Congdon's tarplant, Cambria morning glory and Hoover's button-celery.

CEQA Analysis

Compared to Baseline Conditions, the cumulative effect of implementing Phase II of the Proposed Action potentially could result in:

- Significant adverse impacts to vernal pool ferry shrimp and California linderiella.
- Significant direct or indirect disturbance of special status nesting birds.
- Significant adverse impacts to special status plants.

Mitigation Measure 5.22-3: Mitigate as described in Section 5.10, Threatened and Endangered Species of Flora and Fauna. The City's EIR for the Airport Area and Margarita Area Specific Plans requires similar measures to mitigate project-specific impacts so that cumulative effects are less than significant (City of San Luis Obispo, 2004).

5.22.4 Summary of Impacts

Table 5.22-2 summarizes cumulative impacts as they relate to Phase I and Phase II of the Proposed Action.

For Phase I of the Proposed Action, cumulative impacts are somewhat greater than cumulative impacts under the No Action Alternative. Compared to Baseline Conditions, both Phase I and Phase II of the Proposed Action would result in greater cumulative impacts. Most cumulative impacts are intermittent in nature and/or able to be minimized through the use of project-specific environmental controls. Such impacts are less than significant or may be mitigated to less-than-significant levels. Certain cumulative impacts to transportation and air quality are significant and unavoidable.

TABLE 5.22-2
CUMULATIVE IMPACTS SUMMARY MATRIX

	Phase I (2005-2010)		Phase II (2011-2023)
Impact	**Compared to No Action Alternative**	**Compared to Baseline Conditions**	**Compared to Baseline Conditions**
Cumulative Impact to Transportation	No cumulative degradation in levels of service	S	S
Cumulative Impact to Air Quality	Contribute to reduction in ROG, CO, and SO2 emissions and contribute same levels of NOx, PM10, and PM2.5 emissions	LTS	S
Cumulative Impact to Endangered and Threatened Species	With mitigation, no loss of threatened and endangered species would occur	LTS	LTS

LTS = Less than significant
N/A = Not Applicable
S = Significant

SOURCE: ESA, 2006

CHAPTER 6
Alternatives Analysis

Section 1502.14 of the President's Council on Environmental Quality Regulations (40 CFR Part 1500-1508) requires that the lead agency evaluate reasonable alternatives in the EA analysis. In addition, as required under Section 15126(d) of the CEQA *Guidelines*, an EIR must discuss a range of reasonable alternatives to a proposed project that would feasibly attain most of the basic objectives of the project while avoiding or lessening significant environmental effects. An evaluation of the comparative merits of the project alternatives also is required. This EA/EIR evaluates two alternatives in an equal level of detail: the Proposed Action and the No Action Alternative. Each of these two alternatives functions as an alternative to the other alternative in conformance with Section 15126(d) of the CEQA *Guidelines*. The discussion of the impacts associated with each of these alternatives occurs in Chapter 5, Environmental Consequences and Mitigation Measures, and is summarized in Chapter 3, Alternatives.

This chapter also describes additional alternatives to the Proposed Action. The alternatives described in Chapter 3 and discussed in Chapter 5, plus the alternatives identified in this chapter encompass a range of reasonable alternatives that would feasibly attain most of the basic objectives of the project while avoiding or lessening significant environmental effects.

The following discussion identifies the three other alternatives that were considered, compares the impacts that would occur under each of these alternatives with the Proposed Action, and identifies the reasons why each alternative was eliminated from further consideration. In addition, in compliance with the CEQA *Guidelines*, an environmentally superior alternative is identified.

6.1 Extend Runway 29 by 800 Feet

6.1.1 Description of Alternative

This alternative would provide an 800-foot runway extension of Runway 29. An Engineered Material Arresting System (EMAS) would be constructed at each runway end and Taxiway A would be extended at the Runway 29 end. The extension of Runway 29 and its associated runway safety area (RSA) would require the realignment of State Route 227 and the realignment of Buckley Road. In addition, a portion of the hill south of the Airport would need to be removed to ensure that no penetration of FAR Part 77 surfaces would occur. The EMAS on the Runway 11 end would result in the realignment of a portion of Santa Fe Road. Figure 6-1 provides a schematic drawing of this alternative.

SOURCE: ESA Airports, 2005

Figure 6-1
Schematic Design of Alternative to
Extend Runway 29 By 800 Feet

The general impacts of this alternative are described by environmental topic area below.

6.1.2 Environmental Impacts

Noise

The noise impacts of this alternative would be similar to that of the Proposed Action. The 65 CNEL noise contour would be the same shape and the same size but would be shifted 800 feet to the south compared to the 65 CNEL noise contour under the Proposed Action. Similar to the Proposed Action, no noise-sensitive uses would exist within the 65 CNEL noise contour under this alternative.

Compatible Land Use

Similar to the Proposed Action, no compatible land use issues would occur under this alternative. However, this alternative would result in the need to acquire additional property to accommodate the extension at the Runway 29 end as well as the realignment of both State Route 227 and Buckley Road.

Social Impacts

The number of vehicle trips generated under this alternative would be the same as that described for the Proposed Action. However, this alternative would alter the intersection of State Route 227 and Buckley Road as well as realign both of these roadways. The State Route 227 / Buckley Road intersection would operate at the same level of service as that of the Proposed Action; the only difference would be that the location of this intersection would be moved.

A portion of Santa Fe Road also would be realigned to accommodate the EMAS at the Runway 11 end. The realignment of this portion of Santa Fe Road would not result in any changes in the level of service for any roadway segment of intersection in the vicinity of SBP.

With the same number of enplanements under this alternative as that anticipated for the Proposed Action, the demand for public services and utilities would be the same as that described for the Proposed Action. This alternative would require the movement of some utility lines and corridors to accommodate the extension of Runway 29 and the realignment of State Route 227 and Buckley Road.

As under the Proposed Action, no significant impacts would occur that would disproportionately affect low-income or minority communities under this alternative. Therefore, as under the Proposed Action, no environmental justice issues would occur.

As with the Proposed Action, no impacts related to Children's Environmental Health and Safety would occur under this alternative.

Induced Socioeconomic Impacts

This alternative would have the same number of enplanements and the same number of Airport employees as that described for the Proposed Action. Therefore, the impacts of this alternative on schools, hospitals, fire protection and emergency services, and police protection services would be the same as that described for the Proposed Action.

With the same number of enplanements under this alternative as that anticipated for the Proposed Action, the demand for water and wastewater utilities would be the same as that described for the Proposed Action.

Air Quality

Construction-related air emissions would be greater under this alternative compared to the Proposed Action. The number of cubic yards of soils that would be moved as a result of the extension of Runway 29, the construction of EMAS at both ends of Runway 11/29, the realignment of both State Route 227 and Buckley Road, the removal of a portion of the hill south of the Airport, and the realignment of a portion of Santa Fe Road would be greater under this alternative compared to the number of cubic yards of soils that would be moved under the Proposed Action. Similarly, the number of acres that would be affected under this alternative would be greater than the number of acres affected under the Proposed Action. In addition, the distance that trucks importing fill and exporting soils could be greater under this alternative, which would result in more air pollutant emissions compared to the Proposed Action.

With the same number of aircraft operations, the same fleet mix, and the same number of vehicle trips as that anticipated for the Proposed Action, the operational air quality impacts of this alternative would be the same as that described for the Proposed Action.

Water Quality

With the greater number of acres affected by earthmoving activities, the potential for erosion is proportionately greater under this alternative compared to the Proposed Action. The operational-related water quality impacts (i.e., runoff contaminants) would be similar to that described for the Proposed Action. The use of best management practices to mitigate these water quality impacts during construction would reduce this impact to a less-than-significant level.

Department of Transportation Act Section 4(f)

Similar to the Proposed Action, no Department of Transportation Act Section 4(f) properties would be affected by this alternative.

Historic, Architectural, Archaeological, and Cultural Resources

Similar to the Proposed Action, this alternative would not affect any historic, architectural, archaeological, or cultural resources.

Biotic Communities

The land uses off the end of the existing Runway 29 are either in agriculture production (e.g., vineyards) or fallow fields. Therefore, the biotic communities in this area include developed lands with ornamental vegetation and agricultural lands. No unique biotic communities exist in this area. The impacts to biotic communities would be similar to those described for the Proposed Action.

Endangered and Threatened Species of Flora and Fauna

With the potential to affect the Unnamed Tributary to the East Fork of San Luis Obispo Creek, this alternative could affect habitat associated with the California red-legged frog. This could require a consultation with the U.S. Fish and Wildlife Service to comply with Section 7 of the Endangered Species Act. In addition, all of the bird species that are identified in Appendix 5-10 also would occur in the area that would be affected by this alternative. The impacts to bird species associated with this alternative would be similar to those described for the Proposed Action.

Wetlands

The runway extension would affect wetlands associated with the Unnamed Tributary to the East Fork of San Luis Obispo Creek. The extent of the impacts to wetlands would depend on the final design of the runway extension, the realignment of State Route 227, and the realignment of Buckley Road. Similar to the Proposed Action, this alternative would require permits to comply with Section 404 of the Clean Water Act.

Floodplains

No 100-year floodplain exists in the area where the runway extension and RSA would be located under this alternative. Compared to the Proposed Action, no impacts to a 100-year floodplain would occur.

Coastal Zone Management Program

As under the Proposed Action, this alternative would have no effect on the coastal zone.

Coastal Barriers

As under the Proposed Action, this alternative would have no effect on coastal barriers.

Wild and Scenic Rivers

As under the Proposed Action, this alternative would have no effect on any wild and scenic river.

Farmland

This alternative would require the acquisition and conversion of land that is currently in agricultural production (e.g., vineyards). This would require compliance with the Farmland Preservation and Protection Act and could result in a significant impact depending on how many acres would be required for the runway extension and RSA as well as the realignment of State Route 227, the realignment of Buckley Road, and the realignment of a portion of Santa Fe Road.

Energy Supply and Natural Resources

With the same number of aircraft operations, the same fleet mix, and the same number of vehicle trips as that anticipated for the Proposed Action, the amount of energy used under this alternative would be the same as that described for the Proposed Action.

Light Emissions

The light emissions associated with this alternative would be similar to that described for the Proposed Action. State Route 227 is a designated scenic roadway by the State of California south of the Airport. This alternative would require the realignment of a portion of this scenic roadway. The impacts of this alternative on this visual resource would be dependent on the alignment of State Route 227.

Solid Waste

With the same number of enplanements, the amount of solid waste generated under this alternative would be the same as that described for the Proposed Action.

Construction

It is likely that the construction-related impacts of this alternative would be slightly greater than those described for the Proposed Action as a result of a larger area where soil disturbance would occur (potentially having air quality and water quality impacts) as well as the location of the area being further from known locations where imported soils could originate. All construction-related impacts could be mitigated to a less-than-significant level using standard construction techniques and best management practices.

Geology and Seismicity

The amount of earth that would be moved would be greater under this alternative compared to the Proposed Action because of the need to remove a portion of the hill south of the Airport for air safety purposes.

This alternative would have similar impacts with respect to seismic impacts as those described for the Proposed Action.

Hazardous Materials

With the same number of aircraft operations, the same fleet mix, and the same number of vehicle trips as that anticipated for the Proposed Action, the impacts of this alternative associated with the use of hazardous materials would be the same as that described for the Proposed Action.

6.1.3 Reasons for Rejection of Alternative

This alternative was dismissed for the following four reasons.

- State Route 227 would need to be relocated as a result of the extension of Runway 29 and the associated EMAS for the Runway 29 end.
- Buckley Road and the Buckley Road intersection with State Route 227 would require relocation.
- An additional segment of the unnamed tributary to the East Fork of San Luis Obispo Creek would need to be put into a culvert to accommodate the placement of fill that would be required to develop a runway extension and the associated RSA.
- An 800-foot extension to Runway 29 would result in terrain south of the Airport penetrating the Federal Aviation Regulation (FAR) Part 77 imaginary surfaces, and a portion of the hillside south of the Airport would need to be removed.

Although each of these issues could be resolved through engineering and design, the cost associated with resolving such issues would be prohibitive.

6.2 Extend Runway 11 by 800 Feet Without Use of EMAS

6.2.1 Description of Alternative

This alternative would create an RSA that would be 1,000 feet long (or 400 feet longer than the RSA described for the Proposed Action). Under this alternative the RSA would extend north of the existing East Fork of San Luis Obispo Creek and onto the Chevron Tank Farm property. In addition, the development of the RSA for the Runway 29 end would result in the need to realign State Route 227 and to realign Buckley Road. Figure 6-2 provides a schematic drawing of this alternative.

The general impacts of this alternative are described by environmental topic area below.

6.2.2 Environmental Impacts

Noise

The noise impacts of this alternative would be the same as that described for the Proposed Action and no noise-sensitive uses would exist within the 65 CNEL noise contour under this alternative.

SOURCE: ESA Airports, 2005

Figure 6-2
Schematic Design of Alternative to
Extend Runway 11 By 800 Feet
without Use of EMAS

Compatible Land Use

Similar to the Proposed Action, no compatible land use issues would occur under this alternative. However, this alternative would result in the need to acquire the Chevron Tank Farm property to accommodate the RSA associated with the extension at the Runway 11.

Social Impacts

The number of vehicle trips generated under this alternative would be the same as that described for the Proposed Action. The alignment of Santa Fe Road would be further west than the alignment under the Proposed Action. Although Santa Fe Road would intersect with Tank Farm Road, the location of the intersection would be dependent on the final alignment of Santa Fe Road. It is likely that the intersection would operate at the same level of service as that described for this intersection under the Proposed Action; however, the location of the intersection would be changed.

In addition, this alternative would alter the intersection of State Route 227 and Buckley Road as well as realign both of these roadways. The State Route 227 / Buckley Road intersection would operate at the same level of service as that of the Proposed Action; the only difference would be that the location of this intersection would be moved.

With the same number of enplanements under this alternative as that anticipated for the Proposed Action, the demand for public services and utilities would be the same as that described for the Proposed Action.

As under the Proposed Action, no significant impacts would occur that would disproportionately affect low-income or minority communities under this alternative. Therefore, as under the Proposed Action, no environmental justice issues would occur.

As with the Proposed Action, no impacts related to Children's Environmental Health and Safety would occur under this alternative.

Induced Socioeconomic Impacts

This alternative would have the same number of enplanements and the same number of Airport employees as that described for the Proposed Action. Therefore, the impacts of this alternative on schools, hospitals, fire protection and emergency services, and police protection services would be the same as that described for the Proposed Action.

With the same number of enplanements under this alternative as that anticipated for the Proposed Action, the demand for water and wastewater utilities would be the same as that described for the Proposed Action.

Air Quality

Construction-related air emissions would be greater under this alternative compared to the Proposed Action. The number of cubic yards of soils that would be moved as a result of the extension of Runway 11, the development of RSAs at both ends of Runway 11/29, the realignment of Santa Fe Road, the realignment of State Route 227, and the realignment of Buckley Road would be greater under this alternative compared to the number of cubic yards of soils that would be moved under the Proposed Action. Similary, the number of acres that would be affected under this alternative would be greater than the number of acres affected under the Proposed Action. In addition, the distance that trucks importing fill and exporting soils could be greater under this alternative, which would result in more air pollutant emissions compared to the Proposed Action.

With the same number of aircraft operations, the same fleet mix, and the same number of vehicle trips as that anticipated for the Proposed Action, the operational air quality impacts of this alternative would be the same as that described for the Proposed Action.

Water Quality

With the greater number of acres affected by earthmoving activities, the potential for erosion is proportionately greater under this alternative compared to the Proposed Action. The construction-related impacts associated with earthmoving activities within and adjacent to the bed and banks of the East Fork of San Luis Obispo Creek would result in greater erosion-related impacts compared to the Proposed Action. The operational-related water quality impacts (i.e., runoff contaminants) would be similar to that described for the Proposed Action.

Department of Transportation Act Section 4(f)

Similar to the Proposed Action, no Department of Transportation Act Section 4(f) properties would be affected by this alternative.

Historic, Architectural, Archaeological, and Cultural Resources

Similar to the Proposed Action, this alternative would not affect any historic, architectural, archaeological, or cultural resources.

Biotic Communities

The biotic communities off the end of the existing Runway 11 are the same as those described for the Proposed Action. With a larger area where impacts would occur, this alternative would result in impacts to the riparian corridor associated with the East Fork of San Luis Obispo Creek. The habitat along the creek would be altered and the biotic communities associated with the riparian corridor would be affected. The impacts under this alternative would be greater than those described for the Proposed Action.

The land uses off the end of the existing Runway 29 are either in agriculture production (e.g., vineyards) or fallow fields. Therefore, the biotic communities in this area include developed lands with ornamental vegetation and agricultural lands. Although no unique biotic communities exist in this area, this alternative would result in the loss of ornamental vegetation and agricultural lands.

Endangered and Threatened Species of Flora and Fauna

With the additional area on the Chevron Tank Farm property that would be affected under this alternative compared to the Proposed Action, there would be a greater potential for effects to endangered and threatened species that exist on the Chevron Tank Farm property. These species include the Morro shoulderband snail, vernal pool fairy shrimp, California linderiella, and numerous special status bird species. This alternative would result in the alteration to the habitat for these endangered and threatened species and additional mitigation would be required to compensate for these impacts. The U.S. Army Corps of Engineers would request that a Section 7 consultation with U.S. Fish and Wildlife Service occur because of the amount of habitat that would be affected under this alternative. The County would be required to identify additional mitigation measures to reduce this impact to a less-than-significant level. Compared to the Proposed Action, this alternative would result in greater impacts to a variety of endangered and threatened species of flora and fauna.

Wetlands

This alternative would result in greater impacts to wetlands on the Chevron Tank Farm property because of the increase in the amount of land that would be needed to extend the runway and develop the RSA. The amount of wetlands affected under this alternative would be greater than one acre and compared to the Proposed Action could result in the need to obtain an individual permit from the U.S. Army Corps of Engineers instead of a nationwide permit required under the Proposed Action.

Floodplains

The impacts to the 100-year floodplain associated with the East Fork of San Luis Obispo Creek would be greater than that described for the Proposed Action. With the RSA extending beyond the existing alignment of the East Fork of San Luis Obispo Creek, a greater area of the floodplain would be displaced compared to that described for the Proposed Action. Engineering solutions would be required to accommodate the flows during storm events so that no impacts to the floodplain occur. Thus, the impacts to the floodplain under this alternative would be greater than those described for the Proposed Action.

Coastal Zone Management Program

As under the Proposed Action, this alternative would have no effect on the coastal zone.

Coastal Barriers

As under the Proposed Action, this alternative would have no effect on coastal barriers.

Wild and Scenic Rivers

As under the Proposed Action, this alternative would have no effect on any wild and scenic river.

Farmland

The impacts to farmland under this alternative would be the same as those described for the Proposed Action.

Energy Supply and Natural Resources

With the same number of aircraft operations, the same fleet mix, and the same number of vehicle trips as that anticipated for the Proposed Action, the amount of energy used under this alternative would be the same as that described for the Proposed Action.

Light Emissions

The light emissions associated with this alternative would be the same as that described for the Proposed Action.

Solid Waste

With the same number of enplanements, the amount of solid waste generated under this alternative would be the same as that described for the Proposed Action.

Construction

It is likely that the construction-related impacts of this alternative would be greater than those described for the Proposed Action as a result of a larger area where soil disturbance would occur (potentially having air quality and water quality impacts). All construction-related impacts could be mitigated to a less-than-significant level using standard construction techniques and best management practices.

Geology and Seismicity

The amount of earth that would be moved would be greater under this alternative compared to the Proposed Action.

This alternative would have similar impacts with respect to seismic impacts as those described for the Proposed Action.

Hazardous Materials

With the same number of aircraft operations, the same fleet mix, and the same number of vehicle trips as that anticipated for the Proposed Action, the impacts of this alternative associated with the use of hazardous materials would be the same as that described for the Proposed Action.

The placement of the RSA on the Chevron Tank Farm property would result in earthmoving activities in an area where known hazardous materials are located. The known contamination on the Chevron Tank Farm property would need to be cleaned up prior to the development of an RSA in this area. This impact would not occur under the Proposed Action and could significantly increase the time schedule and cost of construction of the RSA.

6.2.3 Reasons for Rejection of Alternative

This alternative was dismissed for the following seven reasons.

- A much greater amount of fill would be required to develop an RSA that is 400 feet longer than the Proposed Action.
- Santa Fe Road would need to be relocated on Chevron Tank Farm property and the alignment of Santa Fe Road would result in an intersection with Tank Farm Road in a location that is further west than the proposed intersection. This would result in the need to modify City and County plans for the roadway system in the vicinity of the Airport.
- A portion of East Fork of San Luis Obispo Creek and the swale to be developed for flood control purposes would need to be put into a culvert.
- Placement of fill on a portion of the Chevron Tank Farm property to accommodate the RSA would be in an area where wetlands have been delineated and where habitat of the endangered Morro shoulderband snail, vernal pool fairy shrimp, and California linderiella have been documented. These impacts would require an individual Section 404 (of the Clean Water Act) permit from the U.S. Army Corps of Engineers and Section 7 (of the Endangered Species Act) consultation with the U.S. Fish and Wildlife Service.
- The County would either need to obtain an easement or acquire a portion of the Chevron Tank Farm property for development of an RSA and the realignment of Santa Fe Road. Since portions of this property are known to be contaminated, the County would be required to clean up the contaminated portions of the property prior to FAA approval for an easement or for acquisition.
- State Route 227 would need to be relocated as a result of the RSA for the Runway 29 end.
- Buckley Road and the Buckley Road intersection with State Route 227 would require relocation as a result of the RSA for the Runway 29 end.

Although each of these issues could be resolved through permit requirements, engineering and design, the cost associated with resolving such issues would be prohibitive.

6.3 Environmentally Superior Alternative (CEQA Only)

The CEQA Guidelines require that an EIR identify an "environmentally superior alternative"; if the No Action Alternative is considered environmentally superior, then the EIR must identify any alternative among the others that is environmentally superior (Guidelines Section 15120(c); Guidelines Section 15126(d)(4)). The Proposed Action is considered to be environmentally superior because air quality, water quality, biotic communities, endangered and threatened species, wetlands, and floodplains impacts would be less severe under the Proposed Action than under the other alternatives.

CHAPTER 7
CEQA-Required Impact Overview

7.1 Significant and Avoidable Adverse Impacts

According to Section 15126 (b) of the CEQA Guidelines, the purpose of this section is to "describe any significant impacts, including those which can be mitigated but not reduced to a level of insignificance. Where there are impacts that cannot be alleviated without imposing an alternative design, their implications and the reasons why the project is being proposed, notwithstanding their effect, should be described."

The significant effects of the Proposed Action and the No Action Alternative are identified in Chapter 5 of this EA/EIR. Mitigation measures are identified in those sections would reduce all of the significant impacts to a level of less-than-significant except for impacts associated with the increase in regional air pollutant emissions under Phase II of the Proposed Action. Therefore, the only significant unavoidable impacts of the Proposed would be the increase in PM-10, ROG, and NOx emissions during Phase II.

7.2 Significant Irreversible Environmental Changes

Section 15126 of the CEQA Guidelines requires that an EIR identify any significant irreversible changes associated with a proposed action. Such changes typically include use of non-renewable resources or land use changes that would preclude other types of development in the future.

- Utilization of non-renewable resources. Development of the Proposed Action would irretrievably commit building materials and energy to the construction and maintenance of the project components. The Proposed Action would generate an increased commitment to the local use of fuels to meet increased transportation demand in the Airport vicinity. Indirectly, this increase in traffic would have an irreversible effect on the air quality of the immediate vicinity and in the region.

- Fixed development pattern of the Airport vicinity. Commitment to construction of the Proposed Action would result in an irreversible land use and development pattern. While it is possible that changes to the development of the land could be made over time, it is unlikely that this would occur once developed.

- Commitment to services. The Proposed Action would require the provision of water, wastewater, solid waste, energy, and other public services to meet the increased demand for services at the Airport. The commitment to dedicate additional public services to the Airport would be a long-term, irreversible use of those services and required resources.

7.3 Growth Inducing Impacts

7.3.1 CEQA Definition of Growth Inducement

The CEQA *Guidelines* (Section 15126(g)) require that an EIR evaluate the growth-inducing impact of a proposed action. The Guidelines define a growth-inducing impact as "the way in which the proposed action could foster economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment. Included in this are [public works] projects which would remove obstacles to population growth. Growth is not assumed to be necessarily beneficial, detrimental, or of little significance to the environment."

The environmental effects of a proposed action's induced growth are secondary or indirect impacts. Secondary effects of growth can result in significant increased demand on community and public service infrastructures, increased traffic, noise, degradation of air and water quality, and agricultural land conversion to urbanized uses.

7.3.2 Growth Inducement Potential

A variety of factors influence business and residential or population growth in a specific project area, such as the general plans and policies of the cities and counties and/or the availability of water, public schools, and transportation services. Airport operations at SBP are not a direct constraint to development in the SBP vicinity; rather, airport development is designed to accommodate demand forecast of air passengers and air cargo operations. The demand forecast is based on population and employment projections for SBP's service area and on nationwide air traffic demand projections (for a detailed discussion on these projections, see Section 2 of the Airport Master Plan). The development that is projected to occur in greater San Luis Obispo County has been included in the demand forecast for the Airport.

The *San Luis Obispo County Airport Master Plan* (2005) forecasts the Airport's enplanements will grow from 163,200 in 2004 to approximately 301,100 by the year 2023. Based on the CEQA definition above, assessing the growth-inducement potential of the Proposed Action involves answering the following question: will increases in air passengers, air cargo, and based aircraft directly or indirectly encourage or support more economic or population growth or residential construction?

Since SBP is located in an area that is zoned primarily for a variety of urban uses, improvements at the Airport would not directly induce growth into a previously undeveloped area or an area where growth has been restricted by lack of infrastructure. However, growth in jobs related to Airport activities could indirectly increase the demand for housing, goods and services in the SBP vicinity.

Growth-inducement may constitute an adverse impact if the growth is not consistent with the land use and growth management plans and policies for the affected area. Thus, it is important to determine the degree to which the growth accommodated by a proposed action would or would not be consistent with applicable land use plans. Operation of the Airport at its current location is

consistent with applicable land use plans and lands surrounding the Airport are planned for Airport-compatible uses (see Section 5.2, Land Use).

7.3.3 Growth Inducement Effects

Based on the CEQA definition of growth inducement, the increase in air passenger and air cargo tonnage operations under the Proposed Action as well as the No Action Alternative could result in additional economic growth and jobs within the Airport service area. This could result in increased demand for jobs, housing, goods, and services. This indirect effect on business and residential growth would be consistent with land use plans of San Luis Obispo County. The particular indirect effect on growth by each activity sector is discussed below.

The number of general aviation based aircraft would increase by the same margin under both the Proposed Action and the No Action Alternative. Thus, it is likely that some of the businesses that cater to the general aviation industry and are not in the area may be more attracted to the Airport. This would compete with other businesses that cater to air passengers or air cargo operations to locate in the Airport vicinity. These businesses are consistent with the land use plans of San Luis Obispo County.

The increase in the number of air passengers could increase the demand for commercial visitor services in the Airport vicinity, such as taxi and shuttle services, overnight accommodations, and restaurants. This could result in urban development projects to accommodate the demand for these services. It is likely that hotels, motels, and other visitor-related services could be established in proximity to the Airport to provide such services. These businesses are consistent with the land use plans of both the City of San Luis Obispo and San Luis Obispo County.

Similarly, the increase in air cargo operations could result in the development of ancillary or related warehouse, office, and support space in the Airport vicinity. This increase in air passenger and air cargo services also could increase the number of spin-off businesses that are related to the travel or shipping business.

Secondary environmental impacts that could occur as a result of development in the Airport vicinity to provide space for business that cater to air passengers and air cargo operations would include increased traffic congestion, increased emissions of air pollutants, and intensification of existing urban lands. The San Luis Obispo County *General Plan* and the City's *Airport Area Specific Plan* address the potential for urbanized development for all lands adjacent to the Airport. Any secondary growth that may occur as a result of an increase in air passenger activity and air cargo operations has been analyzed and would only affect type of land use not whether the area would be developed. Projected development for the year 2023 analyzed in this EA/EIR is predicated on the buildout of these plans. Therefore, the effects of growth inducement are addressed throughout Chapter 5 of this EA/EIR.

This page intentionally let blank.

CHAPTER 8
List of Preparers

8.1 Lead Agency

The FAA is the NEPA lead agency for preparation of this EA/EIR.

U.S. Department of Transportation
Federal Aviation Administration
San Francisco Airports District Office
831 Mitten Road
Burlingame, California 94010

The County of San Luis Obispo is the CEQA lead agency for preparation of this EA/EIR

County Government Center
1055 Monterey St.
San Luis Obispo, CA 93408

8.2 Principal Reviewers

Responsibility for review of this Environmental Assessment and Environmental Impact Report (EA/EIR) rests with the Federal Aviation Administration (FAA). Listed below are the identities and backgrounds of the principal FAA individuals in accordance with Council on Environmental Quality (CEQ) *Regulations* Section 1502.7 and Paragraph 87 of FAA Order 5050.4A, *Airport Environmental Handbook*.

David B. Kessler, AICP, Regional Environmental Protection Specialist, Airports Division, Western-Pacific Region. B.A. Physical Geography (Geology Minor), M.A. Physical Geography, 26 years experience. Responsible for overall preparation and coordination of federal environmental disclosure documents for the Airports Division, Western-Pacific Region.

Barry Franklin, Environmental Protection Specialist, Airports Division, San Francisco Airports District Office. B.S. Civil Engineering, 16 years experience. Responsible for FAA review of EA/EIR, coordination with the California State Historic Preservation Officer, the U.S. Fish and Wildlife Service, the U.S. Army Corps of Engineers.

Aimee Kratovil, Environmental Protection Specialist, Airports Division, San Francisco Airports District Office. B.A. Sociology, J.D., 5 years experience. Responsible for FAA review of EA/EIR.

8.3 Principal Preparers

Responsibility for preparation of this Environmental Assessment and Environmental Impact Report (EA/EIR) rests with the County of San Luis Obispo. Listed below are the employees of the County responsible for preparation of this EA/EIR. Substantial assistance and data analysis was provided by consultants hired by the County of San Luis Obispo. The consultant for preparation of this document was Environmental Science Associates (ESA).

It is recognized that no one individual can be an expert in all of the environmental analysis presented in this Draft EA/EIR. Consequently, an interdisciplinary team, consisting of technicians and experts in various topics was required to prepare and complete this study. All decisions regarding the content, scope and methodology of the Draft EA/EIR analysis were made by the County of San Luis Obispo with review and input from the FAA.

8.3.1 San Luis Obispo County

The following County Staff members contributed to document preparation:

Klaasje Nairne, C.A.E., 15 years experience. Airports Manager. Responsible for County review of the EA/EIR and Airport Master Plan update.

Martin Pehl, C.A.E., C.M., Assistant Airports Manager, 9 years experience. Support County review of the EA/EIR and Airport Master Plan update.

Ellen Carroll, B.S. Environmental Services, 25 years experience. Environmental Coordinator. Responsible for County review of the EA/EIR.

Bill Robeson, B.S. City and Regional Planning, M.S. Architecture, 10 years experience. Senior Planner, Department of Planning and Building. Responsible for County review of EA/EIR and Airport Land Use Commission review of Airport Master Plan.

George Rosenberger, B.S. Architecture and Construction Engineering, 35 years experience. Assistant Director of General Services. Responsible for County review of the EA/EIR and project delivery.

Don Sather, Architect, 30 years experience. Senior Capital Project Coordinator. County Project Manager, responsible for project coordination and delivery.

8.3.2 Environmental Science Associates (EA/EIR Consultant)

San Luis Obispo County retained Environmental Science Associates (ESA) to prepare this EA/EIR. The following ESA staff were involved in the preparation of the EA/EIR.

David J. Full, AICP, B.A. Urban Planning, M.U.P. Urban Planning, 23 years experience. ESA Project Manager. Responsible for contractual oversight of EA/EIR preparation, QA/QC of all work products, FAA coordination, and County of San Luis Obispo coordination.

Lisa Harmon, B.A. English. 14 years experience. Responsible for preparing the Social Impacts, Section 4(f), Cultural Resources, Coastal Resources, Wild and Scenic Rivers, and Farmland sections of the EA/EIR.

Jack Hutchison, B.S. Civil Engineering, M.Eng, Transportation Engineering, 27 years of experience. Responsible for preparing the Transportation section of the EA/EIR.

Peter Hudson, B.S. Geology, 16 years of experience. Responsible for providing quality control for the Water Quality, Floodplains, Geology and Seismicity, and Hazardous Materials sections of the EA/EIR.

Martha Lowe, M.A., Ecosystem Restoration and Management, 5 years of experience. Responsible for preparing the Biotic Communities, Threatened and Endangered Species, and Wetlands sections of the EA/EIR.

Lee Miles, M.A. Biogeography, 8 years of experience. Responsible for preparing the Wetlands section of the EA/EIR and the proposed Nationwide Permit in compliance with Section 404 of the Clean Water Act.

Jan Mulder, AICP, B.A. Geology, 27 years experience. Deputy Project Manager. Assisted with coordination of all aspects of EA/EIR preparation, QA/QC of all work products, and County of San Luis Obispo coordination. Responsible for preparing the Affected Environment, Induced Socioeconomic Impacts, Solid Waste, Energy and Natural Resources, Construction Impacts, and Cumulative Impacts sections of the EA/EIR.

Brian Pittman, M.S., Environmental Studies, 8 years of experience. Responsible for conducting field surveys for the California red-legged frog.

Michael Ratte, B.S. Meteorology, 15 years of experience. Responsible for preparing Air Quality section of the EA/EIR.

Steve Ritter, B.S. Aviation Management, 12 years of experience. Responsible for preparing the Purpose and Need Statement.

Thomas Roberts, CWB, M.S. Wildlife Biology, BA, Anthropology, 25 years of experience. Responsible for conducting quality control review of the Biotic Communities, Threatened and Endangered Species, and Wetlands sections of the EA/EIR.

Eric Schniewind, REA, B.A. Geological Sciences, 12 years experience. Responsible for preparing the Geology and Seismicity, and Hazardous Materials sections of the EA/EIR.

Ronald Seymour, B.S., Aviation Management, 25 years of experience. Responsible for preparing the Noise section of the EA/EIR.

Tamara Stauber, B.A, Architectural Studies, 6 years of experience. Responsible for project administration.

Kelly White, BA Environmental Studies. 5 years of experience. Responsible for preparing the Water Quality and Floodplains sections of the EA/EIR.

CHAPTER 9
Public Participation and List of Agencies and Persons Contacted

9.1 Public Participation

The SBP Master Plan process has been ongoing for the past three years. As part of the planning process, a public involvement program is being conducted to ensure that information is provided to the general public and public agencies from the earliest stages of project planning, and that input from interested parties is received and reviewed throughout the environmental review process.

Federal agencies are required to provide readily accessible documents, notices, and hearings to inform individuals and organizations of the human health and environmental effects of a proposed action. The SBP Master Plan was presented before the Board of Supervisors of San Luis Obispo County at a public hearing on January 25, 2005 at which time public comment was heard. Additionally, three (3) Planning Advisory Meetings were held as part of the development of the Master Plan Update. The SBP Master Plan has been presented to the community in several outreach forums, including Chambers of Commerce and various civic and community groups. In addition, the Master Plan has been the subject of numerous articles in local newspapers such as the *Telegram Tribune* and the *New Times*, and has been reported on local television programming.

The *San Luis Obispo County Regional Airport Master Plan* also was available for public review at the following locations:

1) San Luis Obispo County Airport Administration Offices;
2) San Luis Obispo City / County Public Library;
3) San Luis Obispo County Government Center; and
4) California Polytechnic University at San Luis Obispo.

In compliance with the California Environmental Quality Act (CEQA), the County issued a Notice of Preparation (NOP) on 4 January 2006. A copy of the NOP and the comments received on the NOP are presented in Appendix L.

Both the National Environmental Policy Act (NEPA) and CEQA require that the Draft EA/EIR be made available for public review and comment. Accordingly, the Draft EA/EIR will be available for public review from 28 February 2006 to 17 April 2006. During this 45-day period, comments on the accuracy and completeness of the Draft EA/EIR were submitted by public agencies and other groups. Written comments were submitted to:

Bill Robeson
County of San Luis Obispo
Environmental Division
Department of Planning and Building
County Government Center, Room 310
San Luis Obispo, California 93408
(805) 781-5607

The Final EA/EIR includes comments received on the Draft EA/EIR and the responses to those comments (see Appendix M). The Final EA/EIR has been released for public review and comment. Notices of the availability of the Final EA/EIR have been placed in local newspapers. In addition, persons on the mailing list have been sent notification of the locations where the Final EA/EIR is available for review.

The Final EA/EIR has been sent to certain parties and made available for review at selected locations in the SBP vicinity.

9.2 List of Agencies and Persons Contacted

The following is a listing of the various agencies that were contacted during the preparation of this EA/EIR.

Federal Agencies

National Marine Fisheries Service

Anthony Spina

U.S. Army Corps of Engineers

Bruce Henderson, Ecologist, Senior Project Manager

U.S. Fish and Wildlife Service

Steve Henry, Assistant Field Supervisor

Chris Kofron, Senior Biologist

Diana Noda, Field Supervisor

State Agencies

California Department of Fish and Game

Mike Hill

California Department of Transportation

Roger Barnes, Transportation Engineer

California Department of Forestry and Fire Protection

Robert Lewin, Battalion Chief

Native American Heritage Commission

Rob Wood, Environmental Specialist III

Office of Historic Preservation

Milford Wayne Donaldson, State Historic Preservation Officer

San Jose State University

J. J. Smith, Fisheries Biologist

Local / Regional Agencies

City of San Luis Obispo

Mike Draze, Deputy Director of Community Development

Dan Gilmore, Utilities Engineer

Ryan Chapman

Land Conservancy of San Luis Obispo County

Brian Stark, Director

Regional Water Quality Control Board

Corinne Huckaby, Sanitary Engineer Technician

San Luis Coastal Unified School District

Ilse Outcalt, Executive Assistant to the Assistant Superintendent and Business Services

San Luis Obispo County

David Clew

Carolyn Huber, Airport Operations Manager

Chris Macek, Airport Land Use Commission

Robin Weckerly, Commander, Sheriff's Office

Mary Whittlesey, Solid Waste Coordinator, Department of Public Works

Non-Governmental Contacts

David Wolff Environmental

David Wolff

Mead & Hunt

David Breinke

Michael Preszler

Mike Shutt

Tony Tezla

Eric Van Deuren

Tartaglia Engineering

John Smith

Bob Tartaglia

CHAPTER 10
REFERENCES

1. Proposed Action

Governor's Office of Planning and Research (OPR), *CEQA Statutes and Guidelines,* 2005. Available at: http://ceres.ca.gov/ceqa/

San Luis Obispo County, *San Luis Obispo County Regional Airport Master Plan*, 2004. Available at: San Luis Obispo County Regional Airport.

United States Department of Transportation, Federal Aviation Administration (FAA), Order 1050.1E, *Environmental Impacts: Policies and Procedures,* 2004. Available at: San Luis Obispo County Regional Airport.

United States Department of Transportation, Federal Aviation Administration (FAA), Order 5050.4A*, Airport Environmental Handbook,* 1985. Available at: San Luis Obispo County Regional Airport.

2. Purpose and Need

Federal Aviation Administration and San Luis Obispo County, *San Luis Obispo County Airport Master Plan, Final Environmental Assessment/Environmental Impact Report*, 1998. Available at: San Luis Obispo County Regional Airport.

San Luis Obispo County, *Airport Records*, 2005. Available at: San Luis Obispo County Regional Airport.

San Luis Obispo County, *San Luis Obispo County Regional Airport Master Plan*, 2004. Available at: San Luis Obispo County Regional Airport.

United States Department of Transportation, Federal Aviation Administration (FAA), *Terminal Area Forecasts*, 2005. Available at: San Luis Obispo County Regional Airport.

3. Alternatives

Governor's Office of Planning and Research (OPR), *CEQA Statutes and Guidelines,* 2005. Available at: http://ceres.ca.gov/ceqa/

Council on Environmental Quality (CEQ), 40 Code of Federal Regulations (CFR), Section 1502.14, 1978. Available at: http://wwwceq.eh.doe.gov/neap/regs/ceq/1502.htm#1502.14.

San Luis Obispo County, *San Luis Obispo County Regional Airport Master Plan*, 2004. Available at: San Luis Obispo County Regional Airport.

United States Department of Transportation, Federal Aviation Administration (FAA), Order 1050.1E, *Environmental Impacts: Policies and Procedures,* 2004. Available at: San Luis Obispo County Regional Airport.

United States Department of Transportation, Federal Aviation Administration (FAA), Order 5050.4A*, Airport Environmental Handbook,* 1985. Available at: San Luis Obispo County Regional Airport.

4. Affected Environment

California Department of Finance, Demographic Research Unit, September 2005. Data available at: www.dof.ca.gov/HTML/DEMOGRAP/Druhpar.asp.

California Employment Development Department, September 2005. Data available at: www.labormarketinfo.edd.ca.gov/.

City of San Luis Obispo, *Draft San Luis Obispo Airport Area Specific Plan,* 2005. Available at: http://www.slocity.org/communitydevelopment.asp.

City of San Luis Obispo, *Final Environmental Impact Report for the Four Creeks Rezoning Project,* October 2005. Available at: http://www.slocity.org/communitydevelopment/docsandforms/envirodocs.asp.

City of San Luis Obispo, *Final Program Environmental Impact Report for the Airport Area and Margarita Area Specific Plans and Related Facilities Master Plans,* 2003. Available at: http://www.slocity.org/communitydevelopment.asp.

City of San Luis Obispo, *Margarita Area Specific Plan,* 2004. Available at: http://www.slocity.org/communitydevelopment/pdfviewer.asp?Dept=Communitydevelopment&Filename=masp.pdf.

San Luis Obispo County, *Housing Element, San Luis Obispo County General Plan*, adopted October 12, 1982, amended July 20, 2004. Available at: San Luis Obispo County Department of Planning and Building.

San Luis Obispo County, *San Luis Obispo County Airport Land Use Plan,* amended 2005. Available at San Luis Obispo County Department of Planning and Building.

San Luis Obispo County, *San Luis Obispo County General Plan – San Luis Obispo Area Plan*, updated 2004. Available at: San Luis Obispo County Department of Planning and Building.

San Luis Obispo County, *San Luis Obispo County Regional Airport Master Plan*, 2004. Available at: San Luis Obispo County Regional Airport.

United States Department of Transportation, Federal Aviation Administration (FAA), Order 1050.1E, *Environmental Impacts: Policies and Procedures,* 2004. Available at: San Luis Obispo County Regional Airport.

5. Environmental Consequences and Mitigation Measures

Noise

Federal Interagency Committee on Noise (FICON), *Federal Agency Review of Selected Airport Noise Analysis Issues*, 1992. Available at: http://www.fican.org/download/nai-8-92.pdf#search='Federal%20Interagency%20Committee%20n%20Noise'.

San Luis Obispo County, *Noise Element, San Luis Obispo County General Plan*, 1991. Available at: San Luis Obispo County Department of Planning and Building.

San Luis Obispo County, *San Luis Obispo County Regional Airport Master Plan*, 2004. Available at: San Luis Obispo County Regional Airport.

Compatible Land Use

California Department of Transportation (CalTrans), *California Aviation System Plan,* 2003. Available at: www.dot.ca.gov/hq/planning/aeronaut/htmlfile/sre2003.php/.

City of San Luis Obispo, *Draft San Luis Obispo Airport Area Specific Plan,* 2005. Available at: http://www.slocity.org/communitydevelopment.asp.

City of San Luis Obispo, *Final Program Environmental Impact Report for the Airport Area and Margarita Area Specific Plans and Related Facilities Master Plans,* 2003. Available at: http://www.slocity.org/communitydevelopment.asp.

Federal Aviation Administration and San Luis Obispo County, *San Luis Obispo County Airport Master Plan, Final Environmental Assessment/Environmental Impact Report*, 1998. Available at: San Luis Obispo County Regional Airport.

Governor's Office of Planning and Research (OPR), *CEQA Statutes and Guidelines,* 2005. Available at: http://ceres.ca.gov/ceqa/

San Luis Obispo County, *San Luis Obispo County Airport Land Use Plan,* amended 2005. Available at San Luis Obispo County Department of Planning and Building.

San Luis Obispo County, *San Luis Obispo County Regional Airport Master Plan*, 2004. Available at: San Luis Obispo County Regional Airport.

San Luis Obispo County, *Housing Element, San Luis Obispo County General Plan*, adopted October 12, 1982, amended July 20, 2004. Available at: San Luis Obispo County Department of Planning and Building.

San Luis Obispo County, *San Luis Obispo County General Plan – San Luis Obispo Area Plan*, updated 2004. Available at: San Luis Obispo County Department of Planning and Building.

United States Department of Transportation, Federal Aviation Administration (FAA), FAR Part 150, *Airport Noise Compatibility,* 1984. Available at: http://ecfr.gpoaccess.gov/cgi/t/text/text-idx?c=ecfr&sid=b43c26fba4352d3d4de968898f1fd5fd&rgn=div5&view=text&node=14:3.0.1.2.7&idno=14.

United States Department of Transportation, Federal Aviation Administration (FAA), Order 1050.1E, *Environmental Impacts: Policies and Procedures,* 2004. Available at: San Luis Obispo County Regional Airport.

United States Department of Transportation, Federal Aviation Administration (FAA), FAR Part 77, *Obstruction to Navigation,* 2003. Available at: San Luis Obispo County Regional Airport.

United States Department of Transportation, Federal Aviation Administration (FAA), Order 5200.51 *Waste Disposal Sites on or near Airports,* 1992. Available at: San Luis Obispo County Regional Airport.

United States Department of Transportation, Federal Aviation Administration (FAA), Order 5050.4A*, Airport Environmental Handbook,* 1985. Available at: San Luis Obispo County Regional Airport.

Social Impacts

Transportation

California Department of Transportation, *State Route 227 Corridor Study*, 2003. Available at Caltrans offices.

California Department of Transportation, *Traffic Manual*, 2004. Available at: Caltrans offices.

California Department of Transportation, *2004 Traffic Volumes of California State Highways*, 2005. Available at: Caltrans offices.

City of San Luis Obispo, *City of San Luis Obispo Traffic Counts*, 2005. Available at http://maps.slocity.org/website/trafficcounts/viewer.htm.

County of San Luis Obispo, *San Luis Obispo Fringe Circulation Study*, 2004. Available at: San Luis Obispo County Department of Planning and Building.

Institute of Transportation Engineers, "Airport Trip Generation", *ITE Journal*, May 1998. Available at: San Luis Obispo County Department of Planning and Building.

Transportation Research Board, *2000 Highway Capacity Manual*. Available at: San Luis Obispo County Regional Airport.

Environmental Justice

U.S. Census Bureau, Census 2000 Summary File 3 (SF 3) Data, 2000. Available at: http://factfinder.census.gov

U.S. Census Bureau, Census 2000 Summary File 1 (SF 1) Data, 2000. Available at: http://factfinder.census.gov

Children's Health and Safety Risks

San Luis Obispo Coastal School District, School Locations, 2005. Available at: www.slcusd.org/maps.html.

United States Department of Transportation, Federal Aviation Administration (FAA), Order 1050.1E, *Environmental Impacts: Policies and Procedures,* 2004. Available at: San Luis Obispo County Regional Airport.

United States Department of Transportation, Federal Aviation Administration (FAA), Order 5050.4A*, Airport Environmental Handbook,* 1985. Available at: San Luis Obispo County Regional Airport.

Induced Socioeconomic Impacts

Employment

Federal Aviation Administration and San Luis Obispo County, *San Luis Obispo County Airport Master Plan, Final Environmental Assessment/Environmental Impact Report*, 1998. Available at: San Luis Obispo County Regional Airport.

San Luis Obispo Chamber of Commerce, *2005 Community Economic Profile for the City of San Luis Obispo*, 2004. Available at: http://slochamber.org/Library/2005%20Community%20Economic%20Profile.pdf.

San Luis Obispo County, *San Luis Obispo County Regional Airport Master Plan*, 2004. Available at: San Luis Obispo County Regional Airport.

San Luis Obispo County, *Housing Element, San Luis Obispo County General Plan*, adopted October 12, 1982, amended July 20, 2004. Available at: San Luis Obispo County Department of Planning and Building.

U.S. Census Bureau, *American FactFinder, Factsheet: San Luis Obispo County, California*, 2000. Available at: http://factfider.census.gov/servlet/.

Public Services

California Department of Finance, *E-1 State/County Population Estimates with Annual Percent Change (January 1, 2004 and 2005)*, September 2005. Available at: www.dof.ca.gov/HTML/DEMOGRAP/E-1table.xls.

California Department of Transportation (CalTrans), California Aviation System Plan, 2003. Available at: www.dot.ca.gov/hq/planning/aeronaut/htmlfile/sre2003.php/.

City of San Luis Obispo, *Draft San Luis Obispo Airport Area Specific Plan,* 2005. Available at: http://www.slocity.org/communitydevelopment.asp.

City of San Luis Obispo, Local Hospitals, September 2005. Available at: www.ci.san-luis-obispo.ca.us/economicdevelopment/Movinghere/hospitals.asp.

Federal Aviation Administration and San Luis Obispo County, *San Luis Obispo County Airport Master Plan, Final Environmental Assessment/Environmental Impact Report*, 1998. Available at: San Luis Obispo County Regional Airport.

French Hospital Medical Center, September 2005. Available at: www.chwcareers.org/showFacility.aspx?type=1&loc=61.

Governor's Office of Planning and Research (OPR), *CEQA Statutes and Guidelines,* 2005. Available at: http://ceres.ca.gov/ceqa/

San Luis Obispo County, *San Luis Obispo County Regional Airport Master Plan*, 2004. Available at: San Luis Obispo County Regional Airport.

San Luis Coast Unified School District, *School Capacity and Enrollment in the Airport Vicinity*, 2005. Available at: San Luis Obispo County Regional Airport.

Sierra Vista Regional Medical Center, September 2005. Available at: www.sierravistaregional.com/CWSContent/sierravistaregional/aboutus/.

United States Department of Transportation, Federal Aviation Administration (FAA), Order 1050.1E, *Environmental Impacts: Policies and Procedures,* 2004. Available at: San Luis Obispo County Regional Airport.

United States Department of Transportation, Federal Aviation Administration (FAA), Order 5050.4A*, Airport Environmental Handbook,* 1985. Available at: San Luis Obispo County Regional Airport.

Utilities

City of San Luis Obispo, Utilities, September 2005. Available at: www.ci.san-luis-obispo.ca.us/utilities.

Federal Aviation Administration and San Luis Obispo County, *San Luis Obispo County Airport Master Plan, Final Environmental Assessment/Environmental Impact Report*, 1998. Available at: San Luis Obispo County Regional Airport.

Governor's Office of Planning and Research (OPR), *CEQA Statutes and Guidelines,* 2005. Available at: http://ceres.ca.gov/ceqa/

Lewin, Robert, Battalion Chief, California Department of Forestry and Fire Protection (CDF), San Luis Obispo (SLO) County Fire Department, personal communication, September 12, 2005. Available at: San Luis Obispo County Regional Airport.

San Luis Coast Unified School District, *School Capacity and Enrollment in the Airport Vicinity*, 2005. Available at: San Luis Obispo County Regional Airport.

San Luis Obispo County, *San Luis Obispo County Regional Airport Master Plan*, 2004. Available at: San Luis Obispo County Regional Airport.

United States Department of Transportation, Federal Aviation Administration (FAA), Order 1050.1E, *Environmental Impacts: Policies and Procedures,* 2004. Available at: San Luis Obispo County Regional Airport.

United States Department of Transportation, Federal Aviation Administration (FAA), Order 5050.4A*, Airport Environmental Handbook,* 1985. Available at: San Luis Obispo County Regional Airport.

Weckerly, Robin, Commander, County of San Luis Obispo Sheriff's Office, Coast Station, personal communication, September 7, 2005. Available at: San Luis Obispo County Regional Airport.

Air Quality

San Luis Obispo County Air Pollution Control District, CEQA *Air Quality Handbook, A Guide to Assessing the Air Quality Impacts of Projects Subject to CEQA Review*, 2003. Available at: San Luis Obispo County Regional Airport.

California Air Resources Board, *Summaries of Air Quality Data*, 1999, 2000, 2001, 2002, 2003; http://www.arb.ca.gov/adam/cgi-bin/db2www/polltrendsb.d2w/start.

California Air Resource Board, *California Ambient Air Quality Data*, 1980-2003. Available at: http://www.arb.ca.gov/aqd aqdcd/aqdcd.htm.

California Air Resource Board, *Air Quality Standards*, May 15, 2003. Available at: http://www.arb.ca.gov/aqs/aqs.htm.

San Luis Obispo County Air Pollution Control District, *CEQA Air Quality Handbook, A Guide to Assessing the Air Quality Impacts of Projects Subject to CEQA Review,* 2003. Available at: San Luis Obispo Country Regional Airport.

United States Department of Transportation, Federal Aviation Administration (FAA), Order 1050.1E, *Environmental Impacts: Policies and Procedures,* 2004. Available at: San Luis Obispo County Regional Airport.

United States Department of Transportation, Federal Aviation Administration (FAA), Order 5050.4A*, Airport Environmental Handbook,* 1985. Available at: San Luis Obispo County Regional Airport.

United States Environmental Protection Agency, *Clean Air Act*, 1990. Available at: http://www.epa.gov/air/caa/.

Water Quality

California Regional Water Quality Control Board (RWQCB), *Central Coast Region, Basin Plan*, 1994. Available at: http://www.swrcb.ca.gov/rwqcb3/WMI/Index.htm.

City of San Luis Obispo, Utilities, September 2005. Available at: www.ci.san-luis-obispo.ca.us/utilities.

City of San Luis Obispo and County of San Luis Obispo, *Waterway Management Plan*, 2003. Available at: http://www.slocity.org/publicworks/documents.asp.

Department of Water Resources (DWR), *California's Groundwater Bulletin, No. 118*, 2004. Available at: http://www.groundwater.water.ca.gov/bulletin118/.

Huckaby, Corinne, Regional Water Quality Control Board, personal communication, January 21, 2004. Available at: San Luis Obispo County Regional Airport.

Mead & Hunt, *San Luis Obispo County Regional Airport Runway 11 Extension Drainage Study,* March 2005. Available at: San Luis Obispo County Regional Airport

San Luis Obispo County, *San Luis Obispo County Airport, Stormwater Pollution Prevention Plan*. Airport WDID: 3-401002529, July 2005. Available at: San Luis Obispo County Regional Airport.

United States Department of Transportation, Federal Aviation Administration (FAA), Order 1050.1E, *Environmental Impacts: Policies and Procedures,* 2004. Available at: San Luis Obispo County Regional Airport.

United States Department of Transportation, Federal Aviation Administration (FAA), Order 5050.4A*, Airport Environmental Handbook,* 1985. Available at: San Luis Obispo County Regional Airport.

Department of Transportation Act Section 4(f)

California Coastal Commission, *San Luis Obispo County Periodic Review, Map 6-D, "Public Parklands and Coastal Access, San Luis Bay and South County Planning Areas, San Luis Obispo, CA"*, 2001. Available at: http://www.coastal.ca.gov/recap/slosum/html.

City of San Luis Obispo, Department of Recreation, Parks and Joint Use Sites (map), 2005. Available at: http://www.ci.san-luis-obispo.ca.us/parksandrecreation/download/cityparkjtsites.pdf.

Federal Aviation Administration and San Luis Obispo County, *San Luis Obispo County Airport Master Plan, Final Environmental Assessment/Environmental Impact Report*, 1998. Available at: San Luis Obispo County Regional Airport.

San Luis Obispo County, Parks Department, Parks Map, 2005. Available at: http://www.slocountyparks.com/facilities/index.htm#WebMap.

Cultural Resources

Federal Aviation Administration and San Luis Obispo County, *San Luis Obispo County Airport Master Plan, Final Environmental Assessment/Environmental Impact Report*, 1998. Available at: San Luis Obispo County Regional Airport.

Governor's Office of Planning and Research (OPR), *CEQA Statutes and Guidelines,* 2005. Available at: http://ceres.ca.gov/ceqa/

Pehl, Martin, Assistant Airport Manager, San Luis Obispo County Regional Airport, personal communication, September 6, 2005. Available at: San Luis Obispo County Regional Airport.

San Luis Obispo County, San Luis Obispo County Regional Airport, "Airport History", 2001. Available at: www.sloairport.com/history.htm.

United States Department of Transportation, Federal Aviation Administration (FAA), Order 1050.1E, *Environmental Impacts: Policies and Procedures,* 2004. Available at: San Luis Obispo County Regional Airport.

United States Department of Transportation, Federal Aviation Administration (FAA), Order 5050.4A*, Airport Environmental Handbook,* 1985. Available at: San Luis Obispo County Regional Airport.

Wood, R., Native American Heritage Commission, personal communication, September 23, 2005. Available at: San Luis Obispo County Regional Airport.

Biotic Communities

City of San Luis Obispo, *Draft San Luis Obispo Airport Area Specific Plan,* 2005. Available at: http://www.slocity.org/communitydevelopment.asp.

City of San Luis Obispo, *Final Program Environmental Impact Report for the Airport Area and Margarita Area Specific Plans and Related Facilities Master Plans,* 2003. Available at: http://www.slocity.org/communitydevelopment.asp.

Federal Aviation Administration and San Luis Obispo County, *San Luis Obispo County Airport Master Plan, Final Environmental Assessment/Environmental Impact Report*, 1998. Available at: San Luis Obispo County Regional Airport.

Governor's Office of Planning and Research (OPR), *CEQA Statutes and Guidelines,* 2005. Available at: http://ceres.ca.gov/ceqa/

Hickman, J.C. (editor), *The Jepson Manual of Higher Plants of California*, 1993. Available at: San Luis Obispo County Regional Airport.

Holland, R.F., *Preliminary Descriptions of the Terrestrial Natural Communities of California*, 1986. Available at: San Luis Obispo County Regional Airport.

Jameson, E.W., Peeters, H.J., *California Mammals,* University of California Press, Berkeley, California, 1988. Available at: San Luis Obispo County Regional Airport.

Mayer, K.E. and W.F. Laudenslayer (editors), *A Guide to Wildlife Habitats of California*, 1988. Available at: http://www.dfg.ca.gov/whdab/html/wildlife_habitats.html.

Mead & Hunt, *San Luis Obispo County Regional Airport Runway 11 Extension Drainage Study,* March 2005. Available at: San Luis Obispo County Regional Airport

San Luis Obispo County, *Environmental Assessment for the San Luis Obispo County Airport Master Plan, 404(b)(1) Public Interest Review, Permit Application Number 995008100-TW*, 2000. Available at: San Luis Obispo County Regional Airport.

San Luis Obispo County, *San Luis Obispo County Regional Airport Master Plan*, 2004. Available at: San Luis Obispo County Regional Airport.

San Luis Obispo County, *Draft Environmental Impact Report for the San Luis Obispo Area Plan Update, State Clearinghouse No. 93041018*, 1995. Available at: San Luis Obispo County Department of Planning and Building.

Sawyer, J.O. and T. Keeler-Wolf, *A Manual of California Vegetation*, 1995. Available at: http://www.ice.ucdavis.edu/cnps.

Sibley, D.A., *The Sibley Guide to Birds*, 2000. Available at: San Luis Obispo County Regional Airport.

Sibley, D.A., *The Sibley Guide to Bird Life and Behavior*, 2001. Available at: San Luis Obispo County Regional Airport

Stebbins, R.C., *A Field Guide to Western Reptiles and Amphibians*, 1985. Available at: San Luis Obispo County Regional Airport

United States Department of Transportation, Federal Aviation Administration (FAA), Order 1050.1E, *Environmental Impacts: Policies and Procedures,* 2004. Available at: San Luis Obispo County Regional Airport.

United States Department of Transportation, Federal Aviation Administration (FAA), Order 5050.4A*, Airport Environmental Handbook,* 1985. Available at: San Luis Obispo County Regional Airport.

UNOCAL, *Final Report: Unocal San Luis Obispo Tank Farm, Phase I Biological Resources Studies,* September 10, 2003a. Available at: San Luis Obispo County Regional Airport.

UNOCAL, *Final Report: Unocal San Luis Obispo Tank Farm, Phase II Biological Resources Studies,* October 10, 2003b. Available at: San Luis Obispo County Regional Airport.

Zeiner, D.C., W.F. Laudenslayer, K.E. Mayer, and M. White, *California's Wildlife. Vols. I, II and III*, California Statewide Wildlife Habitat Relationships System (Version 7.0), 1990. Available at: http://www.dfg.ca.gov/whdab/html/cawildlife.html.

Endangered and Threatened Species

California Burrowing Owl Consortium, *Burrowing Owl Survey Protocol and Mitigation Guidelines,* 1997. Available at: www2.ucsc.edu/~scpbrg.

California Department of Fish and Game (CDFG), *Staff Report on Burrowing Owl Mitigation*, September 25, 1995. Available at: http://www.dfg.ca.gov/hcpb/species/stds_gdl/bird_sg/burowlmit.pdf.

CDFG, California Natural Diversity Database (CNDDB), *California Natural Diversity Data Base printout for USGS 7.5-Minute Topographic Quadrangles: Pismo Beach, Arroyo Grande Northeast, San Luis Obispo, and Lopez Mountain*, September 2005. Available at: San Luis Obispo County Regional Airport.

California Native Plant Society (CNPS), *CNPS Electronic Inventory for 7.5-minute topographic quadrangles for Pismo Beach, Arroyo Grande Northeast, San Luis Obispo, and Lopez Mountain*, 2005. Available at: San Luis Obispo County Regional Airport.

City of San Luis Obispo, *Final Program Environmental Impact Report for the Airport Area and Margarita Area Specific Plans and Related Facilities Master Plans,* 2003. Available at: http://www.slocity.org/communitydevelopment.asp.

San Luis Obispo County, *San Luis Obispo County Regional Airport Master Plan*, 2004. Available at: San Luis Obispo County Regional Airport.

Essex Environmental, *California Red-legged Frog Field Surveys for the San Luis Obispo County Airport Master Plan*, October 19, 1998. Available at: San Luis Obispo County Regional Airport.

Federal Register, *Endangered and Threatened Species; Designation of Critical Habitat for Seven Evolutionarily Significant Units of Pacific Salmon and Steelhead in California, Final Rule, Vol. 70, No. 170*, September 2, 2005. Available at: San Luis Obispo County Regional Airport.

Federal Register, *Listing of Several Evolutionary Significant Units (ESU's) for West Coast Steelhead, Final Rule, Vol. 62, No. 159*, August 18, 1997. Available at: San Luis Obispo County Regional Airport.

Federal Register, *Determination of Threatened Status for the California Red-Legged Frog, Final Rule, Vol. 61, No. 101*, May 23, 1996. Available at: http://frwebgate.access.gpo.gov/cgi-bin/getdoc.cgi?dbname=1996_register&docid=fr23my96-22.pdf.

Henry, Steve, U.S. Fish and Wildlife Service (USFWS), personal communication, January 25, 2005. Available at: San Luis Obispo County Regional Airport.

Hickman, J.C. (editor), *The Jepson Manual of Higher Plants of California*, 1993. Available at: San Luis Obispo County Regional Airport.

Mayer, K.E. and W.F. Laudenslayer (editors), *A Guide to Wildlife Habitats of California*, 1988. Available at: San Luis Obispo County Regional Airport.

Moyle, P. B., R. M. Yoshiyama, J. E. Williams, and E. D. Wikramanayake, *Fish Species of Special Concern in California,* 1995. Available at: http://www.dfg.ca.gov/hcpb/info/fish_ssc.pdf.

Noda, Diana, U.S. Fish and Wildlife Service (USFWS), personal communication, June 7, 2004. Available at: San Luis Obispo County Regional Airport.

Skinner, M.W. and B.M. Pavlik (eds.), *California Native Plant Society's Inventory of Rare and Endangered Vascular Plants of California,* 1994. Available at: http://cnps.web.aplus.net/cgi-bin/inv/inventory.cgi.

Smith, J. J., Fisheries Biologist, San Jose State University, personal communication, February 6, 7, and 10, 2003. Available at: San Luis Obispo County Regional Airport.

Stebbins, R.C., A Field Guide to Western Reptiles and Amphibians, 1985. Available at: San Luis Obispo County Regional Airport.

Tamagni, C., Distribution of the Five Native Fish Species in the San Luis Obispo Creek Watershed, 1995. Available at: http://www.centralcoastsalmon.com/crkdocs/tamagni/tamagni.html.

UNOCAL, *Final Report: Unocal San Luis Obispo Tank Farm, Phase I Biological Resources Studies,* September 10, 2003a. Available at: San Luis Obispo County Regional Airport.

UNOCAL, *Final Report: Unocal San Luis Obispo Tank Farm, Phase II Biological Resources Studies,* October 10, 2003b. Available at: San Luis Obispo County Regional Airport.

UNOCAL, *Final Report: Unocal San Luis Obispo Tank Farm, Phase III Biological Resources Studies*, June 3, 2004. Available at: San Luis Obispo County Regional Airport.

U.S. Fish and Wildlife Service (USFWS)*, Biological Opinion for the San Luis Obispo County Airport Runway 29 Extension Project, (1-8-99-F-57)*, November 15, 1999. Available at: San Luis Obispo County Regional Airport.

U.S. Fish and Wildlife Service (USFWS), *Letter to U.S. Army Corps of Engineers district offices regarding Programmatic Formal Endangered Species Act Consultation on Issuance of Permits under Section 404 of the Clean Water Act or Authorizations under the Nationwide Permit Program for Projects that May Affect the California Red-legged Frog*, January 26, 1999. Available at: San Luis Obispo County Regional Airport.

U.S. Fish and Wildlife Service (USFWS), *Revised Guidance on Site Assessments and Field Surveys for the California Red-legged Frog*, August 2005. Available at: San Luis Obispo County Regional Airport.

Wolff, David, David Wolff Environmental, personal communication, September 15, 2005. Available at: San Luis Obispo County Regional Airport.

Wetlands

EDAW, Inc., *Wetland Delineation for Unocal Tank Farm, San Luis Obispo County*, July 28, 1999. Available at: San Luis Obispo County Regional Airport.

Environmental Laboratory, C*orps of Engineers Wetland Delineation Manual*, January 1987. Available at: San Luis Obispo County Regional Airport.

Federal Aviation Administration and San Luis Obispo County, *San Luis Obsipo County Airport Wetland Delineation Report,* April 1, 1999. Available at: San Luis Obispo County Regional Airport.

Federal Aviation Administration and San Luis Obispo County, *San Luis Obispo County Airport Master Plan, Final Environmental Assessment/Environmental Impact Report*, 1998. Available at: San Luis Obispo County Regional Airport.

Jenesis Ecological Services, *State Wetland Delineation Report, UNOCAL's San Luis Obispo Tank Farm,* May 2003. Available at: San Luis Obispo County Regional Airport.

MacKay and Somps, *Tank Farm: Unocal Corporation, San Luis Obispo, California, jurisdictional wetland map scaled at 1:2400*, 2001. Available at: San Luis Obispo County Regional Airport.

National Research Council, *Compensating for Wetland Losses under the Clean Water Act,* 2001. Available at: http://www.nap.edu/books/0309074320/html/.

U.S. Army Corps of Engineers, *Guidance on Compensatory Mitigation Projects for Aquatic Resource Impacts Under the Corps Regulatory Program Pursuant to Section 404 of the Clean Water Act and Section 10 of the River and Harbors Act of 1899, Regulatory Guidance Letter No. 02-2*, December 24, 2002. Available at: http://www.usace.army.mil/inet/functions/cw/hot_topics/RGL_02-2.pdf.

U.S. Army Corps of Engineers, *Letter of Agreement Between the U. S. Army Corps of Engineers, South Pacific Division, and the National Fish and Wildlife Foundation Concerning the Establishment and Operation of the South Pacific Wetlands Conservation Account*, November 20, 2000. Available at: San Luis Obispo County Regional Airport.

Floodplains

City of San Luis Obispo and County of San Luis Obispo, *Waterway Management Plan*, 2003. Available at: http://www.slocity.org/publicworks/documents.asp.

City of San Luis Obispo, *Draft San Luis Obispo Airport Area Specific Plan,* 2005. Available at: http://www.slocity.org/communitydevelopment.asp.

Mead & Hunt, *San Luis Obispo County Regional Airport Runway 11 Extension Drainage Study,* March 2005. Available at: San Luis Obispo County Regional Airport

San Luis Obispo County, *Environmental Impact Report for the Land Use Element, San Luis Obispo Area Plan*, 1995. Available at: San Luis Obispo County Department of Planning and Building.

Van Deuren, Eric, Mead & Hunt, personal communication August 30, 2005. Available at: San Luis Obispo County Regional Airport.

Coastal Zone

Robeson, Bill, , Planner, San Luis Obispo County Department of Planning and Building, personal communication, September 8, 2005. Available at: San Luis Obispo County Regional Airport.

San Luis Obispo County, *Coastal Zone, San Luis Obispo County, Geographic Information System Map*. Available at: http://www.sloplanning.org/PDFs/coastalposter_11-2003.pdf

Federal Aviation Administration and San Luis Obispo County, *San Luis Obispo County Airport Master Plan, Final Environmental Assessment/Environmental Impact Report*, 1998. Available at: San Luis Obispo County Regional Airport.

Coastal Barriers

U.S. Fish and Wildlife Service, *Coastal Barrier Resources System Fact Sheet*, May 7, 1998. Available at: www.fws.gov/cep/cbrfact.html

Wild and Scenic Rivers

Friends of the River, *California Wild and Scenic Rivers Act (Including summary and rivers in the California Wild and Scenic River System),* 2003. Available at: www.friendsoftheriver.org/CaliforniaRivers/CaliforniaWildAndScenicRiversAct.html

National Park Service, *National Wild and Scenic River System, List of Wild and Scenic Rivers by State*, March 28, 2005. Available at: http://www.nps.gov/rivers/wildriverslist.html#ca

Farmland

California Coastal Commission, *Agricultural Lands Under Williamson Act Contracts, San Luis Obispo County Periodic Review*, 2000. Available at: http://www.coastal.ca.gov/recap/slo/slo-map-5-a.pdf.

California Department of Conservation, Division of Resource Protection, *Definitions of Farmland of Local Importance (Farmland Mapping and Monitoring Program)*, 2005. Available at: http://www.conserve.ca.gov/DLRP/fmmp/pubs/local_definitions_00.pdf

City of San Luis Obispo, *Draft San Luis Obispo Airport Area Specific Plan,* 2005. Available at: http://www.slocity.org/communitydevelopment.asp.

Federal Aviation Administration and San Luis Obispo County, *San Luis Obispo County Airport Master Plan, Final Environmental Assessment/Environmental Impact Report*, 1998. Available at: San Luis Obispo County Regional Airport.

Pehl, Martin, Assistant Airport Manager, San Luis Obispo County Regional Airport, personal person communication, September 14, 2005. Available at: San Luis Obispo County Regional Airport.

San Luis Obispo County, *San Luis Obispo County Airport Land Use Plan,* amended 2005. Available at San Luis Obispo County Department of Planning and Building.

San Luis Obispo County, Department of Agriculture, *San Luis Obispo County General Plan*, *Chapter 2, Agriculture and Open Space Element*, no date. Available at: http://www.sloag.org/Agriculture%20Resources/Land%20Use/Chapter_2.pdf

Energy and Natural Resources

California Air Resources Board (CARB), *EMFAC2002 Release*, 2004. Available at: www.arb.ca.gov.

California Building Standards Commission, *2001 Title 24, Part 6, California Building Standards Energy Code*, 2001 (revised 2003). Available at: http://www.bsc.ca.gov/title_24/t24_2001tried.html.

Executive Order 13123, *Greening the Government through Efficient Energy Management*, 1999. Available at: http://www.eere.energy.gov/femp/pds/eo13123.pdf.

Federal Aviation Administration and San Luis Obispo County, *San Luis Obispo County Airport Master Plan, Final Environmental Assessment/Environmental Impact Report*, 1998. Available at: San Luis Obispo County Regional Airport.

Governor's Office of Planning and Research (OPR), *CEQA Statutes and Guidelines,* 2005. Available at: http://ceres.ca.gov/ceqa/

San Luis Obispo County, *San Luis Obispo Utilities – Electric*, July 2001 through July 2005. Available at: San Luis Obispo County Regional Airport.

San Luis Obispo County, *Fuel Flowage Summary Report (Year End Summary) for San Luis Obispo County Regional Airport, 1993-2004*,September 1, 2005. Available at: San Luis Obispo Country Regional Airport.

San Luis Obispo County, *San Luis Obispo County Regional Airport Master Plan*, 2004. Available at: San Luis Obispo County Regional Airport.

San Luis Obispo County, *San Luis Obispo Utilities – Electric*, July 2001 through July 2005. Available at: San Luis Obispo County Regional Airport.

United States Department of Transportation, Federal Aviation Administration (FAA), Order 1050.1E, *Environmental Impacts: Policies and Procedures,* 2004. Available at: San Luis Obispo County Regional Airport.

United States Department of Transportation, Federal Aviation Administration (FAA), Order 5050.4A*, Airport Environmental Handbook,* 1985. Available at: San Luis Obispo County Regional Airport.

Light Emissions and Aesthetics

Federal Aviation Administration and San Luis Obispo County, *San Luis Obispo County Airport Master Plan, Final Environmental Assessment/Environmental Impact Report*, 1998. Available at: San Luis Obispo County Regional Airport.

San Luis Obispo County, *Environmental Impact Report for San Luis Obispo County Airport Master Plan, Addendum No.3,* 2005a. Available at: San Luis Obispo County Regional Airport.

San Luis Obispo County, *Draft Supplemental Environmental Impact Report, San Luis Obispo County Airport Master Plan,* 2005b. Available at: San Luis Obispo County Regional Airport.

Hazardous Materials and Solid Waste

Department of Toxic Substances Control (DTSC), *Cortese List,* 2005. Available at: http://www.dtsc.ca.gov/database/Calsites/Cortese_List.cfm.

Federal Aviation Administration and San Luis Obispo County, *San Luis Obispo County Airport Master Plan, Final Environmental Assessment/Environmental Impact Report*, 1998. Available at: San Luis Obispo County Regional Airport.

Governor's Office of Planning and Research (OPR), *CEQA Statutes and Guidelines,* 2005. Available at: http://ceres.ca.gov/ceqa/

Federal Aviation Administration and San Luis Obispo County, *San Luis Obispo County Airport Master Plan, Final Environmental Assessment/Environmental Impact Report*, 1998. Available at: San Luis Obispo County Regional Airport.

San Luis Obispo County, *San Luis Obispo County Airport, Stormwater Pollution Prevention Plan*. Airport WDID: 3-401002529, July 2005. Available at: San Luis Obispo County Regional Airport.

San Luis Obispo County, *San Luis Obispo County Regional Airport Master Plan*, 2004. Available at: San Luis Obispo County Regional Airport.

San Luis Obispo County, *Solid Waste Regulations (Section 8.12.400)*, 2005. Available at: http://www.sloclerkrecorder.org/CountyCode/_DATA/TITLE08/Chapter_8_12__SOLID_WASTE_MANAGEME/index.html.

State Water Resources Control Board (SWRCB), *Geotracker Database,* 2005. Available at: http://www.geotracker.swrcb.ca.gov.

United States Department of Transportation, Federal Aviation Administration (FAA), Order 1050.1E, *Environmental Impacts: Policies and Procedures,* 2004. Available at: San Luis Obispo County Regional Airport.

United States Department of Transportation, Federal Aviation Administration (FAA), Order 5050.4A*, Airport Environmental Handbook,* 1985. Available at: San Luis Obispo County Regional Airport.

United States Department of Transportation, Federal Aviation Administration (FAA), *Order 5200.5A, Waste Disposal Sites on or Near Airports,* 1990. Available at: San Luis Obispo County Regional Airport.

Whittlesey, Mary, Solid Waste Coordinator, San Luis Obispo County Department of Public Works, *Memorandum to Steven McMasters commenting on NOP for Draft Supplemental EIR for San Luis Obispo County Regional Airport Terminal Project*, August 25, 2004. Available at: San Luis Obispo County Regional Airport.

Construction

San Luis Obispo County, *San Luis Obispo County Regional Airport Master Plan*, 2004. Available at: San Luis Obispo County Regional Airport.

Governor's Office of Planning and Research (OPR), *CEQA Statutes and Guidelines,* 2005. Available at: http://ceres.ca.gov/ceqa/

San Luis Obispo County Air Pollution Control District, *CEQA Air Quality Handbook, A Guide to Assessing the Air Quality Impacts of Projects Subject to CEQA Review,* 2003. Available at: http://www.slocleanair.org/business/pdf/handbook.pdf.

United States Department of Transportation, Federal Aviation Administration (FAA), *Advisory Circular 150.5370-10-B, Standards for Specifying Construction of Airports,* 2005. Available at: http://www.faa.gov/arp/publications/acs/5370_10b.pdf.

United States Department of Transportation, Federal Aviation Administration (FAA), Order 1050.1E, *Environmental Impacts: Policies and Procedures,* 2004. Available at: San Luis Obispo County Regional Airport.

United States Department of Transportation, Federal Aviation Administration (FAA), Order 5050.4A*, Airport Environmental Handbook,* 1985. Available at: San Luis Obispo County Regional Airport.

Geology and Seismicity

California Division of Mines and Geology (CDMG), *San Luis Obispo Sheet, Geologic Map of California*, 1958. Available at: San Luis Obispo County Regional Airport.

California Division of Mines and Geology and U.S.G.S., *Probabilistic Seismic Hazard Assessment for the State of California, DMG Open-file Report 96-08 and USGS Open-file Report 96-706*, 1996. Available at: San Luis Obispo County Regional Airport.

California Geologic Survey, *California Geomorphic Provinces,* 2002. Available at: San Luis Obispo County Regional Airport.

California Geologic Survey, *Probabilistic Seismic Hazards Assessment Page,* 2005. Available at: www.consrv.ca.gov/cgs/rghm/pshamap/pshamap.asp.

California Integrated Seismic Network (CISN), *M 6.5 Earthquake Near San Simeon, CA,*2005. Available at: www.cisn.org/special/evt.03.12.22/.

Hart, E. W., *Fault-Rupture Hazard Zones in California: Alquist-Priolo Special Studies Zones Act of 1972 with Index to Special Studies Zones Maps, California Division of Mines and Geology, Special Publication 42, 1990*, revised and updated 1997. Available at: San Luis Obispo County Regional Airport.

Jennings, C.W., *Fault Activity Map of California and Adjacent Areas with Locations and Ages of Recent Volcanic Eruptions California Division of Mines and Geology, Geologic Data Map No. 6*, 1994. Available at San Luis Obispo County Regional Airport.

Cumulative Impacts

City of San Luis Obispo, *Draft San Luis Obispo Airport Area Specific Plan,* 2005. Available at: http://www.slocity.org/communitydevelopment.asp.

City of San Luis Obispo, *Final Environmental Impact Report for the Four Creeks Rezoning Project,* October 2005. Available at: http://www.slocity.org/communitydevelopment/docsandforms/envirodocs.asp.

City of San Luis Obispo, *Final Program Environmental Impact Report for the Airport Area and Margarita Area Specific Plans and Related Facilities Master Plans,* 2003. Available at: http://www.slocity.org/communitydevelopment.asp.

Council on Environmental Quality (CEQ), Code of Federal Regulations (CFR) *Title 40, Section 1508.7, Cumulative Impact*, November 1978. Available at: http://ceq.eh.doe.gov/nepa/regs/ceq/1508.htm#1508.7.

Federal Aviation Administration and San Luis Obispo County, *San Luis Obispo County Airport Master Plan, Final Environmental Assessment/Environmental Impact Report*, 1998. Available at: San Luis Obispo County Regional Airport.

Governor's Office of Planning and Research (OPR), *CEQA Statutes and Guidelines,* 2005. Available at: http://ceres.ca.gov/ceqa/

San Luis Obispo County, *San Luis Obispo County Airport Land Use Plan,* amended 2005. Available at San Luis Obispo County Department of Planning and Building.

San Luis Obispo County, *San Luis Obispo County Regional Airport Master Plan*, 2004. Available at: San Luis Obispo County Regional Airport.

United States Department of Transportation, Federal Aviation Administration (FAA), Order 1050.1E, *Environmental Impacts: Policies and Procedures,* 2004. Available at: San Luis Obispo County Regional Airport.

United States Department of Transportation, Federal Aviation Administration (FAA), Order 5050.4A*, Airport Environmental Handbook,* 1985. Available at: San Luis Obispo County Regional Airport.

6. Alternatives Analysis

No references cited.

CHAPTER 11
Glossary

AASP – Airport Area Specific Plan

ACHP – Advisory Council on Historic Preservation

ACTIVITY – Used in aviation to refer to any kind of movement, e.g., cargo flights, passenger flights, or passenger enplanements. Without clarification it has no specific meaning.

ADT – Average Daily Traffic

AHERA – Asbestos Hazards Emergency Response Act

AIP – Airport Improvement Program. A federal program that provides grants-in-aid for certain types of airport development projects, including construction of runways, taxiways, aircraft parking aprons and public areas in airport terminals. The program also provides grants for land acquisition connected with airport development, including clear zones and approach protection.

AIR BASIN – California's South Central Coast Air Basin

AIR CARGO – All commercial air express and air freight with the exception of air mail and air parcel post.

AIR TAXI – An air carrier certificated in accordance with FAR Part 135 and authorized to provide, on demand, public transportation of persons and property by aircraft. Generally operate small aircraft for hire for specific trips.

AIRCRAFT OPERATIONS – The airborne movement of aircraft. An aircraft arrival (landing) or departure (takeoff) constitutes an aircraft operation at an airport.

AIRCRAFT TYPE – A distinctive model of aircraft, as designated by the manufacturer.

AIRFIELD – A defined area on land or water including any buildings, installations, and equipment intended to be used either wholly or in part for the arrival, departure, and movement of aircraft.

AIRSIDE – That portion of the airport facility where aircraft movements take place; airline operations areas; and areas that directly serve the aircraft (taxiway, runway, maintenance, and fueling areas). See LANDSIDE.

ALL-CARGO CARRIER – An air carrier certificated in accordance with FAR Part 121 to provide scheduled air freight, express, and mail transportation over specified routes, as well as conduct nonscheduled operations that may include passengers.

ALP – Airport Layout Plan. A plan drawing(s) that delineates all areas of an airport used or proposed for use by the airport. The plan indicates the location and function of existing and proposed airport facilities, including both aviation and non-aviation uses.

ALUC – Airport Land Use Commission

ALUP – Airport Land Use Plan

ALS – Approach Lighting System

AMBIENT NOISE LEVEL – The total noise in a given environment independent of a specific noise source to be measured; "residual" or "background" noise.

ANCA – Airport Noise and Capacity Act of 1990

ANSI – American National Standards Institute

APCD – San Luis Obispo County Air Pollution Control District

APE – Area of Potential Effect. The area in which cultural resources could be affected by a proposed project.

APRON – A defined area on the airside of a terminal building where aircraft are maneuvered and parked and where activities associated with the handling of flights can be carried out. (Also known as RAMP.)

APU – Auxiliary Power Unit

ARFF – Aircraft Rescue and Firefighting

ATC – Air Traffic Control. Management of air traffic to ensure safe, orderly, and expeditious operations. Service is provided by the FAA.

ATCT – Airport Traffic Control Tower

AVGAS – Aviation Gasoline. Fuel used in reciprocating (piston) aircraft engines.

B – Boron

BAGGAGE – The personal property or other articles of a passenger transported in connection with her/his journey. Unless otherwise specified, it includes both checked and unchecked baggage.

BASELINE – With respect to an environmental factor, the amount of pollution or impact present in the ambient conditions. With respect to forecasts, the probable level of activity if unusual shifts in trend do not occur.

BASIN PLAN – Water Quality Control Plan

BAT – Best Available Technology

BCT – Best Conventional Pollutant Control Technology

BIRD STRIKE – Bird striking in-flight aircraft.

BMPs – Best Management Practices

BOD – Biological Oxygen Demand

BTU – British Thermal Unit

CAA – Clean Air Act

CAAA – Clean Air Act Amendments

CAAQS – California Ambient Air Quality Standards

CAFE – Corporate Average Fuel Economy

Cal/OSHA – California Occupational Safety and Health Administration

CALTRANS – California Department of Transportation

CAP – Clean Air Plan

CAPACITY – The maximum volume that an airport element can accommodate without saturation.

CARB – California Air Resources Board

CASP – California Aviation System Plan

CBC – California Building Code

CBRA – Coastal Barrier Resources Act

CBRS – Coastal Barrier Resources System

CCAA – California Clean Air Act

CCR – California Code of Regulations

CDF – California Division of Forestry

CDFG – California Department of Fish and Game

CDPF – Catalyzed Diesel Particulate Filters

CEDDS – Complete Economic and Demographic Data Source

CEQ REGULATIONS – The Council on Environmental Quality (CEQ) was established by NEPA (see NEPA) and given the responsibility for developing federal environmental policy and overseeing the implementation of NEPA by federal agencies.

CEQA – California Environmental Quality Act

CERCLA – Comprehensive Environmental Response, Compensation, and Liability Act

CESA – California Endangered Species Act

CFR – Code of Federal Regulations

CGS – California Geologic Survey

CHARTER – A non-scheduled flight offered by either a supplemental or certificated airline.

CHP – California Highway Patrol

CISN – California Integrated Seismic Network

CL – Chlorine

CNDDB – California Natural Diversity Data Base

CNEL – Community Noise Equivalent Level

CNG – Compressed Natural Gas

CNPS – California Native Plant Society

CO – Carbon Monoxide

COD – Chemical Oxygen Demand

COMMERCIAL AIR CARRIER – An air carrier certificated in accordance with FAR Parts 121 or 127 to conduct scheduled services on specified routes. These air carriers may also provide nonscheduled or charter services as a secondary operation.

COMMUNITY NOISE EQUIVALENT LEVEL (CNEL) – The Community Noise Equivalent Level is similar to the DNL except that it includes an approximate 5-dBA "penalty" for evening noise (7:00 p.m. to 10:00 p.m.) in addition to the 10-dBA "penalty" for nighttime noise.

CONTROL TOWER – A central operations facility in the terminal air traffic control system consisting of a tower cab structure (including an associated IFR room if radar-equipped) using air/ground communications and/or radar, visual signaling, and other devices to provide safe and expeditious movement of terminal air traffic (see ATC).

CORPS – United States Army Corps of Engineers

COUNTY – San Luis Obispo County

CRJ – Canadair Regional Jet

CWA – Clean Water Act

CZMA – Coastal Zone Management Act

CZMP – Coastal Zone Management Plan

DAY-NIGHT NOISE LEVEL (DNL) – The day-night average noise level, is based on human reaction to cumulative noise exposure over 24 hours. To calculate the DNL, noise between 10:00 p.m. and 7:00 a.m. is weighted by adding 10 dBA to take into account the greater annoyance of nighttime noise.

DECIBEL (dB) – The standard unit of noise measurement, which expresses the relative difference in energy between acoustic signals in terms of the common logarithm of the ratio between the signals. Ten units represents a doubling of acoustic energy.

DECIBEL A-WEIGHTED (dBA) – Environmental noise is usually measured in A-weighted decibels (dBA). A dBA is a decibel corrected for the variation in frequency response of the human ear at commonly encountered noise levels.

DEPLANEMENT – A passenger disembarkation from a flight.

DHC8 – DeHavilland Dash 8

DHS – California Department of Health Services

DNL (DAY-NIGHT AVERAGE SOUND LEVEL) – The energy-averaged sound level (L_{eq}) measured over a period of 24 hours, with a 10-decibel penalty applied to nighttime (10:00 p.m. to 7:00 a.m.) sound levels to account for increased annoyance by sound during the night hours.

DOC – Diesel Oxidation Catalysts

DOI – U.S. Department of the Interior

DOT – Department of Transportation

DPM – Diesel-Powered Motor

DTSC – Department of Toxic Substances Control

DWR – Department of Water Resources

EA – Environmental Assessment. An analysis of the environmental effects of a proposed action prepared pursuant to the National Environmental Policy Act (see NEPA) and its implementing guidelines that provides a federal agency sufficient evidence to determine whether an Environmental Impact Statement (see EIS) is required. The EA serves as the basis for the agency's Finding of No Significant Impact (see FONSI) if an EIS is determined not to be necessary.

EDMS – Emission and Dispersion Modeling System

EIR – Environmental Impact Report. A document prepared by an agency pursuant to the California Environmental Quality Act (see CEQA) that discloses the significant environmental impacts of a proposed project and that identifies alternatives to the project as well as measures to mitigate or avoid the impacts.

EIS – Environmental Impact Statement. An analysis of a proposed action, prepared pursuant to the National Environmental Policy Act (see NEPA) and its implementing guidelines, that discloses the significant environmental impacts of the action and all reasonable alternatives to the action. The EIS also identifies mitigation measures not included in the action or alternatives.

EMAS – Engineered Material Arresting System

EM2 – Embraer Brasilia 120

EMS – Emergency Medical Service

ENERGY-EQUIVALENT NOISE LEVEL (L_{eq}) – The equivalent steady-state sound level that, in a stated period, would contain the same acoustic energy as the actual time-varying sound level during the same period.

ENPLANEMENT – A passenger boarding of a flight.

EO – Executive Order

EPA – U.S. Environmental Protection Agency

ERF – Emergency Response Facility

ESA – Environmental Science Associates

ESU – Evolutionary Significant Unit

FAA – Federal Aviation Administration

FACILITY – A term commonly employed when referring to an area or areas and/or system(s) where particular handling functions take place.

FAEED – Federal Aviation Administration's Aircraft Engine Emission Database

FAT – Fresno Yosemite International Airport

FBO (FIXED BASE OPERATOR) – An operator of one or more aircraft who has a permanent fixed aviation service facility at an airport. FBOs usually engage in aviation activity such as flight instruction, fuel sales, repairs, aircraft rental and sales, and air charter.

FCT – Federal Contract Tower

FEMA – Federal Emergency Management Agency

FESA – Federal Endangered Species Act

FICON – Federal Interagency Committee on Noise

FIRM – Flood Insurance Rate Map

FLEET MIX – The proportion of aircraft types or models at an airport (see also Aircraft Mix).

FLOODPLAIN – A nearly level alluvial plain that borders a stream and is subject to flooding unless protected artificially.

FLOW – Direction of activity.

FPPA – Farmland Protection Policy Act

FTA – Federal Transit Administration

FWCA – Fish and Wildlife Coordination Act

GA – General Aviation

GATE – A point of passenger access to and from parking apron areas and aircraft from a terminal building.

GATE HOLDING AREAS – An area adjacent to a gate used for assembling departing passengers for a flight departure.

GENERAL AVIATION (GA) – All civil aviation activity except that of air carriers and air taxis certificated in accordance with FAR Parts 121, 123, 127, and 135. The types of aircraft used in general aviation activities cover a wide spectrum, from corporate multi-engine jet aircraft piloted by professional crews to amateur-built single-engine piston acrobatic planes, balloons, and dirigibles.

GENERAL AVIATION AIRCRAFT – All civil aircraft except those owned and classified as air carrier or air taxi.

GIS – Geographic Information System

GPD – Gallons per day

GROUND SUPPORT EQUIPMENT – Equipment used for servicing aircraft on the apron.

GROUNDWATER – All subsurface water (below soil/ground surface), distinct from surface water.

GSE – Ground support equipment

HAZARDOUS MATERIAL – a substance or combination of substances, that, because of quantity, concentration, or physical, chemical or infectious characteristics, may either: (1) cause or significantly contribute to an increase in mortality or an increase in serious, irreversible, or incapacitating, illness; or (2) pose a substantial present or potential hazard to human health or environment when improperly treated, stored, transported or disposed of, or otherwise managed.

HAZARDOUS WASTE – Hazardous wastes are hazardous materials that no longer have practical use, such as substances that have been discarded, spilled, or contaminated, or that are being stored temporarily prior to proper disposal.

HD 2007 – 2007 Highway Diesel program

HIGH-SPEED TAXIWAY – An exit taxiway with design geometrics allowing use at high speeds.

HMBP – Hazardous Materials Business Plan

HMMP – Hazardous Materials Management Plan

HSWA – Hazardous and Solid Waste Act

HUD – United States Department of Housing and Urban Development

HWCL – Hazardous Waste Control Law

IATA – International Air Transport Association

IFR – Instrument Flight Rule

INM – Integrated Noise Model

IWTP – Industrial Wastewater Treatment Plant

J31 – Jetstream 31

JET A – Fuel used by turbine-powered aircraft.

KILOWATT-HOURS (kWh) – A kWh is a unit of electrical energy, and one kWh is equivalent to 10,238 Btu, taking into account initial conversion losses (i.e., from one type of energy, e.g. chemical, to another type of energy, e.g. mechanical) and transmission losses.

LANDSIDE – That portion of the airport utilized for all activities except aircraft movement (see AIRSIDE). The landside generally includes the following elements: vehicular access roads and parking, passenger terminal, cargo terminal, aircraft hangars, FBOs, fuel storage area, CFR equipment, and maintenance facilities.

LAX – Los Angeles International Airport

LCP – Local Coastal Program

L_{dn} – see DNL.

L_{eq} (EQUIVALENT SOUND LEVEL) – The equivalent A-weighted sound level for a specified period of time.

L_{max} – Maximum A-Weighted Sound Level

LOAD – Any item carried in an aircraft other than those included in the basic operating weight.

LOS – Level of Service

LRTP – Long Range Transportation Plan

LTO – Landing - Takeoff Cycle

LUST – Leaking Underground Storage Tank

MALSR – Medium-Intensity Approach Lighting System With Runway Alignment Indicator Lights.

MASTER PLAN – A long-range comprehensive plan to guide airport development.

MCE – Maximum Credible Earthquake

MG – Million Gallons

MOBILE SOURCE – Refers to a category of air pollutant emissions sources. This category includes those sources that routinely move from place to place. Examples include aircraft, automobiles, trucks, trains, ships, and bulldozers.

MOU – Memorandum of Understanding

MOVEMENT – Usually synonymous with the term operation (i.e., a take-off or a landing).

MSDSs – Material Safety Data Sheets

MSL – Mean Sea Level

N - Nitrogen

NA - Sodium

NAAQS – National Ambient Air Quality Standards

NAGPRA – Native American Graves Protection and Repatriation Act

NAHC – National American Heritage Commission

NASA – National Aeronautics and Space Administration

NEM – Noise Exposure Maps

NEPA – National Environmental Policy Act

NESHAP – National Environmental Standard Hazardous Air Pollutants

NFPA – National Fire Protection Association

NGVD – National Geodetic Vertical Datum

NH3 – Ammonia

NHPA – National Historic Preservation Act

NMFS – National Marine Fisheries System

NO – Nitric Oxide

NOAA – National Oceanic and Atmospheric Administration

NO_X – Nitrous Oxide

NO_2 – Nitrogen Dioxide

NOI – Notice of Intent

NOISE ABATEMENT – A procedure for the operation of aircraft at an airport that minimizes the impact of noise on the environs of the airport.

NOISE CONTOUR – A line on a map connecting points of equal noise exposure.

NPDES – National Pollution Discharge Elimination System

NPS – National Park Service

NRCS – National Resources Conservation Service

NRHP – National Register of Historic Places

NTSB – National Transportation Safety Board

OAG - Official Airline Guide

ODALS – Omni-Directional Approach Lighting System

OEHHA – California Office of Health Hazard Assessment

OFA – Object Free Area

OFZ – Obstacle Free Zone

OPERATIONS – See AIRCRAFT OPERATIONS.

OSHA – Occupational Safety and Health Administration

O_3 – Ozone

Pb – Lead.

PCB – Polychlorinated Biphenyl

PCPI – Per Capita Personal Income

PFC – Passenger Facility Charge

PG&E – Pacific Gas and Electric Company

PM-10 – Suspended Particulate Matter

PPM – Parts Per Million

PRC – Public Resources Code

RADIOSONDE – An instrument for gathering and transmitting meteorological data from the upper atmosphere, carried aloft by a balloon.

RAILS – Runway Alignment Indicator Light System

RAMP – See APRON.

RCRA – Resource Conservation and Recovery Act

REA – Registered Environmental Assessor

REIL – Runway End Identifier Lights

RJ – Regional Jet

RMPP – Risk Management and Prevention Program

ROG – Reactive Organic Gases

RPM – Revenue Passenger Mile

RPZ – Runway Protection Zone

RRP – Riparian Restoration Plan

RSA – Runway Safety Area

RUNUP – A procedure for checking aircraft engine performance prior to take-off. For jet aircraft, engine run-ups are routinely performed following certain types of maintenance. Aircraft run-ups may involve one or more engines and may involve engine settings ranging from "idle" to "full power."

RWQCB – Regional Water Quality Control Board

SAA – Stream Alteration Agreement

SARA – Superfund Amendments and Reauthorization Act

SBP – San Luis Obispo County Regional Airport

SCAQMD – South Coast Air Quality Management District

SEL – Sound Exposure Level

SF – Square Feet

SF3 – Saab 340

SFO – San Francisco International Airport

SHPO – State Historic Preservation Officer

SID – Standard Instrument Departure

SIP – State Implementation Plan

SLCUSD – San Luis Obispo Unified School District

SLO – San Luis Obispo

SLOCAPCD – San Luis Obispo County Air Pollution Control District

SLOCOG – San Luis Obispo Council of Governments

SOCA – Sacramento Old City Association

SO_x – Sulfur Oxide

SO_2 – Sulfur Dioxide

SO4 - Sulfide

SOCIOECONOMIC – Pertaining to the population and economic characteristics of a region.

SR – State Route

SRRE – Source Reduction and Recycling Element

STATIONARY SOURCE – Refers to a category of air pollutant emission sources. This category includes those sources that routinely remain in one place. Examples include power plants, boilers, and storage tanks.

SWPPP – Storm Water Pollution Prevention Plan

SWRCB – State Water Resources Control Board

TAC – Toxic Air Contaminants

TAXIWAY – A defined path over which aircraft can taxi from one airfield to another.

TCP – Native American Traditional Culture Properties

TDS – Total Dissolved Solids

TERMINAL, PASSENGER – A building or facility located between curbside and apron within which passenger and baggage processing takes place.

THRESHOLD – The physical end of runway pavement.

THPO – Tribal Historic Preservation Officer

TIP – Transportation Improvement Plan

TOC – Total Organic Compound

TPH – Total Petroleum Hydrocarbons

TPHP – Typical Peak Hour Passengers

TRB – Transportation Research Board

TSCA – Toxic Substances Control Act

TSM – Transportation System Management

TSS – Total Suspended Solids

UBC – Uniform Building Code

UPS – United Parcel Service

URL – Urban Land

USDA – United States Department of Agriculture.

USC – United States Code

USFWS – United States Fish and Wildlife Service

USGS – United States Geological Survey

UST – Underground Storage Tank

VASI – Visual Approach Slope Indicator

VFR – Visual Flight Rule

VMT – Vehicle Miles Traveled.

VOC – Volatile Organic Compound

WETLANDS – Wetlands as defined under the Clean Water Act (33 CFR 328.3[b]; 40 CFR 230.3[t]) are "...those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas."

WHR – Wildlife Habitat Relationships System

APPENDIX A

Aviation Forecasts and Facility Requirements

Aviation Forecasts

The Airport has experienced steady growth in aviation activity over the past 20 years, and this growth is projected to continue for the next two decades. The Airport Master Plan demand forecasts identified operations that may be reasonably expected through the year 2023. It is recognized that it is impossible to predict with certainty the year-to-year fluctuations of aviation activity since aviation activity is affected by many influences at the national, regional, and local level. Thus, these forecasts of aviation activity are used to serve as guidelines in identifying the future demand at SBP. The need for improvements at SBP is based on aviation forecasts and is contained in the *San Luis Obispo County Regional Airport Master Plan* (2005). The following discussion summarizes this study.

National Aviation Trends

The FAA annually publishes a national aviation forecast that includes projected aviation activity for air carriers, air taxi/commuters, general aviation, and the military. The forecasts are prepared to meet budget and planning needs of the constituent units of the FAA and to provide information that can be used by state and local authorities, the aviation industry, and the general public. The forecasts use the economic performance of the United States as an indicator or future aviation industry growth. Nationwide, the FAA expects a continued modest recovery and a return to pre-September 11 enplanement levels in 2005 or 2006. Locally, 2004 enplanements surpassed pre-September 11 enplanement levels. Overall, forecasts indicate that large air carriers will account for most of the decline, while regional airlines will continue to grow. Air cargo traffic is expected to grow faster than passenger traffic. General aviation is expected to achieve low-to-moderate increases, with most of the growth within the business/corporate sector. FAA forecasts assume a post-September 11 recovery similar to that following other major wars, strikes, or financial crises. However, the current forecasts were prepared prior to the Iraq War, which also has had a negative effect on the commercial airline industry.

The events of September 11, 2001 had a profound effect on U.S. airlines. While domestic capacity was up 0.9 percent for the entire year, it dropped 19.0 percent in September, wiping out most of the gains over the previous 11 months. Prior to this event, the commercial aviation industry recorded its seventh consecutive year of strong traffic growth in 2000. Domestic passenger enplanements declined 1.8 percent in 2001, while domestic load factors averaged 69.7 percent, down 1.2 percent from the previous year. Orders for both larger commercial jets and regional jets declined following September 11.

Regional jets are, and will continue to be, the fastest growing segment of the aviation industry and the demand for narrow body aircraft will continue to outpace demand for wide body aircraft (107 vs. 21 aircraft per year, respectively). Overall, the FAA's projection for commercial passenger enplanements indicates relatively strong growth with domestic enplanements growing at 3.1 percent per year over the 12-year forecast period.

Regional/Commuter Airlines

The regional/commuter airline industry, which is defined as air carriers providing regularly scheduled passenger service and use fleets composed primarily of aircraft with fewer than 70 seats, continues to be the strongest growth sector of the commercial air carrier industry. The impact of September 11 on regional/commuter carriers was generally positive because major carriers transferred many of their routes to their regional partners.

The growth of regional/commuter airlines is expected to be greater than that of the larger commercial air carriers for market areas such as SBP. The introduction of new state-of-the-art aircraft, especially large high-speed turboprops and regional jets with ranges of up to 1,000 miles, opens up new opportunities for growth in non-traditional markets. However, the regional airline industry is expected to continue to feed traffic to the major and national carriers even as the regional/commuter airlines expand into markets with longer route segments.

Because of the trend toward using larger aircraft with longer ranges, regional/commuter revenue passenger miles (RPMs) are anticipated to increase at a faster rate than enplanements. These trends are expected to open up additional markets for the regional/commuter airlines as the average passenger trip length increases during the forecast period.

The FAA expects that the average size of aircraft in the regional/commuter airline fleet will increase during the forecast period due to the introduction of regional jet aircraft, many of which fall into the "50 to 70 seat" category. The average number of seats per aircraft is projected to increase by almost 90 percent over the forecast period from 32 seats per departure in 2002/2003 to 60 seats per departure in 2023.

General Aviation

Following more than a decade of decline, the general aviation industry was revitalized with the passage of the *General Aviation Revitalization Act* in 1994 (federal legislation which limits the liability on general aviation aircraft to 18 years from the date of manufacture). This reduction in product liability renewed interest in the manufacture of general aviation aircraft. However, the continued growth in general aviation slowed considerably in 2001 and 2002 following the economic recession and then the grounding of thousands of general aviation aircraft following September 11. This resulted in a corresponding reduction in both shipments of general aviation aircraft and industry billings. According to the General Aviation Manufacturers Association (GAMA), business jet shipments decreased by 5.6 percent in 2002 compared to 2001, the first reported decline since 1996, and other sectors were down even more. The Aerospace Industries Association of America (AIAA) projected that industry billings would decline by 50 percent in 2002, the first reported decline in billings since 1990.

The total number of pilots at the end of 2002 had increased slightly over 2001, with only student pilots decreasing significantly in 2002, down 8.9 percent from 2001. Much of this decline is attributed to the restrictions placed on flight schools following September 11. However, those events have not had the same negative impact on the business/corporate side of general aviation. In fact, the increased security measures placed on commercial flights has increased interest in

fractional and corporate aircraft ownership, as well as on-demand charter flights for short-haul routes. The most notable trend in general aviation is the continued strong use of general aviation aircraft for business and corporate uses.

In 2001, active general aviation aircraft decreased 2.8 percent from the previous year. This was the second consecutive year of recorded decline, following five consecutive years of growth. Single-engine piston aircraft continue to dominate the fleet, accounting for 68.6 percent of the total active fleet in 2001. The FAA forecast general aviation aircraft to increase at an average annual rate of 0.7 percent from 2001 to 2014, reaching 229,490 by 2014. Growth in the piston fleet is expected to slowly recover (single-engine) or decline slightly (multi-engine). However, the turbine-powered fleet is expected to grow at an average annual rate of 2.5 over the forecast period. Turbojet aircraft are expected to provide the largest portion of this growth, with an annual average growth rate of 3.6 percent.

Airport Service Area

The service area of an airport is defined by its proximity to other airports providing similar services. The closest primary commercial service airports to SBP are Santa Maria Public Airport and Santa Barbara Municipal Airport, which are approximately 35 and 110 miles south of SBP, respectively. While Santa Maria is served only by regional/commuter airlines, Santa Barbara has jet service to several destinations. The commercial service area for SBP covers the geographic areas of San Luis Obispo County, northern Santa Barbara County and southern Monterey County.

FAA planning criteria define the community service area for a general aviation facility based on a ground transportation travel time of 30 minutes from the nearest existing public use airport. Approximately half of the general aviation aircraft registered in San Luis Obispo County is based at SBP.

Commercial Service Forecasts

Commercial service activity at SBP consists of regional/commuter airlines or small certificated air carriers and air taxi/commercial operators.

To determine the types and sizes of facilities necessary to properly accommodate present and future aviation activity, the Airport Master Plan provides forecasts for two basic elements: (1) annual enplaned passengers; and (2) annual aircraft operations.

Air Service

Historical passenger enplanements for SBP and the annual percentage change since 1992 are presented in Table A-1, along with U.S. domestic passenger enplanements and local percentage of the national total (market share). SBP's share of the U.S. market has increased from 0.023 percent to 0.027 percent of the national domestic passenger enplanements. Based on 2005 airline schedules, SBP supports 21 daily departures to four markets.

Enplanement Forecasts

As part of the Master Plan process, a series of enplanement forecasts was developed using different forecasting methods (i.e., low-range, mid-range, and high-range) and each forecast was evaluated to determine its validity and reliability. Based on these evaluations, the Airport Master Plan concluded that the most reliable enplanement forecast would be based on a mid-range forecast that averaged the various forecasts examined (see Table A-2). The selected planning forecast represents an average annual growth rate of 1.4 percent to the year 2008, 3.2 percent from 2008 to 2013, and 2.6 percent from 2013 to 2023. The FAA has acknowledged and approved the forecasts as presented in the Airport Master Plan.

Fleet Mix and Operations Forecasts

The commercial service fleet mix is a key factor in airport planning, including the identification of critical aircraft, stage length capabilities, and potential terminal area gate configurations. The Airport's Master Plan consultant based the development of fleet mix projections for SBP on the changes that have taken place over the past few years in the general fleet mix and the most recent information available on the new aircraft being purchased by the regional/commuter airlines serving SBP. The current trend is for regional/commuter airlines to transition to advanced turboprop aircraft and small regional jet aircraft, which have greater seating capacity, stand-up headroom, and lower operating costs.

Three regional airlines provide scheduled air service at SBP: United Express (Skywest), American Eagle, and America West (Mesa). Skywest Airlines operates the 30-seat Embraer Brasilia 120, American Eagle operates the 34-seat Saab 340 and the 44-seat ERJ-145, and Mesa Airlines operates the 50-seat Canadair Regional Jet (CRJ-200). The airlines anticipate adding the CRJ-700 (64-70 seats) as they transition to all regional jet fleets.

The FAA views the introduction of the regional jet as the most significant change in the future regional/commuter airline fleet mix. The smaller 30- to 34-seat turboprops, currently 80% of the fleet at SBP, are projected to be phased out by 2013.

The long-term outlook in fleet mix is dependent on traffic growth, technological improvements, and the availability of airfield facilities that meet aircraft demands. Table A-3 provides the projected fleet mix, which has been used to forecast annual departures and total operations by the scheduled passenger airlines. As the fleet mix transitions to larger aircraft, the average number of

TABLE A-1
HISTORICAL PASSENGER ENPLANEMENTS,
ANNUAL CHANGE, AND MARKET SHARE

Year	SBP Passenger Enplanements	Annual Change (%)	U.S. Domestic Enplanements (x 1000)	SBP Market Share (%)
1992	107,851	+10.1	464,700	0.023
1993	109,334	+1.4	470,400	0.023
1994	120,949	+10.6	511,300	0.024
1995	132,337	+9.4	531,100	0.025
1996	137,651	+4.0	558,100	0.025
1997	154,932	+12.6	577,800	0.027
1998	149,507	-3.5	590,400	0.025
1999	152,309	+1.9	610,900	0.025
2000	158,602	+4.1	639,800	0.025
2001	152,649	-3.8	626,700	0.024
2002	155,177	+1.7	576,800	0.027
2003	149,354	-3.7	642,000	0.023
2004	163,203	+9.3	688,000	0.027

SOURCE: San Luis Obispo County Regional Airport Master Plan, 2005; FAA Aerospace Forecasts Fiscal Years 2005 through 2016, 2005.

TABLE A-2
PASSENGER ENPLANEMENT FORECAST AT SBP

Year	Number of Passenger Enplanements
2004[a]	163,203
2008	198,000
2013	232,000
2023	301,100

[a] 2004 actual enplanements

SOURCE: San Luis Obispo County Regional Airport Master Plan, 2005.

TABLE A-3
SCHEDULED AIRLINE FLEET MIX AND OPERATIONS FORECASTS AT SBP

Fleet Mix Seating Capacity	2002/2003	2008	2013	2023
<50 seats (32 average) EMB 120, Saab 340)	80%	40%	0%	0%
50-70 seats (60 average) (CRJ-200, CRJ-700, ERJ-145)	20%	60%	100%	100%
Totals	100%	100%	100%	100%
Average Seats Per Departure	32	44	55	60
Boarding Load Factor	66%	66%	66%	66%
Enplanements Per Departure	21	29	36	40
Annual Enplanements	155,177	198,000	232,000	301,000
Annual Departures	7,355	6,800	6,500	7,500
Annual Operations	14,710	13,600	13,000	15,000

SOURCE: San Luis Obispo County Regional Airport Master Plan, 2005.

seats and the number of enplanements per departure increase. The boarding load factor is not projected to change.

Air Cargo Forecasts

There are currently two all-cargo airlines operating at SBP: West Air (Fed Ex) and Ameriflight (UPS). West Air operates Cessna 208 caravans, while Ameriflight operates various aircraft (including: Beech 1900 and 99, Piper Navajo, Chieftain, and Lance). Since 1997, enplaned cargo at SBP has grown at an average annual rate of 2.4 percent. Applying this annual growth rate to the amount of enplaned cargo in 2002 (1,242,592 pounds), yields annual totals of about 1,400,000 pounds by 2008, 1,600,000 pounds by 2013, and 2,000,000 pounds by 2023.

General Aviation

Based Aircraft and Fleet Mix

The number of based aircraft is the most basic indicator of general aviation demand. Table A-4 provides a summary of based aircraft at SBP since 1993. According to the FAA, there were 596 aircraft registered in the county in 2003, compared to 520 registered in 1993. The airport's

TABLE A-4
REGISTERED AND BASED GENERAL AVIATION (GA) AIRCRAFT AT SBP

Year	SBP Based Aircraft	SLO County Registered Aircraft	Market Share Registered Aircraft (County)	U.S Active GA Aircraft	Market Share U.S. Active GA Aircraft
Actual					
1993	259	520	50%	177,719	0.15%
1994	264	503	52%	172,936	0.15%
1995	263	508	52%	188,089	0.14%
2003	301	596	51%	211,370	0.14%

SOURCE: San Luis Obispo County Regional Airport Master Plan, 2005.

market share has remained fairly constant and was 51 percent in 2003. The total number of based aircraft has grown steadily over the past decade.

The various forecasting methods were combined to produce a preferred planning forecast that closely follows the historical growth rate. The resulting forecast provides a net increase of about 100 aircraft through the year 2023. According to the Master Plan, the fleet composition of general aviation aircraft based at SBP is expected to remain primarily single-engine aircraft, although single-engine aircraft will decrease from about 80 percent to about 70 percent by 2023. The resulting mix is comparable to estimates of the future U.S. fleet provided by the FAA and reflects the trend toward larger, more sophisticated aircraft (e.g., multi-engine and jets). The based aircraft fleet mix forecasts for SBP are summarized in Table A-5.

Annual Operations

General aviation operations are classified as either local or itinerant. A local operation is defined as a take-off and landing at SBP. Itinerant operations are defined as aircraft that have SBP as an origination or destination point.

In the past decade, general aviation operations at SBP increased slightly, as the airport's market share fluctuated between 0.20 and 0.25 percent. Table A-6, presents the FAA projections for operations at towered airports, with local general aviation operations totals and market shares. Because of the variability, a mid-range forecast was chosen which reflects a constant market share of 0.25%. This results in a relatively modest growth projection for general aviation operations at SBP.

TABLE A-5
BASED AIRCRAFT FLEET MIX FORECAST FOR SBP

Year	Total	Single-Engine	Multi-Engine[a]	Jets	Helicopters
Actual					
2003	301	241	44	9	7
Forecast[b]					
2008	320	246	53	13	8
2013	350	259	64	18	9
2023	400	282	80	28	10

a Multi-engine category includes turboprops
b Forecast reflects combined forecast envelope as discussed in the Master Plan.

SOURCE: San Luis Obispo County Regional Airport Master Plan, 2005.

TABLE A-6
GENERAL AVIATION OPERATIONS FORECAST FOR SBP

Year	Recorded GA Operations	GA Operations at Towered Airports	SBP Market Share
Actual			
1992	87,663	38,400,000	0.23%
1995	72,794	36,000,000	0.20%
2002	92,155	37,600,000	0.25%
Planning Forecast[a]			
2008	101,300	40,500,000	0.25%
2013	107,800	43,100,000	0.25%
2023	122,000	48,800,000	0.25%

a Forecast reflects combined forecast envelope as discussed in Master Plan.

SOURCE: San Luis Obispo County Regional Airport Master Plan, 2005.

Air Taxi and Military

Existing air taxi (i.e., for-hire or on-demand service) operations at SBP total about 1,600 operations annually. The forecast for air taxi operations is 1,800 in 2008, 2,000 in 2013, and 2,200 in 2023.

FAA records indicate that military operations at SBP declined at SBP to 769 operations in 2002. Although they have recovered somewhat, military operations are relatively flat in the low 900s.

The FAA projects military operations will decrease slightly over the short-term but remain constant after the short-term period. The forecast assumes 850 annual military operations at SBP through 2023.

Peaking Characteristics

To adequately plan for airport facilities at SBP, key periods of peak activity levels are identified and facilities are planned to accommodate these key peak activity levels. In accordance with FAA Advisory Circular 150/5070-6A, the key peak periods are:

- Peak Month – The calendar month when peak passenger enplanements or aircraft operations occur.
- Design Day – The average day in the peak month.
- Busy Day – The busy day of a typical week in the peak month.
- Design Hour – The peak hour within the design day.

It is important to recognize that only the peak month is an absolute peak within a given year. All other key peak periods may be exceeded at various times during the year. However, these periods represent reasonable planning standards that are accepted throughout the aviation industry as being neither too accommodating nor too restrictive.

Since 1999, the peak month for passenger enplanements has typically been August, when the airport captured an average of 10.3 percent of annual enplanements. Design day enplanements were calculated by dividing the number of enplanements in the peak month by the number of days in the month. Design hour enplanements were estimated at 15 percent of the design day.

The peak month for airline operations in 2000 and 2002 was January, when the airport captured approximately nine percent of annual operations each year. Other months with high levels of airline operations included June and July, which is typical of these two months. Design hour operations have been calculated at 15 percent of design day activity, based on current airline schedules. This percentage has been applied to the SBP design hour forecasts. Forecasts for airline enplanements and operations are summarized in Table A-7.

July and August were the peak months between 1998 and 2002, averaging 10.3 percent of total general aviation operations. Forecasts of peak activity have been developed by applying this percentage to the forecasts of annual operations. As previously mentioned, design day operations were calculated by dividing the total number of operations in the peak month by the number of

TABLE A-7
PEAK PERIOD FORECASTS FOR SBP

	2002[a]	2008	2013	2023
Airline Enplanements				
Annual	155,177	198,000	232,000	301,000
Peak Month (9.5%)	14,347	18,810	22,040	28,595
Design Day	463	607	711	922
Design Hour (15.0%)	69	91	107	138
Airline Operations				
Annual	14,710	13,600	13,000	15,000
Peak Month (9.0%)	1,324	1,224	1,170	1,350
Design Day	43	41	39	45
Design Hour (15%)	7	6	6	7
General Aviation Operations				
Annual	92,155	101,300	107,800	122,000
Peak Month (10.3%)	9,492	10,434	11,103	12,566
Design Day	306	337	358	405
Busy Day	383	421	448	507
Design Hour (15%)	46	50	54	61

a 2002 reflects actual enplanements and operations

SOURCE: San Luis Obispo County Regional Airport Master Plan, 2005.

days in the month. The design hour was estimated at 15 percent of the design day operations. Busy day operations were calculated as 1.25 times the design day activity.

Summary

Table A-8 provides a summary of the forecasts of future activity at SBP. The airport is expected to experience an increase in total based aircraft, annual operations, and annual enplaned passengers throughout the planning period.

Airside Facilities

Runway Length

Runway length requirements are based upon five primary elements: airport elevation, the mean maximum daily temperature of the hottest month, runway gradient, the stage length of the longest non-stop trip destination, and the critical aircraft type expected to use the runway.

TABLE A-8
AVIATION FORECAST SUMMARY FOR SBP

	2002[a]	2008	2013	2023
Annual Operations				
Air Carrier	14,710	13,600	13,000	15,000
Air Taxi (for hire)	1,630	1,800	2,000	2,200
General Aviation – Itinerant	56,991	60,800	64,700	73,200
General Aviation – Local	35,164	40,500	43,100	48,800
Military	769	850	850	850
TOTAL	109,264	117,550	123,650	140,050
Annual Passenger Enplanements	155,177	198,000	232,000	301,000
Total Air Cargo (pounds)	1,242,592	1,400,000	1,600,000	2,000,000
Based Aircraft	301	320	350	400
Annual Instrument Approaches	2,669	2,900	3,200	3,700

[a] 2002 reflects actual enplanements and operations

SOURCE: San Luis Obispo County Regional Airport Master Plan, 2005.

Aircraft performance declines as elevation, temperature, and runway gradient factors increase. The local airport elevation is 212 feet above mean sea level (MSL) and the mean maximum daily temperature in the hottest month (September) is 79 degrees Fahrenheit (F). Runway elevations vary by 46 feet (Runway 11/29) and 35 feet (Runway 7/25) across the airfield. The effective runway gradient on Runway 11/29 is 0.9 percent, while the effective gradient on Runway 7/25 is 1.1 percent. According to FAA Advisory Circular 150/5300-13, the maximum allowable runway gradient in runway design is 1.5 percent.

Although the majority of the scheduled flights at SBP are to San Francisco and Los Angeles (stage lengths of less than 200 miles), the longest stage length that has been operated by the regional airlines is to Phoenix (about 440 miles). Several other markets may potentially be served by regional airlines in the future.

In examining the runway length requirements at the airport, the primary runway should be designed to accommodate the length needs of the critical aircraft type using the runway. Currently, weight restrictions have been experienced by the regional airlines on most aircraft they operate, including the Saab 340, Embraer Brasilia 120, Embraer Regional Jet (ERJ-145), and Canadair Regional Jet (CRJ 200). The Canadair Regional Jet (CRJ 700) is anticipated to operate at SBP in the future. The critical aircraft used for master planning purposes to determine takeoff length evaluations on Runway 11/29 is the CRJ 700. While regional jets offer several advantages over turboprop aircraft, these aircraft have different operating characteristics and facility requirements. For example, a fully-loaded CRJ 200 departing for Phoenix during warmer months

requires 6,200 feet and 5,630 feet, respectively, for takeoff from Runways 11 and 29. The fully-loaded CRJ 700 and fully-loaded ERJ 145 require takeoff distances of up to 6,875 feet and 8,050 feet, respectively. Given the physical constraints at the airport, the maximum length for a runway would be 6,100 feet. This runway length would enable most of the future operations to occur without taking weight penalties during warmer months.

Runway requirements also may be examined using the FAA's Airport Design Software, which separates general aviation aircraft into several categories, reflecting the percentage of fleet within each category and useful load of the aircraft. A typical FAA runway length planning category for Runway 11/29 is "100 percent of large airplanes 60,000 pounds or less at 60 percent useful load." As load factors increase to 90%, the required runway length increases from 5,530 feet to 7,930 feet.

Based on local elevation, temperature, and runway gradient factors, the Airport Master Plan determined that Runway 11/29 should be extended to provide a useable runway length of *at least 6,000 feet* (emphasis added) to accommodate existing and future aircraft at SBP (SH&E 2002).

For Runway 7/25, which is used only by smaller aircraft, the appropriate category used by the Airport Master Plan is "95 percent of small airplanes," recommends a runway length of 3,000 feet, although 75 percent of the fleet is accommodated at 2,460 feet.

Taxiways

Taxiways are constructed primarily to facilitate aircraft movements to and from the runway system. Parallel taxiways greatly enhance airfield capacity and are essential to aircraft movement about an airfield. Both runways at SBP are supported by full-length parallel taxiways and a system of entrance/exit taxiways. Most taxiways at SBP are 50 feet wide, with some taxiways on the west side at 40 feet, and wider exit taxiways along Runway 11/29 to facilitate prompt aircraft movement from the runway particularly by high-speed aircraft requiring greater turning radii.

In accordance with FAA Advisory Circular 150/5300-13, design standards for taxiway width and separation between the runways and parallel taxiways are based upon the wingspan of the critical aircraft using the runway. Since this varies between the two runways, different standards apply. For Runway 11/29, the standard specifies a minimum width of 50 feet and separation between runway/taxiway centerlines of 400 feet. Parallel Taxiway A is only 325 feet from the runway centerline along most of its length, and 290 feet in front of the passenger terminal.

Runway 7/25 serves only small aircraft. The design standard specifies a minimum runway/taxiway separation of 150 feet. Parallel Taxiway J is separated from Runway 7/25 by 200 feet.

The type and frequency of runway entrance/exit taxiways can affect the efficiency and capacity of the runway system. For that reason, a reconfiguration of the midfield taxiways has been approved and this project will occur in 2006. Right-angled exits require an aircraft to be nearly stopped before it can exit the runway but accommodate aircraft with greater radial requirements.

Acute-angled exits allow aircraft to slow to a safe speed, without stopping, before exiting the runway. Both types of taxiway exits currently exist on the airfield. The approved changes to the midfield taxiways include relocating Taxiway E, reconstructing Taxiways F and J, constructing Taxiway D, and removing Taxiway G.

Landside Facilities

Landside facilities include those associated with the airline terminal complex and general aviation hangars and ramp (including air cargo). The capacities of the various components of each area were examined in relation to projected demand to identify future landside facility needs. Landside facility needs were developed for each type of facility, based on forecast annual passenger enplanement levels of 198,000 in 2008, 232,000 in 2013, and 301,100 in 2023.

Terminal Area

The components of the terminal area include the terminal apron, gate positions, functional areas inside the terminal building, and automobile parking for the public, employees, and rental car companies. Terminal facility requirements have been determined based upon specific passenger enplanement thresholds rather than a given year, as explained at the beginning of this chapter.

The functional components of the terminal area have been evaluated using FAA Advisory Circular 150/5360-13 (*Planning and Design of Airport Terminal Facilities at Nonhub Locations*) and information collected from the regional/commuter airlines that operate at SBP. The proposed terminal building has been the subject of separate environmental documentation and is not included in this EA/EIR.

General Aviation

The current demand for general aviation facilities is being met with a combination of smaller individual hangars, larger clear span hangars that accommodate multiple aircraft, and designated tie-down aprons. Demand is being met in several different locations on the airfield.

Use of hangar space varies as a function of local climate, security, and owner preferences. The trend in general aviation aircraft, whether single or multi-engine, is to more sophisticated (and consequently more expensive) aircraft. Therefore, the owner must protect his or her investment. Several new hangar structures have been built on the airport in recent years, bringing total storage capability on the airport to approximately 150 aircraft. While many hangars are designed for an individual aircraft, many house multiple aircraft, which affects the total capacity on the airfield. In addition to the more than two dozen buildings on the airport that house these individual or multiple tenant hangars, about 160 tie-down positions are available on the airfield (110 for permanently based aircraft and 50 for transient aircraft).

Hangar requirements were forecasted using the local preferences for hangars by single- and multi-engine operators and application of planning standards of 1,200 square feet per single-engine aircraft and 2,500 square feet per multi-engine aircraft, jets, and helicopters. Requirements for

aircraft maintenance were estimated using a planning standard of about 15 percent of the hangar space need. Because air cargo sorting is handled in general aviation areas, a planning standard of 800 pounds of enplaned cargo was used to forecast cargo space requirements. This results in an additional area requirement of 2,500 square feet in the long term, which should easily be absorbed in the overall general aviation space needs.

Parking apron requirements have been forecast using planning standards established by the FAA in Advisory Circular 150/5300-13 for based and transient aircraft. A planning standard of 650 square yards per aircraft has been used to determine the apron requirements for local and itinerant aircraft not stored in hangars. A planning criterion of 1,000 square yards was used for itinerant jets. The FAA methodology for forecasting transient ramp requirements is based upon a factor of 20 percent of busy day operations.

The general aviation ramp and apron requirements are summarized in Table A-9. Since the general aviation requirements are much more sensitive to growth in aircraft, mix, and local aircraft owner preferences, and many of their hangar needs are met by fixed base operators or third-party developers, estimates have been prepared for the short-term (year 2008), intermediate term (year 2013), and long-term (year 2023) periods. Based on the estimates, the SBP Master Plan includes the development of shelters and general aviation facilities in the long-term. Tie-down positions will be sufficient through the end of the planning period.

Non-Aviation Projects

Realign Santa Fe Road

Santa Fe Road needs to be realigned to accommodate the extension of Runway 11. As a result, the intersections with Buckley Road and Tank Farm Road must be shifted to the northwest. As a separate project, County Public Works will improve the safety of Santa Fe Road by creating a new T-intersection with Tank Farm Road. The realigned road will be set back a minimum of 100 feet from the top of the bank along Acacia Creek.

Replace Santa Fe Bridge

As part of the realignment of Santa Fe Road, the bridge across Acacia Creek needs to be replaced by County Public Works. The road alignment will be straightened out across the creek to eliminate the existing hazardous curve at the bridge. The abutments for the new bridge will be located outside of the creek bed.

Relocate Access Driveways

Access driveways need to be relocated and/or new access driveways constructed to provide continued access to local businesses in the vicinity of the Airport.

TABLE A-9
GENERAL AVIATION REQUIREMENTS AT SBP

	Currently Available	Short Term (2008)	Intermediate Term (2013)	Long Term (2023)
Hangared Aircraft:				
T-Hangar Positions	90	152	167	196
Executive Hangar Positions	30	36	39	42
Conventional Hangar Positions	30	36	39	42
Total Positions	*150*	*224*	*245*	*280*
Hangar Area (sq. ft.)				
T-Hangar Area	75,890	208,400	228,300	260,700
Executive Hangar Area	54,250	61,200	73,800	102,600
Conventional Hangar Area	51,200	61,200	73,800	99,000
Maintenance Area*	20,600	49,620	56,380	69,340
Total Hangar/Maintenance Area	*201,940*	*380,420*	*432,280*	*531,640*
Aircraft Parking Apron:				
Fixed Wing Positions		93	100	111
Fixed Wing Apron Area		60,200	64,500	72,500
Transient Jet Aircraft Positions		8	8	9
Transient Jet Apron Area		7,900	8,300	9,100
Total Positions	*161*	*101*	*108*	*120*
Total Apron Area (sq. yds.)	*95,000*	*68,100*	*72,800*	*81,600*

* Hangar area does not include American Eagle Hangar (22,500 sq. ft.)

SOURCE: San Luis Obispo County Regional Airport Master Plan, 2005.

Remove Fiero Lane Water District Settling Pond

The existing Fiero Lane Water District settling pond needs to be removed to enable the access driveways from Santa Fe Road to local businesses to be constructed.

Construct Temporary Bridge and Haul Road for Importing Fill Material

To import fill material to the project site may require the development of a temporary bridge over Acacia Creek and a temporary haul road from Tank Farm Road to the project site. This temporary bridge and road would be used only by construction vehicles and the temporary bridge and road would be removed upon completion of the proposed action.

APPENDIX B
Noise Monitoring

Provided for CEQA informational purposes only

Noise Monitoring Study

A noise monitoring study was completed during the month of September 2005 to document existing noise levels from aircraft operations and other sources in the Airport vicinity at five locations representative of the closest noise sensitive land uses to the Airport. This study was conducted to provide background information on existing noise levels.

Weather during the noise monitoring period consisted of a variety of conditions ranging from clear skies to early morning fog and daytime temperatures of approximately 50º to 90ºF. Early morning conditions typically consisted of high humidity and temperatures of 50º to 60ºF. Such conditions are conducive to the efficient transmission of sound over relatively large distances. Wind conditions were typically calm in the early morning hours and breezy in the afternoon. Runway use fluctuated between Runways 11 and 29 during the monitoring period with the majority of operations occurring on Runway 29. Aircraft noise measurements obtained during these sessions is summarized in Table B-1.

The following are detailed descriptions of each noise monitoring site, including a discussion of typical noise levels affecting the sites from aircraft and non-aircraft noise sources.

Site 1: 3860 South Higuera Street

This site is in a mobile home park about 1.5 miles northwest of the Airport. Major noise sources affecting the site include airport operations and vehicle traffic on South Higuera Street and U.S. Highway 101. It was noted that the ground activity noise from the Airport could not be heard from this location. Aircraft departures from Runway 29 generally pass somewhat north of the site, turning left more or less over the site or proceeding straight out. Maximum noise levels from departing propeller aircraft were generally observed to range from about 59 to 76 dBA. Maximum noise levels from departing business jets recorded during the monitoring period ranged from about 74 to 80 dBA. Maximum noise levels from non-aircraft sources measured during the survey, which mostly consisted of traffic on South Higuera Street and within the mobile home park itself, ranged from about 44 to 65 dBA.

During the two day survey period, *total* CNEL values ranged from 54.4 dB to 58.3 dB, including noise from *all* sources (i.e., including non-aircraft noise sources) affecting the site. The average CNEL was 56.4 dB.

Site 2: 4329 Poinsettia Street

This site is in a residential neighborhood about ½ mile northeast of the Airport. The backyard of this residence, as well as other homes along Poinsettia Street, is elevated above the airport, so that a more-or-less unimpeded view of the Airport is provided. Major sources of noise affecting the residence are airport operations and traffic on Broad Street and State Route 227. Traffic noise was recorded at a high of 52 dBA during the monitoring period. Maximum levels of light single-engine propeller aircraft and turboprop commuter aircraft departing on Runway 29 ranged from about 52 dBA to 73 dBA. Aircraft landing on either Runway 29 or 11 were usually inaudible.

TABLE B-1
SUMMARY OF AIRCRAFT SINGLE EVENT MEASUREMENTS

Aircraft Type	Number Recorded	L_{max}, dBA Range	SEL, dBA Range
Site #1: 3860 South Higuera Street (Departures)			
Embraer EMB-120	2	68.5 – 70.3	76.1 – 76.4
Saab 340	1	68.5	75.2
CRJ-200	1	74.0	80.2
Single Engine Prop	1	58.9	67.8
Site #2: 4329 Poinsettia Street (Departures)			
Embraer EMB-120	2	51.8 – 57.3	57.2 – 70.3
Saab 340	1	59.3	62.7
Single Engine Prop	10	51.7 – 73.4	59.2 – 75.7
Site #3: Intersection of Davenport Creek Road/Buckley Road (Departures)			
Unknown aircraft type	6	45.2-66.5	55.0 – 72.2
Site #4: 260 Hacienda Avenue (Arrivals)			
Embraer EMB-120	2	54.9 – 55.9	61.4 – 62.7
Site #4: 260 Hacienda Avenue (Departures on Runway 29)			
Unknown aircraft type	4	48.2 – 63.6	52.9 – 74.2
Site #4: 260 Hacienda Avenue (Departures on Runway 11)			
Unknown Aircraft type	3	60.8 – 73.1	69.2 – 78.3
Site #5: 5414 Edna Road (Departures)			
Embraer EMB-120	2	66.4 – 67.5	72.9 – 74.2
Saab 340	1	66.9	73.7
Single Engine Prop	3	58.9 – 69.3	68.4 – 76.0
Site #5: 5415 Edna Road (Arrivals)			
CRJ-200	1	66.9	73.2
Single Engine Prop	3	51.3 – 61.4	59.7 – 68.1
Helicopter (non military)	8	55.1 – 66.3	63.6 – 72.8
Helicopter (military)	5	58.5 – 70.3	70.1 – 78.0

SOURCE: ESA, 2005

During the two day noise survey period *total* CNEL values ranged from 53.0 dB to 54.5 dB, including noise from *all* sources (i.e., including non-aircraft noise sources) affecting the site. The average CNEL was 53.8 dB.

Site 3: Davenport Creek Road and Buckley Road

This site is representative of homes located on the south side of Buckley Road, just south of airport property. This residence is about 1/4 mile southwest of Runway 11/29. Ground activities such as taxiing aircraft and auxiliary power units (APUs) were often inaudible at this site due to vehicle traffic associated with the roads. Vehicles traveling on Buckley Road produced measured noise levels ranging from 43 dBA to 50 dBA and vehicles traveling on Davenport Creek Road produced levels ranging from 65 dBA to 80 dBA. Aircraft noise levels on takeoff ranged from a low of 45 dBA to a high of 67 dBA. Due to the foggy weather conditions and the late day monitoring which occurred, aircraft identification was difficult. Arriving aircraft on either runway were not measurable over background noise levels.

During the two day noise survey period, *total* CNEL values were recorded at 62.7 dB, including noise from *all* sources (i.e., including non-aircraft noise sources) affecting the site.

Site 4: 260 Hacienda Avenue

This site is in a residential neighborhood on a hill overlooking the Airport. The sources of noise affecting the site include Airport operations and vehicular traffic on Hacienda Avenue. General noise levels in this area ranged between 41 dBA to 46 dBA (although it is important to note that the first day of monitoring at this site was cut short due to stronger winds that affected the noise measurements with recorded ambient noise levels over 53 dBA). Maximum noise levels during departures in either direction (Runways 11 and 29) were observed to range from 51 dBA to 73 dBA It was noted that some light propeller aircraft pass more or less directly over the site while executing a left downwind approach to Runway 29 or a left downwind departure from Runway 29. Noise levels from non-aircraft sources in the area measured during the noise survey ranged from 41 dBA to 60 dBA.

During the two day noise survey period, *total* CNEL values ranged from 53.2 dB to 59.5 dB, including noise from *all* sources (i.e., including non-aircraft noise sources) affecting the site. The average CNEL was 55.9 dB.

Site 5: 5415 Edna Road

This site is located at a residence in a rural area about ½ mile southeast of the Airport. Major noise sources affecting this site are Airport operations and traffic on Edna Road. Noise from Airport operations is mostly determined by arriving aircraft on Runway 29 and departing aircraft on Runway 11. During the two days of observations, almost all aircraft noise events were due to arrivals, which for most light propeller aircraft, helicopters and turboprop aircraft produced maximum noise levels of about 51 dBA to 69 dBA. The flight path of most aircraft arriving on Runway 29 was to the north of the site, straight in to the Airport at about 15 to 30 degrees above the horizon. Some aircraft making left downwind approaches to the Airport turned over the site; several small aircraft were also observed turning to the inside of the site. Maximum noise levels

from cars on Edna Road generally ranged from 50 dBA to 60 dBA, while maximum truck noise levels ranged from 60 dBA to 65 dBA. A fire truck was recorded going by this site with sirens on causing a temporary measurement of 82 dBA. Railroad noise is occasionally audible at this site, but does not significantly contribute to overall noise exposure as defined by the CNEL.

During the noise survey period, *total* CNEL values ranged from 58.0 dB to 59.2 dB, including noise from *all* sources (i.e., including non-aircraft noise sources) affecting the site. The average CNEL was 58.6 dB.

APPENDIX C

Land Use Assurance

COUNTY OF SAN LUIS OBISPO
DEPARTMENT OF GENERAL SERVICES

San Luis Obispo, California 93408 • (805) 781-5200
Duane P. Leib, Director

January 18, 2006

Mr. Andy Richards, Manager
FAA San Francisco Airports District Office
831 Mitten Road, Room 210
Burlingame, CA 94010-1303

RE: LAND USE ASSURANCE – SAN LUIS OBISPO COUNTY REGIONAL AIRPORT

Dear Andy:

San Luis Obispo County Regional Airport (SBP) is physically located in unincorporated San Luis Obispo County. The incorporated City of San Luis Obispo lies to the north and SBP falls within the boundaries of the City's Airport Area Specific Plan (AASP). San Luis Obispo County has land use authority over the Airport.

San Luis Obispo County serves as the State mandated Airport Land use Commission (ALUC). In this role, the ALUC works cooperatively with County departments, including the Department of General Services, which is responsible for managing and operating SBP. The ALUC also works cooperatively with the City of San Luis Obispo.

In the vicinity of SBP, the heights of structures and natural objects are regulated by FAA *FAR Part 77, Objects Affecting Navigable Airspace.* The San Luis Obispo County ALUC has adopted FAA *FAR Part 77* to establish height restrictions for natural and man-made objects in the vicinity of SBP.

San Luis Obispo County's Department of General Services comments on adjacent community land use proposals and zoning changes that my affect the operations of the Airport. Likewise, SBP works cooperatively with the City of San Luis Obispo to address land use and planning issues.

Very truly yours,

KLAASJE NAIRNE, C.A.E., C.M.
Airports Manager

APPENDIX D

Transportation

Existing Intersection Traffic Conditions

The following nine intersections in the Airport vicinity were selected as study locations to judge the potential impact of the Master Plan Update on traffic conditions:

1. State Route 227 at Buckley Road (*signalized*)
2. State Route 227 at Airport Drive (*unsignalized*)
3. State Route 227 at Aero Drive (*unsignalized*)
4. State Route 227 at Tank Farm Road (*signalized*)
5. State Route 227 at Orcutt Road (*signalized*)
6. Higuera Street at Tank Farm Road (*signalized*)
7. Higuera Street at Los Osos Valley Road (*signalized*)
8. U.S. 101 Northbound Ramps at Los Osos Valley Road (*signalized*)
9. U.S. 101 Southbound Ramps at Los Osos Valley Road (*signalized*)

Traffic turning movement volumes were obtained from various sources, including traffic counts conducted for the city and county of San Luis Obispo, and traffic counts conducted by Environmental Science Associates (ESA) for this report.

The operations of roadway facilities, including intersections, are described in terms of Level of Service (LOS), which is a qualitative description of the average driver's perception of traffic flow based on such factors as delay. Six levels of service are defined, ranging from LOS A (the best operating conditions, with little or no delay) to LOS F (the worst operating conditions, with extremely long delays). LOS E corresponds to operations "at-capacity". When volumes exceed the capacity of a roadway facility, stop-and-go-conditions result, and operations are designated as LOS F.

Different analysis methodologies were used to assess operating conditions for different types of intersections (signalized and unsignalized). The basis for determination of level of service for both signalized and unsignalized intersections is average stopped delay (in seconds per vehicle), and the *Highway Capacity Manual* Operations Methodology for each type of intersection was used (TRB, 2000).

The results of the intersection level of service calculations are presented in Table D-1. All except one of the study intersections currently operate at an acceptable LOS D or better during both the a.m. and p.m. peak hours. The intersection of Los Osos Valley Road and the U.S. 101

TABLE D-1
PEAK-HOUR INTERSECTION LEVEL OF SERVICE (LOS)
AND AVERAGE STOPPED DELAY IN SECONDS PER VEHICLE (S/V) -
EXISTING AND FUTURE CONDITIONS

Intersection	Existing (2005)		Future (2010) w/o Airport Growth		Future (2010) with Airport Growth		Future (2023) w/o Airport Growth		Future (2023) with Airport Growth	
AM PEAK HOUR										
Unsignalized [a]	LOS	S/V	LOS	S/V	LOS	S/V	LOS	S/V	LOS	S/V
2 State Route 227 / Airport Dr.	C	18.0	C	15.7	C	21.0	F	84.3	F	>100
3. State Route 227 / Aero Dr. [b]	C	19.8	D	37.0	D	37.5	A	9.9	B	10.6
Signalized										
1. State Route 227 / Buckley Rd.	C	20.2	C	25.1	C	25.6	B	13.9	B	13.9
4. State Route 227 / Tank Farm Rd.	D	35.1	D	38.3	D	38.7	C	28.6	C	28.8
5. State Route 227 / Orcutt St.	C	29.9	C	31.7	C	31.8	E	58.5	E	59.5
6. Higuera St. / Tank Farm Rd.	C	24.4	C	24.9	C	25.0	D	35.2	D	35.6
7. Higuera St. / Los Osos Valley Rd.	A	8.2	B	12.2	B	12.2	D	35.5	D	36.0
8. U.S. 101 Northbound Ramps / Los Osos Valley Rd.	C	27.2	C	33.0	C	33.1	D	37.2	D	37.6
9. U.S. 101 Southbound Ramps / Los Osos Valley Rd.	C	21.8	F	84.8	F	85.0	F	>100	F	>100
PM PEAK HOUR										
Unsignalized [a]	LOS	S/V	LOS	S/V	LOS	S/V	LOS	S/V	LOS	S/V
2 State Route 227 / Airport Dr.	C	24.8	D	32.7	D	34.8	F	>100	F	>100
3. State Route 227 / Aero Dr. [b]	C	22.0	B	10.1	B	11.3	B	13.5	B	15.2
Signalized										
1. State Route 227 / Buckley Rd.	C	28.6	D	34.7	D	35.8	B	15.8	B	15.9
4. State Route 227 / Tank Farm Rd.	D	47.8	E	69.2	E	71.1	C	32.9	C	33.3
5. State Route 227 / Orcutt St.	C	28.4	C	29.5	C	29.6	D	50.1	D	51.9
6. Higuera St. / Tank Farm Rd.	C	30.6	D	39.8	D	40.2	E	77.6	F	78.6
7. Higuera St. / Los Osos Valley Rd.	A	8.9	B	14.3	B	14.3	E	56.7	E	57.7
8. U.S. 101 Northbound Ramps / Los Osos Valley Rd.	C	24.4	C	30.3	C	30.4	F	>100	F	>100
9. U.S. 101 Southbound Ramps / Los Osos Valley Rd.	E	75.8	F	>100	F	>100	F	>100	F	>100

[a] The reported level of service for unsignalized intersections represents the worst critical movements (e.g., left turns from the minor [Stop-controlled] street).
[b] The intersection of SR 227 / Aero Drive is currently unsignalized, but is assumed to be signalized in the future.

SOURCE: Environmental Science Associates

Southbound Off-Ramp operates at LOS E during the p.m. peak hour. (The LOS calculation sheets are on-file and available for review at the San Luis Obispo County Department of Public Works.) Level of service definitions for signalized and unsignalized intersections and the corresponding ranges of delay are presented in Table D-2.

Existing Parking Facilities

Vehicular parking in the terminal area includes spaces in public lots and an employee lot. A total of 551 public spaces are currently provided in four lots (448 long-term and 103 short-term), with parking occupancy rates in each of the lots ranging from about 40 percent to 100 percent, as shown in Table D-3. Overall occupancy for long-term spaces is about 70 to 75 percent.

Planned Roadway Improvements

The City of San Luis Obispo and state and regional transportation authorities have planned a number of transportation improvements in the vicinity of, or affecting, the study area. Roadway improvements relevant to the study area for this report include the following:

- Widen the following roads from two to four lanes:
    - SR 227 (Broad Street), Tank Farm Road to Price Canyon Road
    - Tank Farm Road, SR 227 (Broad Street) to South Higuera Street
    - South Higuera Street, Tank Farm Road to Los Osos Valley Boulevard
- Construct a full interchange at Prado Road and U.S. 101
- Extend Prado Road from its current eastern terminus to SR 227 (Broad Street)
- Extend Prado Road westerly from U.S. 101 to Madonna Road
- Modify ramps and widen bridge at the U.S. 101 / Los Osos Valley Road interchange
- Modify interchange at Madonna Road and U.S. 101
- Installation of traffic signals at various locations along SR 227 (Broad Street)

These improvements are subject to the availability of funding from various sources, primarily traffic mitigation fees paid by development projects in the area, and land dedication from developments. Future traffic volumes projected by the San Luis Obispo Citywide Traffic Model for an assumed buildout year (about 2020), and used by San Luis Obispo County for the 2004 *San Luis Obispo Fringe Circulation Study*, assumed these planned roadway improvements.

Projected Traffic Volumes at Study Intersections

Plots of roadway volumes (2003 Base and 2020 Buildout) from the City of San Luis Obispo's Travel Demand Model (included in the *San Luis Obispo Fringe Circulation Study*) provided the basis for derivation of traffic volume projections for analysis years 2010 and 2023 (San Luis Obispo County, 2004). Peak-hour traffic volumes at the study intersections under 2010 and 2023 Background Conditions were estimated by applying annual growth rates (2003-2020) that the City's model projected.

TABLE D-2
DEFINITIONS FOR INTERSECTION LEVEL OF SERVICE

Unsignalized Intersections		Level of Service Grade	Signalized Intersections	
Description	Average Total Vehicle Delay (Seconds)		Average Control Vehicle Delay (Seconds)	Description
No delay for stop-controlled approaches.	≤10.0	A	≤10.0	Free Flow or Insignificant Delays: Operations with very low delay, when signal progression is extremely favorable and most vehicles arrive during the green light phase. Most vehicles do not stop at all.
Operations with minor delay.	>10.0 and ≤15.0	B	>10.0 and ≤20.0	Stable Operation or Minimal Delays: Generally occurs with good signal progression and/or short cycle lengths. More vehicles stop than with LOS A, causing higher levels of average delay. An occasional approach phase is fully utilized.
Operations with moderate delays.	>15.0 and ≤25.0	C	>20.0 and ≤35.0	Stable Operation or Acceptable Delays: Higher delays resulting from fair signal progression and/or longer cycle lengths. Drivers begin having to wait through more than one red light. Most drivers feel somewhat restricted.
Operations with increasingly unacceptable delays.	>25.0 and ≤35.0	D	>35.0 and ≤55.0	Approaching Unstable or Tolerable Delays: Influence of congestion becomes more noticeable. Longer delays result from unfavorable signal progression, long cycle lengths, or high volume to capacity ratios. Many vehicles stop. Drivers may have to wait through more than one red light. Queues may develop, but dissipate rapidly, without excessive delays.
Operations with high delays, and long queues.	>35.0 and ≤50.0	E	>55.0 and ≤80.0	Unstable Operation or Significant Delays: Considered to be the limit of acceptable delay. High delays indicate poor signal progression, long cycle lengths and high volume to capacity ratios. Individual cycle failures are frequent occurrences. Vehicles may wait through several signal cycles. Long queues form upstream from intersection.
Operations with extreme congestion, and with very high delays and long queues unacceptable to most drivers.	>50.0	F	>80.0	Forced Flow or Excessive Delays: Occurs with oversaturation when flows exceed the intersection capacity. Represents jammed conditions. Many cycle failures. Queues may block upstream intersections.

SOURCE: Transportation Research Board, Special Report 209, *Highway Capacity Manual*, updated 2000.

TABLE D-3
EXISTING PARKING SUPPLY AND OCCUPANCY

Lot [a]	Capacity	Occupancy (9:00 a.m.)	Occupancy (3:00 p.m.)	Occupancy (6:00 p.m.)
1	84 spaces (long-term)	100%	100%	100%
2	103 spaces (short-term)	40%	40%	55%
4	74 spaces (long-term)	100%	100%	100%
5	290 spaces (long-term)	60%	50%	50%
Total	448 long-term spaces	74%	68%	68%
	103 short-term spaces	40%	40%	55%

[a] Parking Lot 3 is used for rental car parking only.

SOURCE: Environmental Science Associates, survey conducted June 2004.

Estimate of Future Vehicle Trip Generation

Total Airport trip generation is the sum of the trips generated by individual aviation facilities that comprise a commercial service airport. Trips can be associated with the passenger terminal area, ancillary site development (such as air cargo areas, and rental car facilities), and general aviation areas. Recent research of trip generation rates applicable to commercial airports indicates that the only statistically significant relationships that could be developed from the data set of 39 airports surveyed as part of the research were derived by linking daily traffic to and from the airport with the number of daily passenger enplanements (ITE, 1998). There is an inverse relationship between the daily trip rate and daily enplanements; i.e., as the number of daily passengers increases the trip generation rate decreases. There is an increased availability of shuttle vans and transit vehicles at larger airports, which decreases the percentage of private automobiles. Conversely, for smaller airports (i.e., fewer than one million annual enplanements), the high trip generation rate is indicative of the fact that the private automobile is the primary mode of transportation. The above-described research indicated that a trip rate of 2.67 daily vehicle trips per daily enplanement is appropriate for smaller airports, and that trip rate was used for the No Action Alternative and Proposed Action (for both 2010 and 2023) for SBP.

The peak-month level of passenger enplanements at SBP is about 10 percent of the annual level, and daily enplanements at SBP represent about 3.3 percent of the peak-month level. Temporal distribution of daily SBP-generated vehicle trips during peak traffic hours on the Airport-area road network (i.e., the peak volume during the 7:00 to 9:00 a.m., and 4:00 to 6:00 p.m. periods), derived on the basis of June 2004 traffic counts at the Airport entrances on State Route 227 (Broad Street), is about 9 percent in the a.m. peak hour, and about 16 percent in the p.m. peak hour.

Year 2010

Forecasts of annual passenger enplanements for SBP (presented in Chapter 1 of this EA/EIR) indicate a 30 percent increase in passenger activity from 2004 to 2010, to about 211,600 annual enplanements, about 21,200 peak-month enplanements, and about 700 daily enplanements.

Using the trip rate of 2.67 daily vehicle trips per daily enplanement, there would be about 1,864 daily vehicle trips to and from SBP in 2010. There would be a total of about 166 a.m. peak-hour vehicle trips and about 290 p.m. peak-hour vehicle trips in 2010, a net increase above 2004 levels of about 38 and 66 trips in the a.m. and p.m. peak hours, respectively.

Year 2023

Forecasts of annual passenger enplanements for SBP indicate an 84 percent increase in passenger activity from 2004 to 2023, to about 301,000 annual enplanements, about 30,000 peak-month enplanements, and about 995 daily enplanements.

Using the trip rate of 2.67 daily vehicle trips per daily enplanement, there would be about 2,650 daily vehicle trips to and from SBP in 2023. There would be a total of about 236 a.m. peak-hour vehicle trips and about 413 p.m. peak-hour vehicle trips in 2023, a net increase above 2004 levels of about 108 and 190 trips in the a.m. and p.m. peak hours, respectively.

Estimate of Future Parking Demand

Parking demand would increase due to the expected growth in Airport activity, primarily due to projected increases in passenger enplanements. Parking demand under 2010 and 2023 conditions was estimated on the basis of percent increases in enplanements from 2004 conditions. The short-term parking spaces are currently underutilized. Except for Lot 5, which is the farthest away from the terminal, long-term parking spaces are essentially fully-occupied. Therefore, demand for long-term parking spaces is considered the critical element of the Airport parking supply when adequacy of supply to accommodate demand is evaluated.

Year 2010

The estimated 30 percent increase in passenger enplanements from 2004 to 2010 translates to an increase in SBP long-term parking demand from about 330 spaces (counted during a June 2004 parking occupancy survey) to about 430 spaces. The current supply of 448 long-term spaces would accommodate the estimated demand, although the occupancy rate would increase from about 74 percent to about 96 percent. As described in Chapter 3 (Alternatives), with or without the Master Plan improvements, Airport facilities under the No Action Alternative would include those now existing at SBP and other projects that have been approved, but not constructed, including reconfigured parking facilities. The new parking facilities would consist of an 860-space parking garage (225 spaces for employees, and 635 long-term public parking spaces) and 205 spaces in a surface parking lot (to be used for both rental cars and for short-term parking).

Year 2023

The estimated 84 percent increase in passenger enplanements from 2004 to 2023 translates to an increase in SBP long-term parking demand from about 330 spaces to about 607 spaces. The current supply of 448 long-term spaces would not accommodate the estimated demand, but as described above, reconfigured parking facilities (subject to previous NEPA and CEQA environmental review and approved by both the FAA and the County) would provide an on-Airport supply of 635 long-term parking spaces, which would ensure that the estimated 2023 parking demand is accommodated.

Future Traffic Levels of Service at Study Intersections

Year 2010

As shown in Table D-1, by 2010, the signalized intersection of Los Osos Valley Road / U.S. 101 Southbound Off-Ramp is expected to operate at an unacceptable LOS F during both peak hours, and the signalized intersection of SR 227 / Tank Farm Road is expected to operate at an unacceptable LOS E during the p.m. peak hour. However, the increased delay due to traffic generated by growth in Airport activity would not be high enough to have a significant effect on traffic circulation patterns and congestion. All other study intersections would operate at an acceptable level of service (i.e., LOS D or better) under all analysis scenarios in 2010. The impacts on intersection levels of service would be less than significant.

Year 2023

As shown in Table D-1, by 2023, several of the signalized study intersections are projected to operate at an unacceptable LOS E or F during one or both of the peak traffic hours, as follows:

5. State Route 227 / Orcutt Street (AM peak hour)
6. Higuera Street / Tank Farm Road (PM peak hour)
7. Higuera Street / Los Osos Valley Road (PM peak hour)
8. U.S. 101 Northbound Ramps / Los Osos Valley Road (PM peak hour)
9. U.S. 101 Southbound Ramps / Los Osos Valley Road (AM and PM peak hours)

However, the increased delay due to traffic generated by growth in Airport activity would not be high enough to have a significant effect on traffic circulation patterns and congestion at the above-listed intersections. The three other signalized study intersections would operate at an acceptable level of service under all analysis scenarios in 2023.[1]

In addition, the level of service for critical movements (e.g., left turns from stop-sign-controlled side streets) at the unsignalized study intersection of SR 227 / Airport Drive is projected to operate at an unacceptable LOS F in 2023. Growth in traffic generated by Airport activities would increase outbound left turns, exacerbating delays to complete those turns. SR 227 / Airport

[1] The intersection of SR 227 / Aero Drive, currently unsignalized and configured as a "T"-intersection, is assumed to be signalized and reconfigured (to form a four-leg intersection, with the fourth leg being an access driveway for property now occupied by Cuesta Equipment) by 2023.

Drive currently is a "T"-intersection, but is assumed to be reconfigured by 2023 to form a four-leg intersection, with the fourth leg providing access for the proposed Senn/Glick and Moribito/Burke development. The traffic volume making the affected minor-street left turns (eastbound and westbound) would be about two and three percent of the total intersection volume, without and with the traffic increase due to increased Airport activities, respectively. The impact of the Proposed Action Plan would be significant. Signalization of the SR 227 / Airport Drive intersection would improve the peak-hour LOS to an acceptable level (mitigating the impact to a less-than-significant level under 2023 Proposed Action conditions). However, traffic volumes would not satisfy Caltrans' Traffic Signal Warrant No. 11 [Peak-Hour Volumes] under projected 2023 conditions. At a time that Caltrans determines that traffic conditions warrant it, San Luis Obispo County would coordinate with Caltrans for the design, funding, and timing of installation of traffic signals at the intersection of SR 227 and Airport Drive.

APPENDIX E

Air Quality – Existing Conditions

Project Setting

San Luis Obispo County, together with Santa Barbara and Ventura counties, forms California's South Central Coast Air Basin (Air Basin). From a geographical and meteorological standpoint, San Luis Obispo County can be divided into three general regions: the Coastal Plateau, the Upper Salinas River Valley, and the East County Plain. Air quality in each of these regions is characteristically different. The Airport lies within the Coastal Plateau region – an area about five to ten miles wide and with elevations ranging from sea level to about 500 feet. Coastal headlands have a pronounced influence on local wind flow patterns.

The Pacific Ocean strongly affects meteorology within the County. Proximity to the ocean spares the coastal portions of the County from seasonal temperature extremes that occur inland. These temperature fluctuations dictate prevailing wind patterns as well as inversion layers. Typically, prevailing winds blow westerly. However, winds originating from the southeast during so-called Santa Ana conditions may transport pollutants over the ocean for several days. As Santa Ana conditions disperse, pollutants accumulated offshore can return onshore to mix with existing emissions, resulting in high pollutant concentrations. The average annual temperature is approximately 60.4 F, with approximately 20.8 inches of rainfall (mostly between November and April), and an average annual wind speed of 7.6 miles per hour.

About 75 percent of the county population and a corresponding portion of the commercial and industrial facilities are located within the Coastal Plateau. Emissions of air pollutants per unit area are generally higher than in other regions of the County. The predominant land use in San Luis Obispo County is agriculture. Industrial land uses include a 1,000 megawatt fossil-fuel fired power plant in Morro Bay, a 2,000 megawatt nuclear power plant at Diablo Canyon, a petroleum refinery and coke calcining complex on the Nipomo Mesa, several large oil fields and tank farms, and many smaller industrial operations.

Land uses such as schools, hospitals, and convalescent homes are considered to be sensitive to poor air quality conditions because infants, children, the elderly, and people with health afflictions (especially respiratory ailments) are more susceptible than the general public to respiratory infections and other air-quality-related health problems. Residential areas also are considered to be sensitive to air pollution because residents (including children and the elderly) tend to be at home for extended periods of time, resulting in sustained exposure to any pollutants present. Land uses surrounding SBP are largely industrial; the closest residential area to the main commercial runway (Runway 11/29) is located approximately 1,800 feet to the southeast. The closest residences to the general aviation runway (Runway 7/25) are located approximately 360 feet south of that runway's centerline. Other sensitive receptors are even further away.

A regional air quality monitoring network provides information on ambient concentrations of criteria air pollutants. Monitored ambient air pollutant concentrations reflect the number and strength of emissions sources and the influence of topographical and meteorological factors. Nine air monitoring stations are located throughout the county with one monitoring station in the City of San Luis Obispo (Marsh Street). The Airport is approximately three miles south-southeast of this monitoring station.

Table E-1 presents a five-year summary of air pollutant data collected at the representative monitoring station nearest the Airport, as well as the applicable state and federal ambient air quality standards. Pollutant concentrations measured at this station should be representative of background air pollutant concentrations for the Airport vicinity. Table E-1 indicates that background particulate matter and ozone concentrations rarely exceeded state and national standards between 1999 and 2003.

Exceedance of the carbon monoxide (CO) standards is most likely to occur in winter months, when relatively low inversion levels trap pollutants near the ground and concentrate the CO. Background CO concentrations in the Airport vicinity do not approach the state standards even during stagnant wintertime conditions. However, localized CO concentrations at congested intersections and freeway segments might be expected to be higher than the monitoring data, thereby creating local hot spots.

TABLE E-1
AIR QUALITY DATA SUMMARY (1999–2003) FOR THE AIRPORT VICINITY

		Monitoring Data by Year				
Pollutant	**Standard[a]**	**1999**	**2000**	**2001**	**2002**	**2003**
Ozone						
Highest 1 Hour Average (ppm)[b]		0.089	0.075	0.078	0.073	0.070
Days over State Standard	0.09	0	0	0	0	0
Days over National Standard	0.12	0	0	0	0	0
Highest 8 Hour Average (ppm)[b]	0.08	0.069	0.069	0.068	0.063	0.063
Days over National Standard		0	0	0	0	0
Particulate Matter (PM10)						
Highest 24 Hour Average ($\mu g/m^3$)[b]		44	44	40	45	**59**
Est. Days over State Standard[c]	50	0	0	0	0	1
Est. Days over National Standard[c]	150	0	0	0	0	0
Annual Average ($\mu g/m^3$)[b]	30	17.0	19.6	19.3	17.8	17.3
Particulate Matter (PM2.5)						
Highest 24 Hour Average ($\mu g/m^3$)[b]		20.0	28.2	25.5	20.1	NA
Days over National Standard	65	0	0	0	0	NA
Annual Average ($\mu g/m^3$)[b]	12	8.2	NA	NA	NA	NA

[a] Generally, state standards and national standards are not to be exceeded more than once per year.
[b] ppm = parts per million; $\mu g/m^3$ = micrograms per cubic meter.
[c] PM10 is not measured every day of the year. Number of estimated days over the standard is based on 365 days per year.

NOTES: Values in **bold** are in excess of applicable standard.
NA = Not Available.

SOURCE: California Air Resources Board, *Summaries of Air Quality Data*, 1999, 2000, 2001, 2002, 2003; http://www.arb.ca.gov/adam/cgi-bin/db2www/polltrendsb.d2w/start and California Air Resource Board, *California Ambient Air Quality Data*, 1980-2003

APPENDIX F

Air Quality – Emissions Inventory and Dispersion Analysis

Two types of air quality analysis were performed – emission inventories and dispersion analysis. The emission inventory provides an indication of the change in total air pollutant and pollutant precursor emissions with implementation of the Proposed Action. The dispersion analysis evaluates concentration of pollutants in order to compare the Baseline condition and the Proposed Action for the Screening Health Risk Assessment.

The emission inventories and the dispersion analysis were prepared using the following Federal Aviation Administration (FAA) and US Environmental Protection Agency (USEPA) computer models:

- Emissions and Dispersion Modeling System (EDMS - Version 4.3)
  http://www.faa.gov/about/office_org/headquarters_offices/aep/models/edms_model/

- Industrial Source Complex model (ISCST3)
  http://www.epa.gov/scram001/dispersion_alt.htm#isc3

- EMFAC2002 Emissions Model on Road Vehicles
  http://www.arb.ca.gov/msei/on-road/latest_version.htm

The FAA-required EDMS is a model designed to assess the air quality impacts of proposed airport development projects. The ISC3 model is a dispersion model approved by the USEPA. The CARB's EMFAC2002 model is a tool for predicting emissions of hydrocarbons, carbon monoxide (CO), oxides of nitrogen (NOx), carbon dioxide (CO2), and particulate matter (PM) from cars, trucks, and motorcycles. Links have been provided where the models may be ordered and/or downloaded.

Emissions

Over the short-term, local air quality conditions would be temporarily affected due to construction and demolition activities. Over the long-term, the Proposed Action has the potential to affect air quality conditions due to increases in the number of aircraft operations and airport support operations and due to increases in motor vehicle volumes. To evaluate the effect of these changes on local and regional air quality conditions, an emission inventory was performed.

Estimates of air pollutant and pollutant precursor emissions by source are known as emission inventories. Emission inventories provide an indication of the potential increase/decrease in air pollutants and precursors with the Proposed Action when compared to the No Action Alternative and the Baseline Condition. For airport-related assessments, emission inventories summarize the total quantity of each pollutant emitted by aircraft, motor vehicles, and other airport-related emission sources within a defined area. For the evaluation, annual emissions, expressed in tons, were estimated from airport-related sources and from motor vehicles on roadways and within parking lots. The airport-related sources that were included in the emissions inventory were aircraft, ground support equipment, and motor vehicles (passenger vehicles, buses, and delivery trucks). The pollutants and pollutant precursors inventoried were volatile organic compounds (VOC), nitrogen oxides (NOx), carbon monoxide (CO), sulfur dioxide (SO2), and respirable

particulate matter with a diameter of 10 microns or less (PM10), and particulate matter with a diameter of 2.5 microns or less (PM2.5). Emission inventories were prepared for the Baseline Condition (2004) and the future years of 2010 and 2023.

Construction Emissions

Construction-related dust emissions would vary from day to day, depending on the level and type of activity, silt content of the soil, and the weather. In the absence of mitigation, construction activities may result in significant quantities of dust, and as a result, local visibility and PM10 concentrations may be adversely affected on a temporary and intermittent basis during the construction period. In addition, the fugitive dust generated by construction would include not only PM10, but also larger particles, which would fall out of the atmosphere within several hundred feet of the site and could result in nuisance-type impacts. Combustion emissions from heavy equipment and construction worker commute trips also would vary from day to day, and would contribute incrementally to regional ozone concentrations over the construction period.

The analysis of construction activities evaluated the level of pollutant and pollutant precursor emissions directly related to construction. The construction activities related to the Proposed Action include the following general tasks and specific projects:

- Clearing and grubbing of the site;
- Grading;
- Providing for drainage throughout the site; and
- Constructing hangers, terminal, taxiways, and runways.

2010 No Action Alternative

Terminal Building (includes parking structure and on-site roadways accessing the terminal) – October 2007 through September 2009
Midfield Taxiway Reconfiguration – January 2006 through May 2006 (mostly night work)
East Side Hangar – March 2006 through August 2006
Fuel Farm – April 2006 through June 2006
FBO Development on East Side – April 2006 through November 2006
East Side Ramp/Apron – January 2006 through April 2006

2010 No Action Alternative Cumulative Projects

Runway 29 EMAS – July 2008 through August 2008
Runway 11 EMAS – July 2009 through August 2009

2010 Proposed Action

Runway 11 extension – March 2006 through October 2006
Santa Fe Road realignment – March 2006 through September 2006
Taxiway A – April 2007 through August 2007

2023 Proposed Action

Taxiway M – Summer 2014
West Side Hangar Development – Summer 2015

To calculate emissions that would result from the construction activities, an estimate of daily equipment requirements for each general construction activity was prepared for each specific project component. Equipment requirements were then assigned to each activity. The types of equipment include (but are limited to) motor graders, rollers, water trucks, loaders, bulldozers, pavers, excavators, pickup trucks and dump trucks. Equipment requirements were then assigned to each activity. Table F-1 provides a list of the equipment that would be used for the construction of each project component. All of the equipment was assumed to be diesel-powered, except the gasoline-powered pickup trucks.

Data regarding the number of pieces and types of construction equipment to be used on the project, the deployment schedule of equipment (monthly and annually), and the approximate daily operating time (including power level or usage factor) were estimated for the construction of each project component based on a schedule of construction activity. These estimates were prepared by Mead & Hunt by subproject phase and by month. Worst-case construction estimates were determined to occur during the taxiway construction projects (Taxiway M and A) or the roadway and the runway extension projects, depending on pollutant and averaging period. The following figure shows the schedule of construction activitiy for each phase of work and the cooresponding emission estimates.

TABLE F-1
CONSTRUCTION EQUIPMENT

Equipment	Size (hp)	Daily Hours
Smooth Drum Roller (CAT 563E)	150	8
Soil Compactor (CAT 825H)	401	8
Compactor (CAT 323C)	83	8
Motorgrader (CAT 14H)	257	8
Water Truck	225	8
Bulldozer (CAT D9T)	464	8
Bulldozer (CAT D6R)	210	8
Rubber Tire Loader (CAT 966G)	260	8
Rubber Tire Loader (CAT 950G)	196	8
Asphalt Spreader (CAT AP900B)	153	8
Vibratory Roller (CAT CB634D)	145	8
Rubber Tire Roller (CAT PS-360B)	105	8
Windrow Elevator (Barber-Green BG 650B)	107	8
Excavator (CAT 330CL)	247	8
Excavator (CAT 345C)	345	8
Tack Truck	225	8
Scraper (CAT 637G)	519	8
Concrete Paving Operation	500	8
Haul Trucks	--	8
Pickup Trucks	--	2

ESTIMATION OF EMISSIONS FROM CONSTRUCTION EQUIPMENT-ROADWORK PHASE

				Emission Factor (lb/hr or lb/mi)					Emissions (lbs/day)					Emissions (tons/quarter)				
Equipment	**Number**	**Hours/day**	**# of Days**	**ROG**	**NOx**	**CO**	**SO2**	**PM-10**	**ROG**	**NOx**	**CO**	**SO2**	**PM-10**	**ROG**	**NOx**	**CO**	**SO2**	**PM-10**
Road Demolition																		
Milling Machine	1	8	5	0.152	1.691	0.675	0.143	0.139	1.22	13.53	5.40	1.14	1.11	0.00	0.03	0.01	0.00	0.00
Dump Truck	4	8	5	0.001	0.020	0.004	0.000	0.001	0.01	0.33	0.06	0.00	0.01	0.00	0.00	0.00	0.00	0.00
Subtotal									**1.23**	**13.85**	**5.46**	**1.15**	**1.12**	**0.00**	**0.03**	**0.01**	**0.00**	**0.00**
Placing of Structural Section																		
Grader	2	8	12	0.040	0.713	0.151	0.086	0.061	0.64	11.41	2.42	1.38	0.98	0.00	0.07	0.01	0.01	0.01
Roller	2	8	11	0.067	0.862	0.304	0.067	0.050	1.07	13.79	4.86	1.07	0.80	0.01	0.08	0.03	0.01	0.00
Dump Truck	10	8	9	0.001	0.020	0.004	0.000	0.001	0.03	0.81	0.14	0.01	0.03	0.00	0.00	0.00	0.00	0.00
Water Truck	1	8	11	0.192	4.166	1.794	0.454	0.256	1.54	33.33	14.35	3.63	2.05	0.01	0.18	0.08	0.02	0.01
Subtotal									**3.27**	**59.34**	**21.78**	**6.09**	**3.85**	**0.02**	**0.33**	**0.12**	**0.03**	**0.02**
Asphalt Concrete																		
Paving Machine	1	8	4	0.152	1.691	0.675	0.143	0.139	1.22	13.53	5.40	1.14	1.11	0.00	0.03	0.01	0.00	0.00
Dump Truck	11	8	4	0.001	0.020	0.004	0.000	0.001	0.03	0.90	0.16	0.01	0.03	0.00	0.00	0.00	0.00	0.00
Tack Truck	1	2	2	0.192	4.166	1.794	0.454	0.256	0.38	8.33	3.59	0.91	0.51	0.00	0.01	0.00	0.00	0.00
Roller	5	8	4	0.067	0.862	0.304	0.067	0.050	2.68	34.48	12.16	2.68	2.00	0.01	0.07	0.02	0.01	0.00
Subtotal									**4.31**	**57.24**	**21.31**	**4.74**	**3.65**	**0.01**	**0.11**	**0.04**	**0.01**	**0.01**

Assumptions
The milling machine is 6' wide
The dump trucks haul to a spoils pile .5 miles roundtrip
The future road earthwork quantities balance
The structural section is 4" of asphalt concrete and 8" of aggregate base
The water trucks have a capacity of 4000 gallons
The dump trucks have a capacity of 25 tons with a 1 hour round trip time
8900 CY of aggrgate are required for this phase
The paving crew is capable of laying 2200 tons of asphalt per 8 hour day
8950 tons of asphalt concrete is required for this phase
The dump trucks can haul 25 tons of asphalt and make one round trip per hour

ESTIMATION OF EMISSIONS FROM CONSTRUCTION EQUIPMENT-TAXIWAY M PHASE

				Emission Factor (lb/hr or lb/mi)					Emissions (lbs/day)					Emissions (tons/quarter)				
Equipment	**Number**	**Hours/day**	**# of Days**	**ROG**	**NOx**	**CO**	**SO2**	**PM-10**	**ROG**	**NOx**	**CO**	**SO2**	**PM-10**	**ROG**	**NOx**	**CO**	**SO2**	**PM-10**
Earthwork/Site Preparation																		
Earth Scraper	10	8	25	0.282	3.840	1.257	0.463	0.406	22.56	307.20	100.56	37.04	32.48	0.28	3.84	1.26	0.46	0.41
Bulldozer	2	8	26	0.152	1.691	0.675	0.143	0.139	2.43	27.06	10.80	2.29	2.22	0.03	0.35	0.14	0.03	0.03
Water Truck	2	8	25	0.192	4.166	1.794	0.454	0.256	3.07	66.66	28.70	7.26	4.10	0.04	0.83	0.36	0.09	0.05
Subtotal									**28.06**	**400.91**	**140.06**	**46.59**	**38.80**	**0.35**	**5.02**	**1.76**	**0.58**	**0.49**
Placing of Structural Section																		
Grader	2	8	8	0.040	0.713	0.151	0.086	0.061	0.64	11.41	2.42	1.38	0.98	0.00	0.05	0.01	0.01	0.00
Roller	2	8	7	0.067	0.862	0.304	0.067	0.050	1.07	13.79	4.86	1.07	0.80	0.00	0.05	0.02	0.00	0.00
Dump Truck	8	8	5	0.001	0.020	0.004	0.000	0.001	0.02	0.65	0.12	0.01	0.02	0.00	0.00	0.00	0.00	0.00
Water Truck	1	8	7	0.192	4.166	1.794	0.454	0.256	1.54	33.33	14.35	3.63	2.05	0.01	0.12	0.05	0.01	0.01
Subtotal									**3.27**	**59.18**	**21.75**	**6.09**	**3.85**	**0.01**	**0.21**	**0.08**	**0.02**	**0.01**
Asphalt Concrete																		
Paving Machine	1	8	1	0.152	1.691	0.675	0.143	0.139	1.22	13.53	5.40	1.14	1.11	0.00	0.01	0.00	0.00	0.00
Dump Truck	11	8	1	0.001	0.020	0.004	0.000	0.001	0.03	0.90	0.16	0.01	0.03	0.00	0.00	0.00	0.00	0.00
Tack Truck	1	2	1	0.192	4.166	1.794	0.454	0.256	0.38	8.33	3.59	0.91	0.51	0.00	0.00	0.00	0.00	0.00
Roller	5	8	1	0.067	0.862	0.304	0.067	0.050	2.68	34.48	12.16	2.68	2.00	0.00	0.02	0.01	0.00	0.00
Subtotal									**4.31**	**57.24**	**21.31**	**4.74**	**3.65**	**0.00**	**0.03**	**0.01**	**0.00**	**0.00**

Assumptions
Each earth scraper is capable of hauling 25 CY
The borrow pit is a 1 mile round trip for each earth scraper
2 round trips can be made per hour per earth scraper
The bulldozers are Caterpillar D-9s or equivalent
The quantity of earth to be hauled for this phase is 100,000 CY
The water trucks have a capacity of 4000 gallons
The dump trucks have a capacity of 25 tons with a 1 hour round trip time
3500 CY of aggrgate are required for this phase
The paving crew is capable of laying 2200 tons of asphalt per 8 hour day
2050 tons of asphalt concrete is required for this phase
The dump trucks can haul 25 tons of asphalt and make one round trip per hour
The structural section is 4" of asphalt concrete and 14" of aggregate base

ESTIMATION OF EMISSIONS FROM CONSTRUCTION EQUIPMENT-TAXIWAY A PHASE

				Emission Factor (lb/hr or lb/mi)					Emissions (lbs/day)					Emissions (lbs/quarter)				
Equipment	**Number**	**Hours/day**	**# of Days**	**ROG**	**NOx**	**CO**	**SO2**	**PM-10**	**ROG**	**NOx**	**CO**	**SO2**	**PM-10**	**ROG**	**NOx**	**CO**	**SO2**	**PM-10**
Earthwork/Site Preparation																		
Earth Scraper	10	8	25	0.282	3.840	1.257	0.463	0.406	22.56	307.20	100.56	37.04	32.48	0.28	3.84	1.26	0.46	0.41
Bulldozer	2	8	26	0.152	1.691	0.675	0.143	0.139	2.43	27.06	10.80	2.29	2.22	0.03	0.35	0.14	0.03	0.03
Water Truck	2	8	25	0.192	4.166	1.794	0.454	0.256	3.07	66.66	28.70	7.26	4.10	0.04	0.83	0.36	0.09	0.05
Subtotal									**28.06**	**400.91**	**140.06**	**46.59**	**38.80**	**0.35**	**5.02**	**1.76**	**0.58**	**0.49**
Placing of Structural Section																		
Grader	2	8	7	0.040	0.713	0.151	0.086	0.061	0.64	11.41	2.42	1.38	0.98	0.00	0.04	0.01	0.00	0.00
Roller	2	8	6	0.067	0.862	0.304	0.067	0.050	1.07	13.79	4.86	1.07	0.80	0.00	0.04	0.01	0.00	0.00
Dump Truck	8	8	4	0.001	0.020	0.004	0.000	0.001	0.04	1.30	0.23	0.02	0.04	0.00	0.00	0.00	0.00	0.00
Water Truck	1	8	6	0.192	4.166	1.794	0.454	0.256	1.54	33.33	14.35	3.63	2.05	0.00	0.10	0.04	0.01	0.01
Subtotal									**3.29**	**59.83**	**21.86**	**6.10**	**3.87**	**0.01**	**0.18**	**0.07**	**0.02**	**0.01**
Asphalt Concrete																		
Paving Machine	1	8	1	0.152	1.691	0.675	0.143	0.139	1.22	13.53	5.40	1.14	1.11	0.00	0.01	0.00	0.00	0.00
Dump Truck	11	8	1	0.001	0.020	0.004	0.000	0.001	0.06	1.79	0.32	0.03	0.06	0.00	0.00	0.00	0.00	0.00
Tack Truck	1	2	1	0.192	4.166	1.794	0.454	0.256	0.38	8.33	3.59	0.91	0.51	0.00	0.00	0.00	0.00	0.00
Roller	5	8	1	0.067	0.862	0.304	0.067	0.050	2.68	34.48	12.16	2.68	2.00	0.00	0.02	0.01	0.00	0.00
Subtotal									**4.34**	**58.13**	**21.47**	**4.76**	**3.68**	**0.00**	**0.03**	**0.01**	**0.00**	**0.00**

Assumptions
Each earth scraper is capable of hauling 25 CY
The borrow pit is a 1 mile round trip for each earth scraper
2 round trips can be made per hour per earth scraper
The bulldozers are Caterpillar D-9s or equivalent
The quantity of earth to be hauled for this phase is 100,000 CY
The water trucks have a capacity of 4000 gallons
The dump trucks have a capacity of 25 tons with a 1 hour round trip time
3000 CY of aggrgate are required for this phase
The paving crew is capable of laying 2200 tons of asphalt per 8 hour day
1750 tons of asphalt concrete is required for this phase
The dump trucks can haul 25 tons of asphalt and make one round trip per hour
The structural section is 4" of asphalt concrete and 14" of aggregate base

ESTIMATION OF EMISSIONS FROM CONSTRUCTION EQUIPMENT-RUNWAY PHASE

				Emission Factor (lb/hr or lb/mi)					Emissions (lbs/day)					Emissions (lbs/quarter)				
Equipment	**Number**	**Hours/day**	**# of Days**	**ROG**	**NOx**	**CO**	**SO2**	**PM-10**	**ROG**	**NOx**	**CO**	**SO2**	**PM-10**	**ROG**	**NOx**	**CO**	**SO2**	**PM-10**
Earthwork/Site Preparation																		
Excavator	1	8	50	0.152	1.691	0.675	0.143	0.139	1.22	13.53	5.40	1.14	1.11	0.03	0.34	0.14	0.03	0.03
Loader	1	8	50	0.250	1.890	0.572	0.182	0.172	2.00	15.12	4.58	1.46	1.38	0.05	0.38	0.11	0.04	0.03
Bulldozer	1	8	50	0.152	1.691	0.675	0.143	0.139	1.22	13.53	5.40	1.14	1.11	0.03	0.34	0.14	0.03	0.03
Dump Truck	20	8	50	0.001	0.020	0.004	0.000	0.001	1.02	32.58	5.77	0.47	1.07	0.03	0.81	0.14	0.01	0.03
Grader	1	8	53	0.040	0.713	0.151	0.086	0.061	0.32	5.70	1.21	0.69	0.49	0.01	0.15	0.03	0.02	0.01
Roller	1	8	53	0.067	0.862	0.304	0.067	0.050	0.54	6.90	2.43	0.54	0.40	0.01	0.18	0.06	0.01	0.01
Water Truck	2	8	53	0.192	4.166	1.794	0.454	0.256	3.07	66.66	28.70	7.26	4.10	0.08	1.77	0.76	0.19	0.11
Subtotal									**9.38**	**154.01**	**53.49**	**12.70**	**9.65**	**0.24**	**3.97**	**1.39**	**0.33**	**0.25**
Placing of Storm Sewer																		
Excavator	1	8	8	0.152	1.691	0.675	0.143	0.139	1.22	13.53	5.40	1.14	1.11	0.00	0.05	0.02	0.00	0.00
Dump Truck	2	8	8	0.001	0.020	0.004	0.000	0.001	0.10	3.26	0.58	0.05	0.11	0.00	0.01	0.00	0.00	0.00
Compactor	1	8	8	0.152	1.691	0.675	0.143	0.139	1.22	13.53	5.40	1.14	1.11	0.00	0.05	0.02	0.00	0.00
Loader	1	8	8	0.250	1.890	0.572	0.182	0.172	2.00	15.12	4.58	1.46	1.38	0.01	0.06	0.02	0.01	0.01
Subtotal									**4.53**	**45.43**	**15.95**	**3.79**	**3.71**	**0.02**	**0.18**	**0.06**	**0.02**	**0.01**
Placing of Structural Section																		
Grader	2	8	16	0.040	0.713	0.151	0.086	0.061	0.64	11.41	2.42	1.38	0.98	0.01	0.09	0.02	0.01	0.01
Roller	2	8	16	0.067	0.862	0.304	0.067	0.050	1.07	13.79	4.86	1.07	0.80	0.01	0.11	0.04	0.01	0.01
Bulldozer	1	8	13	0.152	1.691	0.675	0.143	0.139	1.22	13.53	5.40	1.14	1.11	0.01	0.09	0.04	0.01	0.01
Dump Truck	10	8	13	0.001	0.020	0.004	0.000	0.001	0.51	16.29	2.88	0.24	0.53	0.00	0.07	0.01	0.00	0.00
Water Truck	1	8	16	0.192	4.166	1.794	0.454	0.256	1.54	33.33	14.35	3.63	2.05	0.01	0.27	0.11	0.03	0.02
Subtotal									**4.97**	**88.35**	**29.92**	**7.46**	**5.47**	**0.04**	**0.62**	**0.22**	**0.06**	**0.04**
Asphalt Concrete																		
Paving Machine	1	8	3	0.152	1.691	0.675	0.143	0.139	1.22	13.53	5.40	1.14	1.11	0.00	0.05	0.02	0.00	0.00
Dump Truck	13	8	3	0.001	0.020	0.004	0.000	0.001	0.66	21.18	3.75	0.31	0.69	0.00	0.08	0.01	0.00	0.00
Tack Truck	1	2	2	0.192	4.166	1.794	0.454	0.256	0.38	8.33	3.59	0.91	0.51	0.00	0.01	0.00	0.00	0.00
Steel Drum Roller	2	8	3	0.067	0.862	0.304	0.067	0.050	1.07	13.79	4.86	1.07	0.80	0.00	0.06	0.02	0.00	0.00
Rubber Tire Roller	1	8	3	0.067	0.862	0.304	0.067	0.050	0.54	6.90	2.43	0.54	0.40	0.00	0.03	0.01	0.00	0.00
Transfer Machine	1	8	3	0.152	1.691	0.675	0.143	0.139	1.22	13.53	5.40	1.14	1.11	0.00	0.05	0.02	0.00	0.00
Subtotal									**3.33**	**56.83**	**17.60**	**3.43**	**3.12**	**0.01**	**0.20**	**0.06**	**0.01**	**0.01**

Assumptions
Each dump truck is capable of hauling 12.5 CY
The borrow pit is a 10 miles round trip for each dump truck
2 round trips can be made per hour per dump truck
The bulldozers are Caterpillar D-9s or equivalent
The quantity of earth to be hauled for this phase is 200,000 CY
The water trucks have a capacity of 4000 gallons
The dump trucks have a capacity of 25 tons with a 1 hour round trip time
12990 CY of aggrgate are required for this phase
The paving crew is capable of laying 2200 tons of asphalt per 8 hour day
5340 tons of asphalt concrete is required for this phase
The dump trucks can haul 22 tons of asphalt and make one round trip per hour
The structural section is 4" of asphalt concrete and 21" of aggregate base

ESTIMATION OF EMISSIONS FROM CONSTRUCTION EQUIPMENT-EASTSIDE HANGER PHASE

	Horse-	Load	Hrs	Pieces of Equipment in Use Each Day												Hours (miles) per Equipment											
Equipment/Type	Power	Factor	Per/Day	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D
Smooth Drum Roller (CAT 563E)	150	0.59	8			1.1	2									0	0	88	160	0	0	0	0	0	0	0	0
Soil Compactor (CAT 825H)	401	0.43	8			0.14										0	0	11.2	0	0	0	0	0	0	0	0	0
Compactor (CAT 323C)	83	0.43	8													0	0	0	0	0	0	0	0	0	0	0	0
Motorgrader (CAT 14H)	257	0.54	8			0.69	1	0.23								0	0	55.2	80	18.4	0	0	0	0	0	0	0
Water Truck	225	0.25	8			1.84	2	0.23								0	0	147.2	160	18.4	0	0	0	0	0	0	0
Bulldozer (CAT D9T)	464	0.6	8			0.37		0.46								0	0	29.6	0	36.8	0	0	0	0	0	0	0
Bulldozer (CAT D6R)	210	0.6	8			0.55	1									0	0	44	80	0	0	0	0	0	0	0	0
Rubber Tire Loader (CAT 966G)	260	0.54	8													0	0	0	0	0	0	0	0	0	0	0	0
Rubber Tire Loader (CAT 950G)	196	0.54	8			0.14										0	0	11.2	0	0	0	0	0	0	0	0	0
Asphalt Spreader (CAT AP900B)	153	0.56	8					0.3								0	0	0	0	24	0	0	0	0	0	0	0
Vibratory Roller (CAT CB634D)	145	0.59	8					0.6								0	0	0	0	48	0	0	0	0	0	0	0
Rubber Tire Roller (CAT PS-360B)	105	0.59	8					0.3								0	0	0	0	24	0	0	0	0	0	0	0
Windrow Elevator (Barber-Green BG 650B)	107	0.56	8					0.3								0	0	0	0	24	0	0	0	0	0	0	0
Excavator (CAT 330CL)	247	0.59	8													0	0	0	0	0	0	0	0	0	0	0	0
Excavator (CAT 345C)	345	0.59	8			0.14										0	0	11.2	0	0	0	0	0	0	0	0	0
Tack Truck	225	0.25	8					0.3								0	0	0	0	24	0	0	0	0	0	0	0
Scraper (CAT 637G)	519	0.6	8			0.23		0.23								0	0	18.4	0	18.4	0	0	0	0	0	0	0
Dual Tandem Trucks			8			8.3	10	3.9								0	0	830	1000	390	0	0	0	0	0	0	0
Pickup Trucks			2			6	6	3								0	0	300	300	150	0	0	0	0	0	0	0
Major Project Component:				East Side Hangar and FBO Development												East Side Hangar and FBO Development											

Emissions (pounds per hour)					Emissions (pounds per day)					Emissions (tons per quarter)				
ROG	NOX	CO	SO2	PM10	ROG	NOX	CO	SO2	PM10	ROG	NOX	CO	SO2	PM10
0.067	0.862	0.304	0.067	0.050	1	14	5	1	1	0.0083	0.1069	0.0377	0.0083	0.0062
0.152	1.691	0.675	0.143	0.139	0	2	1	0	0	0.0009	0.0095	0.0038	0.0008	0.0008
0.152	1.691	0.675	0.143	0.139	0	0	0	0	0	0.0000	0.0000	0.0000	0.0000	0.0000
0.040	0.713	0.151	0.086	0.061	0	6	1	1	0	0.0031	0.0548	0.0116	0.0066	0.0047
0.192	4.166	1.794	0.454	0.256	3	67	29	7	4	0.0313	0.6782	0.2921	0.0739	0.0417
0.152	1.691	0.675	0.143	0.139	1	6	2	1	1	0.0050	0.0561	0.0224	0.0047	0.0046
0.152	1.691	0.675	0.143	0.139	1	14	5	1	1	0.0094	0.1048	0.0419	0.0089	0.0086
0.098	0.827	0.201	0.076	0.058	0	0	0	0	0	0.0000	0.0000	0.0000	0.0000	0.0000
0.098	0.827	0.201	0.076	0.058	0	1	0	0	0	0.0005	0.0046	0.0011	0.0004	0.0003
0.067	0.862	0.304	0.067	0.050	0	2	1	0	0	0.0008	0.0103	0.0036	0.0008	0.0006
0.067	0.862	0.304	0.067	0.050	0	4	1	0	0	0.0016	0.0207	0.0073	0.0016	0.0012
0.067	0.862	0.304	0.067	0.050	0	2	1	0	0	0.0008	0.0103	0.0036	0.0008	0.0006
0.152	1.691	0.675	0.143	0.139	0	4	2	0	0	0.0018	0.0203	0.0081	0.0017	0.0017
0.188	1.269	3.590	0.090	0.136	0	0	0	0	0	0.0000	0.0000	0.0000	0.0000	0.0000
0.188	1.269	3.590	0.090	0.136	0	1	4	0	0	0.0011	0.0071	0.0201	0.0005	0.0008
0.192	4.166	1.794	0.454	0.256	0	10	4	1	1	0.0023	0.0500	0.0215	0.0054	0.0031
0.282	3.840	1.257	0.463	0.406	1	7	2	1	1	0.0052	0.0707	0.0231	0.0085	0.0075
0.001	0.020	0.004	0.000	0.001	0	2	0	0	0	0.0007	0.0226	0.0040	0.0003	0.0007
0.001	0.002	0.014	0.000	0.000	0	0	0	0	0	0.0002	0.0008	0.0054	0.0000	0.0000
2.307	29.002	17.187	2.772	2.263	9	142	60	14	10	0.0730	1.2278	0.5074	0.1234	0.0830

ESTIMATION OF EMISSIONS FROM CONSTRUCTION EQUIPMENT-EASTSIDE HANGER PHASE

	Horse-	Load	Hrs	Pieces of Equipment in Use Each Day												Hours (miles) per Equipment											
Equipment/Type	Power	Factor	Per/Day	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D
Smooth Drum Roller (CAT 563E)	150	0.59	8			1.1	2									0	0	88	160	0	0	0	0	0	0	0	0
Soil Compactor (CAT 825H)	401	0.43	8			0.14										0	0	11.2	0	0	0	0	0	0	0	0	0
Compactor (CAT 323C)	83	0.43	8													0	0	0	0	0	0	0	0	0	0	0	0
Motorgrader (CAT 14H)	257	0.54	8			0.69	1	0.23								0	0	55.2	80	18.4	0	0	0	0	0	0	0
Water Truck	225	0.25	8			1.84	2	0.23								0	0	147.2	160	18.4	0	0	0	0	0	0	0
Bulldozer (CAT D9T)	464	0.6	8			0.37		0.46								0	0	29.6	0	36.8	0	0	0	0	0	0	0
Bulldozer (CAT D6R)	210	0.6	8			0.55	1									0	0	44	80	0	0	0	0	0	0	0	0
Rubber Tire Loader (CAT 966G)	260	0.54	8													0	0	0	0	0	0	0	0	0	0	0	0
Rubber Tire Loader (CAT 950G)	196	0.54	8			0.14										0	0	11.2	0	0	0	0	0	0	0	0	0
Asphalt Spreader (CAT AP900B)	153	0.56	8					0.3								0	0	0	0	24	0	0	0	0	0	0	0
Vibratory Roller (CAT CB634D)	145	0.59	8					0.6								0	0	0	0	48	0	0	0	0	0	0	0
Rubber Tire Roller (CAT PS-360B)	105	0.59	8					0.3								0	0	0	0	24	0	0	0	0	0	0	0
Windrow Elevator (Barber-Green BG 650B)	107	0.56	8					0.3								0	0	0	0	24	0	0	0	0	0	0	0
Excavator (CAT 330CL)	247	0.59	8													0	0	0	0	0	0	0	0	0	0	0	0
Excavator (CAT 345C)	345	0.59	8			0.14										0	0	11.2	0	0	0	0	0	0	0	0	0
Tack Truck	225	0.25	8					0.3								0	0	0	0	24	0	0	0	0	0	0	0
Scraper (CAT 637G)	519	0.6	8			0.23		0.23								0	0	18.4	0	18.4	0	0	0	0	0	0	0
Dual Tandem Trucks			8			8.3	10	3.9								0	0	830	1000	390	0	0	0	0	0	0	0
Pickup Trucks			2			6	6	3								0	0	300	300	150	0	0	0	0	0	0	0
Major Project Component:				East Side Hangar and FBO Development												East Side Hangar and FBO Development											

Emissions (pounds per hour)					Emissions (pounds per day)					Emissions (tons per quarter)				
ROG	NOX	CO	SO2	PM10	ROG	NOX	CO	SO2	PM10	ROG	NOX	CO	SO2	PM10
0.067	0.862	0.304	0.067	0.050	1	14	5	1	1	0.0083	0.1069	0.0377	0.0083	0.0062
0.152	1.691	0.675	0.143	0.139	0	2	1	0	0	0.0009	0.0095	0.0038	0.0008	0.0008
0.152	1.691	0.675	0.143	0.139	0	0	0	0	0	0.0000	0.0000	0.0000	0.0000	0.0000
0.040	0.713	0.151	0.086	0.061	0	6	1	1	0	0.0031	0.0548	0.0116	0.0066	0.0047
0.192	4.166	1.794	0.454	0.256	3	67	29	7	4	0.0313	0.6782	0.2921	0.0739	0.0417
0.152	1.691	0.675	0.143	0.139	1	6	2	1	1	0.0050	0.0561	0.0224	0.0047	0.0046
0.152	1.691	0.675	0.143	0.139	1	14	5	1	1	0.0094	0.1048	0.0419	0.0089	0.0086
0.098	0.827	0.201	0.076	0.058	0	0	0	0	0	0.0000	0.0000	0.0000	0.0000	0.0000
0.098	0.827	0.201	0.076	0.058	0	1	0	0	0	0.0005	0.0046	0.0011	0.0004	0.0003
0.067	0.862	0.304	0.067	0.050	0	2	1	0	0	0.0008	0.0103	0.0036	0.0008	0.0006
0.067	0.862	0.304	0.067	0.050	0	4	1	0	0	0.0016	0.0207	0.0073	0.0016	0.0012
0.067	0.862	0.304	0.067	0.050	0	2	1	0	0	0.0008	0.0103	0.0036	0.0008	0.0006
0.152	1.691	0.675	0.143	0.139	0	4	2	0	0	0.0018	0.0203	0.0081	0.0017	0.0017
0.188	1.269	3.590	0.090	0.136	0	0	0	0	0	0.0000	0.0000	0.0000	0.0000	0.0000
0.188	1.269	3.590	0.090	0.136	0	1	4	0	0	0.0011	0.0071	0.0201	0.0005	0.0008
0.192	4.166	1.794	0.454	0.256	0	10	4	1	1	0.0023	0.0500	0.0215	0.0054	0.0031
0.282	3.840	1.257	0.463	0.406	1	7	2	1	1	0.0052	0.0707	0.0231	0.0085	0.0075
0.001	0.020	0.004	0.000	0.001	0	2	0	0	0	0.0007	0.0226	0.0040	0.0003	0.0007
0.001	0.002	0.014	0.000	0.000	0	0	0	0	0	0.0002	0.0008	0.0054	0.0000	0.0000
2.307	29.002	17.187	2.772	2.263	9	142	60	14	10	0.0730	1.2278	0.5074	0.1234	0.0830

ESTIMATION OF EMISSIONS FROM CONSTRUCTION EQUIPMENT-WESTSIDE HANGER PHASE

	Horse-	Load	Hrs	Pieces of Equipment in Use Each Day												Hours (miles) per Equipment											
Equipment/Type	Power	Factor	Per/Day	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D
Smooth Drum Roller (CAT 563E)	150	0.59	8			1.1	2									0	0	88	160	0	0	0	0	0	0	0	0
Soil Compactor (CAT 825H)	401	0.43	8			0.14										0	0	11.2	0	0	0	0	0	0	0	0	0
Compactor (CAT 323C)	83	0.43	8													0	0	0	0	0	0	0	0	0	0	0	0
Motorgrader (CAT 14H)	257	0.54	8			0.69	1	0.23								0	0	55.2	80	18.4	0	0	0	0	0	0	0
Water Truck	225	0.25	8			1.84	2	0.23								0	0	147.2	160	18.4	0	0	0	0	0	0	0
Bulldozer (CAT D9T)	464	0.6	8			0.37		0.46								0	0	29.6	0	36.8	0	0	0	0	0	0	0
Bulldozer (CAT D6R)	210	0.6	8			0.55	1									0	0	44	80	0	0	0	0	0	0	0	0
Rubber Tire Loader (CAT 966G)	260	0.54	8													0	0	0	0	0	0	0	0	0	0	0	0
Rubber Tire Loader (CAT 950G)	196	0.54	8			0.14										0	0	11.2	0	0	0	0	0	0	0	0	0
Asphalt Spreader (CAT AP900B)	153	0.56	8					0.3								0	0	0	0	24	0	0	0	0	0	0	0
Vibratory Roller (CAT CB634D)	145	0.59	8					0.6								0	0	0	0	48	0	0	0	0	0	0	0
Rubber Tire Roller (CAT PS-360B)	105	0.59	8					0.3								0	0	0	0	24	0	0	0	0	0	0	0
Windrow Elevator (Barber-Green BG 650B)	107	0.56	8					0.3								0	0	0	0	24	0	0	0	0	0	0	0
Excavator (CAT 330CL)	247	0.59	8													0	0	0	0	0	0	0	0	0	0	0	0
Excavator (CAT 345C)	345	0.59	8			0.14										0	0	11.2	0	0	0	0	0	0	0	0	0
Tack Truck	225	0.25	8					0.3								0	0	0	0	24	0	0	0	0	0	0	0
Scraper (CAT 637G)	519	0.6	8			0.23		0.23								0	0	18.4	0	18.4	0	0	0	0	0	0	0
Dual Tandem Trucks			8			8.3	10	3.9								0	0	830	1000	390	0	0	0	0	0	0	0
Pickup Trucks			2			6	6	3								0	0	300	300	150	0	0	0	0	0	0	0
Major Project Component:				West Side Hangar Development												West Side Hangar Development											

Emissions (pounds per hour)					Emissions (pounds per day)					Emissions (tons per quarter)				
ROG	NOX	CO	SO2	PM10	ROG	NOX	CO	SO2	PM10	ROG	NOX	CO	SO2	PM10
0.067	0.862	0.304	0.067	0.050	1	14	5	1	1	0.0083	0.1069	0.0377	0.0083	0.0062
0.152	1.691	0.675	0.143	0.139	0	2	1	0	0	0.0009	0.0095	0.0038	0.0008	0.0008
0.152	1.691	0.675	0.143	0.139	0	0	0	0	0	0.0000	0.0000	0.0000	0.0000	0.0000
0.040	0.713	0.151	0.086	0.061	0	6	1	1	0	0.0031	0.0548	0.0116	0.0066	0.0047
0.192	4.166	1.794	0.454	0.256	3	67	29	7	4	0.0313	0.6782	0.2921	0.0739	0.0417
0.152	1.691	0.675	0.143	0.139	1	6	2	1	1	0.0050	0.0561	0.0224	0.0047	0.0046
0.152	1.691	0.675	0.143	0.139	1	14	5	1	1	0.0094	0.1048	0.0419	0.0089	0.0086
0.098	0.827	0.201	0.076	0.058	0	0	0	0	0	0.0000	0.0000	0.0000	0.0000	0.0000
0.098	0.827	0.201	0.076	0.058	0	1	0	0	0	0.0005	0.0046	0.0011	0.0004	0.0003
0.067	0.862	0.304	0.067	0.050	0	2	1	0	0	0.0008	0.0103	0.0036	0.0008	0.0006
0.067	0.862	0.304	0.067	0.050	0	4	1	0	0	0.0016	0.0207	0.0073	0.0016	0.0012
0.067	0.862	0.304	0.067	0.050	0	2	1	0	0	0.0008	0.0103	0.0036	0.0008	0.0006
0.152	1.691	0.675	0.143	0.139	0	4	2	0	0	0.0018	0.0203	0.0081	0.0017	0.0017
0.188	1.269	3.590	0.090	0.136	0	0	0	0	0	0.0000	0.0000	0.0000	0.0000	0.0000
0.188	1.269	3.590	0.090	0.136	0	1	4	0	0	0.0011	0.0071	0.0201	0.0005	0.0008
0.192	4.166	1.794	0.454	0.256	0	10	4	1	1	0.0023	0.0500	0.0215	0.0054	0.0031
0.282	3.840	1.257	0.463	0.406	1	7	2	1	1	0.0052	0.0707	0.0231	0.0085	0.0075
0.001	0.020	0.004	0.000	0.001	0	2	0	0	0	0.0007	0.0226	0.0040	0.0003	0.0007
0.001	0.002	0.014	0.000	0.000	0	0	0	0	0	0.0002	0.0008	0.0054	0.0000	0.0000
2.307	29.002	17.187	2.772	2.263	8.7980	141.6408	59.6123	13.9980	9.6246	0.0730	1.2278	0.5074	0.1234	0.0830

ESTIMATION OF EMISSIONS FROM CONSTRUCTION EQUIPMENT-WESTSIDE HANGER PHASE

	Horse-	Load	Hrs	Pieces of Equipment in Use Each Day												Hours (miles) per Equipment											
Equipment/Type	Power	Factor	Per/Day	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D
Smooth Drum Roller (CAT 563E)	150	0.59	8			1.1	2									0	0	88	160	0	0	0	0	0	0	0	0
Soil Compactor (CAT 825H)	401	0.43	8			0.14										0	0	11.2	0	0	0	0	0	0	0	0	0
Compactor (CAT 323C)	83	0.43	8													0	0	0	0	0	0	0	0	0	0	0	0
Motorgrader (CAT 14H)	257	0.54	8			0.69	1	0.23								0	0	55.2	80	18.4	0	0	0	0	0	0	0
Water Truck	225	0.25	8			1.84	2	0.23								0	0	147.2	160	18.4	0	0	0	0	0	0	0
Bulldozer (CAT D9T)	464	0.6	8			0.37		0.46								0	0	29.6	0	36.8	0	0	0	0	0	0	0
Bulldozer (CAT D6R)	210	0.6	8			0.55	1									0	0	44	80	0	0	0	0	0	0	0	0
Rubber Tire Loader (CAT 966G)	260	0.54	8													0	0	0	0	0	0	0	0	0	0	0	0
Rubber Tire Loader (CAT 950G)	196	0.54	8			0.14										0	0	11.2	0	0	0	0	0	0	0	0	0
Asphalt Spreader (CAT AP900B)	153	0.56	8					0.3								0	0	0	0	24	0	0	0	0	0	0	0
Vibratory Roller (CAT CB634D)	145	0.59	8					0.6								0	0	0	0	48	0	0	0	0	0	0	0
Rubber Tire Roller (CAT PS-360B)	105	0.59	8					0.3								0	0	0	0	24	0	0	0	0	0	0	0
Windrow Elevator (Barber-Green BG 650B)	107	0.56	8					0.3								0	0	0	0	24	0	0	0	0	0	0	0
Excavator (CAT 330CL)	247	0.59	8													0	0	0	0	0	0	0	0	0	0	0	0
Excavator (CAT 345C)	345	0.59	8			0.14										0	0	11.2	0	0	0	0	0	0	0	0	0
Tack Truck	225	0.25	8					0.3								0	0	0	0	24	0	0	0	0	0	0	0
Scraper (CAT 637G)	519	0.6	8			0.23		0.23								0	0	18.4	0	18.4	0	0	0	0	0	0	0
Dual Tandem Trucks			8			8.3	10	3.9								0	0	830	1000	390	0	0	0	0	0	0	0
Pickup Trucks			2			6	6	3								0	0	300	300	150	0	0	0	0	0	0	0
Major Project Component:				West Side Hangar Development												West Side Hangar Development											

Emissions (pounds per hour)					Emissions (pounds per day)					Emissions (tons per quarter)				
ROG	NOX	CO	SO2	PM10	ROG	NOX	CO	SO2	PM10	ROG	NOX	CO	SO2	PM10
0.067	0.862	0.304	0.067	0.050	1	14	5	1	1	0.0083	0.1069	0.0377	0.0083	0.0062
0.152	1.691	0.675	0.143	0.139	0	2	1	0	0	0.0009	0.0095	0.0038	0.0008	0.0008
0.152	1.691	0.675	0.143	0.139	0	0	0	0	0	0.0000	0.0000	0.0000	0.0000	0.0000
0.040	0.713	0.151	0.086	0.061	0	6	1	1	0	0.0031	0.0548	0.0116	0.0066	0.0047
0.192	4.166	1.794	0.454	0.256	3	67	29	7	4	0.0313	0.6782	0.2921	0.0739	0.0417
0.152	1.691	0.675	0.143	0.139	1	6	2	1	1	0.0050	0.0561	0.0224	0.0047	0.0046
0.152	1.691	0.675	0.143	0.139	1	14	5	1	1	0.0094	0.1048	0.0419	0.0089	0.0086
0.098	0.827	0.201	0.076	0.058	0	0	0	0	0	0.0000	0.0000	0.0000	0.0000	0.0000
0.098	0.827	0.201	0.076	0.058	0	1	0	0	0	0.0005	0.0046	0.0011	0.0004	0.0003
0.067	0.862	0.304	0.067	0.050	0	2	1	0	0	0.0008	0.0103	0.0036	0.0008	0.0006
0.067	0.862	0.304	0.067	0.050	0	4	1	0	0	0.0016	0.0207	0.0073	0.0016	0.0012
0.067	0.862	0.304	0.067	0.050	0	2	1	0	0	0.0008	0.0103	0.0036	0.0008	0.0006
0.152	1.691	0.675	0.143	0.139	0	4	2	0	0	0.0018	0.0203	0.0081	0.0017	0.0017
0.188	1.269	3.590	0.090	0.136	0	0	0	0	0	0.0000	0.0000	0.0000	0.0000	0.0000
0.188	1.269	3.590	0.090	0.136	0	1	4	0	0	0.0011	0.0071	0.0201	0.0005	0.0008
0.192	4.166	1.794	0.454	0.256	0	10	4	1	1	0.0023	0.0500	0.0215	0.0054	0.0031
0.282	3.840	1.257	0.463	0.406	1	7	2	1	1	0.0052	0.0707	0.0231	0.0085	0.0075
0.001	0.020	0.004	0.000	0.001	0	2	0	0	0	0.0007	0.0226	0.0040	0.0003	0.0007
0.001	0.002	0.014	0.000	0.000	0	0	0	0	0	0.0002	0.0008	0.0054	0.0000	0.0000
2.307	29.002	17.187	2.772	2.263	8.7980	141.6408	59.6123	13.9980	9.6246	0.0730	1.2278	0.5074	0.1234	0.0830

ESTIMATION OF EMISSIONS FROM CONSTRUCTION EQUIPMENT-TERMINAL APRON PHASE

	Horse-	Load	Hrs	Pieces of Equipment in Use Each Day												Hours (miles) per Equipment											
Equipment/Type	Power	Factor	Per/Day	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D
Smooth Drum Roller (CAT 563E)	150	0.59	8				0.54									0	0	0	43.2	0	0	0	0	0	0	0	0
Soil Compactor (CAT 825H)	401	0.43	8			0.68	0.9									0	0	54.4	72	0	0	0	0	0	0	0	0
Compactor (CAT 323C)	83	0.43	8			0.42										0	0	33.6	0	0	0	0	0	0	0	0	0
Motorgrader (CAT 14H)	257	0.54	8			0.68	0.72	0.14								0	0	54.4	57.6	11.2	0	0	0	0	0	0	0
Water Truck	225	0.25	8			1.1	1.44	0.14								0	0	88	115.2	11.2	0	0	0	0	0	0	0
Bulldozer (CAT D9T)	464	0.6	8			0.56										0	0	44.8	0	0	0	0	0	0	0	0	0
Bulldozer (CAT D6R)	210	0.6	8			0.32	0.72	0.28								0	0	25.6	57.6	22.4	0	0	0	0	0	0	0
Rubber Tire Loader (CAT 966G)	260	0.54	8			0.36										0	0	28.8	0	0	0	0	0	0	0	0	0
Rubber Tire Loader (CAT 950G)	196	0.54	8			0.84		0.14								0	0	67.2	0	11.2	0	0	0	0	0	0	0
Asphalt Spreader (CAT AP900B)	153	0.56	8				0.1									0	0	0	8	0	0	0	0	0	0	0	0
Vibratory Roller (CAT CB634D)	145	0.59	8				0.2									0	0	0	16	0	0	0	0	0	0	0	0
Rubber Tire Roller (CAT PS-360B)	105	0.59	8				0.1									0	0	0	8	0	0	0	0	0	0	0	0
Windrow Elevator (Barber-Green BG 650B)	107	0.56	8				0.1									0	0	0	8	0	0	0	0	0	0	0	0
Excavator (CAT 330CL)	247	0.59	8			0.36										0	0	28.8	0	0	0	0	0	0	0	0	0
Excavator (CAT 345C)	345	0.59	8			0.84										0	0	67.2	0	0	0	0	0	0	0	0	0
Tack Truck	225	0.25	8				0.1									0	0	0	8	0	0	0	0	0	0	0	0
Scraper (CAT 637G)	519	0.6	8													0	0	0	0	0	0	0	0	0	0	0	0
Concrete Paving Operation	500	0.56	8				0.18	0.68								0	0	0	14.4	54.4	0	0	0	0	0	0	0
Dual Tandem Trucks			8			12.08	9.22	2.72								0	0	1208	922	272	0	0	0	0	0	0	0
Pickup Trucks			2			6	6	6								0	0	300	300	300	0	0	0	0	0	0	0
Major Project Component:				Terminal Apron												Terminal Apron											

Emissions (pounds per hour)					Emissions (pounds per day)					Emissions (tons per quarter)				
ROG	NOX	CO	SO2	PM10	ROG	NOX	CO	SO2	PM10	ROG	NOX	CO	SO2	PM10
0.067	0.862	0.304	0.067	0.050	0	4	1	0	0	0.0014	0.0186	0.0066	0.0014	0.0011
0.152	1.691	0.675	0.143	0.139	1	12	5	1	1	0.0096	0.1069	0.0427	0.0090	0.0088
0.152	1.691	0.675	0.143	0.139	1	6	2	0	0	0.0026	0.0284	0.0113	0.0024	0.0023
0.040	0.713	0.151	0.086	0.061	0	4	1	0	0	0.0025	0.0439	0.0093	0.0053	0.0038
0.192	4.166	1.794	0.454	0.256	2	48	21	5	3	0.0206	0.4466	0.1923	0.0487	0.0274
0.152	1.691	0.675	0.143	0.139	1	8	3	1	1	0.0034	0.0379	0.0151	0.0032	0.0031
0.152	1.691	0.675	0.143	0.139	1	10	4	1	1	0.0080	0.0893	0.0356	0.0076	0.0073
0.098	0.827	0.201	0.076	0.058	0	2	1	0	0	0.0014	0.0119	0.0029	0.0011	0.0008
0.098	0.827	0.201	0.076	0.058	1	6	1	1	0	0.0038	0.0324	0.0079	0.0030	0.0023
0.067	0.862	0.304	0.067	0.050	0	1	0	0	0	0.0003	0.0034	0.0012	0.0003	0.0002
0.067	0.862	0.304	0.067	0.050	0	1	0	0	0	0.0005	0.0069	0.0024	0.0005	0.0004
0.067	0.862	0.304	0.067	0.050	0	1	0	0	0	0.0003	0.0034	0.0012	0.0003	0.0002
0.152	1.691	0.675	0.143	0.139	0	1	1	0	0	0.0006	0.0068	0.0027	0.0006	0.0006
0.188	1.269	3.590	0.090	0.136	1	4	10	0	0	0.0027	0.0183	0.0517	0.0013	0.0020
0.188	1.269	3.590	0.090	0.136	1	9	24	1	1	0.0063	0.0426	0.1206	0.0030	0.0046
0.192	4.166	1.794	0.454	0.256	0	3	1	0	0	0.0008	0.0167	0.0072	0.0018	0.0010
0.282	3.840	1.257	0.463	0.406	0	0	0	0	0	0.0000	0.0000	0.0000	0.0000	0.0000
0.282	3.840	1.257	0.463	0.406	2	21	7	3	2	0.0097	0.1321	0.0432	0.0159	0.0140
0.001	0.020	0.004	0.000	0.001	0	2	0	0	0	0.0008	0.0245	0.0043	0.0004	0.0008
0.001	0.002	0.014	0.000	0.000	0	0	0	0	0	0.0003	0.0009	0.0065	0.0000	0.0000
2.589	32.842	18.444	3.235	2.669	10.7562	141.9735	83.9380	13.8296	11.0377	0.0755	1.0715	0.5648	0.1057	0.0807

ESTIMATION OF EMISSIONS FROM CONSTRUCTION EQUIPMENT-TERMINAL APRON PHASE

	Horse-	Load	Hrs	Pieces of Equipment in Use Each Day												Hours (miles) per Equipment											
Equipment/Type	Power	Factor	Per/Day	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D
Smooth Drum Roller (CAT 563E)	150	0.59	8				0.54									0	0	0	43.2	0	0	0	0	0	0	0	0
Soil Compactor (CAT 825H)	401	0.43	8			0.68	0.9									0	0	54.4	72	0	0	0	0	0	0	0	0
Compactor (CAT 323C)	83	0.43	8			0.42										0	0	33.6	0	0	0	0	0	0	0	0	0
Motorgrader (CAT 14H)	257	0.54	8			0.68	0.72	0.14								0	0	54.4	57.6	11.2	0	0	0	0	0	0	0
Water Truck	225	0.25	8			1.1	1.44	0.14								0	0	88	115.2	11.2	0	0	0	0	0	0	0
Bulldozer (CAT D9T)	464	0.6	8			0.56										0	0	44.8	0	0	0	0	0	0	0	0	0
Bulldozer (CAT D6R)	210	0.6	8			0.32	0.72	0.28								0	0	25.6	57.6	22.4	0	0	0	0	0	0	0
Rubber Tire Loader (CAT 966G)	260	0.54	8			0.36										0	0	28.8	0	0	0	0	0	0	0	0	0
Rubber Tire Loader (CAT 950G)	196	0.54	8			0.84		0.14								0	0	67.2	0	11.2	0	0	0	0	0	0	0
Asphalt Spreader (CAT AP900B)	153	0.56	8				0.1									0	0	0	8	0	0	0	0	0	0	0	0
Vibratory Roller (CAT CB634D)	145	0.59	8				0.2									0	0	0	16	0	0	0	0	0	0	0	0
Rubber Tire Roller (CAT PS-360B)	105	0.59	8				0.1									0	0	0	8	0	0	0	0	0	0	0	0
Windrow Elevator (Barber-Green BG 650B)	107	0.56	8				0.1									0	0	0	8	0	0	0	0	0	0	0	0
Excavator (CAT 330CL)	247	0.59	8			0.36										0	0	28.8	0	0	0	0	0	0	0	0	0
Excavator (CAT 345C)	345	0.59	8			0.84										0	0	67.2	0	0	0	0	0	0	0	0	0
Tack Truck	225	0.25	8				0.1									0	0	0	8	0	0	0	0	0	0	0	0
Scraper (CAT 637G)	519	0.6	8													0	0	0	0	0	0	0	0	0	0	0	0
Concrete Paving Operation	500	0.56	8				0.18	0.68								0	0	0	14.4	54.4	0	0	0	0	0	0	0
Dual Tandem Trucks			8			12.08	9.22	2.72								0	0	1208	922	272	0	0	0	0	0	0	0
Pickup Trucks			2			6	6	6								0	0	300	300	300	0	0	0	0	0	0	0
Major Project Component:				Terminal Apron												Terminal Apron											

Emissions (pounds per hour)					Emissions (pounds per day)					Emissions (tons per quarter)				
ROG	NOX	CO	SO2	PM10	ROG	NOX	CO	SO2	PM10	ROG	NOX	CO	SO2	PM10
0.067	0.862	0.304	0.067	0.050	0	4	1	0	0	0.0014	0.0186	0.0066	0.0014	0.0011
0.152	1.691	0.675	0.143	0.139	1	12	5	1	1	0.0096	0.1069	0.0427	0.0090	0.0088
0.152	1.691	0.675	0.143	0.139	1	6	2	0	0	0.0026	0.0284	0.0113	0.0024	0.0023
0.040	0.713	0.151	0.086	0.061	0	4	1	0	0	0.0025	0.0439	0.0093	0.0053	0.0038
0.192	4.166	1.794	0.454	0.256	2	48	21	5	3	0.0206	0.4466	0.1923	0.0487	0.0274
0.152	1.691	0.675	0.143	0.139	1	8	3	1	1	0.0034	0.0379	0.0151	0.0032	0.0031
0.152	1.691	0.675	0.143	0.139	1	10	4	1	1	0.0080	0.0893	0.0356	0.0076	0.0073
0.098	0.827	0.201	0.076	0.058	0	2	1	0	0	0.0014	0.0119	0.0029	0.0011	0.0008
0.098	0.827	0.201	0.076	0.058	1	6	1	1	0	0.0038	0.0324	0.0079	0.0030	0.0023
0.067	0.862	0.304	0.067	0.050	0	1	0	0	0	0.0003	0.0034	0.0012	0.0003	0.0002
0.067	0.862	0.304	0.067	0.050	0	1	0	0	0	0.0005	0.0069	0.0024	0.0005	0.0004
0.067	0.862	0.304	0.067	0.050	0	1	0	0	0	0.0003	0.0034	0.0012	0.0003	0.0002
0.152	1.691	0.675	0.143	0.139	0	1	1	0	0	0.0006	0.0068	0.0027	0.0006	0.0006
0.188	1.269	3.590	0.090	0.136	1	4	10	0	0	0.0027	0.0183	0.0517	0.0013	0.0020
0.188	1.269	3.590	0.090	0.136	1	9	24	1	1	0.0063	0.0426	0.1206	0.0030	0.0046
0.192	4.166	1.794	0.454	0.256	0	3	1	0	0	0.0008	0.0167	0.0072	0.0018	0.0010
0.282	3.840	1.257	0.463	0.406	0	0	0	0	0	0.0000	0.0000	0.0000	0.0000	0.0000
0.282	3.840	1.257	0.463	0.406	2	21	7	3	2	0.0097	0.1321	0.0432	0.0159	0.0140
0.001	0.020	0.004	0.000	0.001	0	2	0	0	0	0.0008	0.0245	0.0043	0.0004	0.0008
0.001	0.002	0.014	0.000	0.000	0	0	0	0	0	0.0003	0.0009	0.0065	0.0000	0.0000
2.589	32.842	18.444	3.235	2.669	10.7562	141.9735	83.9380	13.8296	11.0377	0.0755	1.0715	0.5648	0.1057	0.0807

Construction Dust Estimates
Proposed Action

Project	Area (acres)	Area (square feet)
Roadway	2.0	
Taxiway M	5.5	240000
Taxiway A	5.5	240000
Runway 11	5.5	240000
Eastside Hanger	2.0	
Westside Hanger	2.0	
Terminal Apron	2.0	

Worst Case	Subtotal	7.5	acres
	Annual (over 4 months)	7.5	acres per month
	Assuming one-month grading:	526	lb/day
	Quarter and Annual	6.6	tons
Worst Case	Subtotal	2.0	acres
	Annual (over 4 months)	2.0	acres per month
	Assuming one-month grading:	140	lb/day
	Quarter and Annual	1.8	tons
Worst Case	Subtotal	5.5	acres
	Annual (over 4 months)	5.5	acres per month
	Assuming one-month grading:	385	lb/day
	Quarter and Annual	4.8	tons

Fugitive particulate matter emissions are expected from the handling and storage of raw materials and wind erosion during construction. Fugitive dust emissions were quantified according to the methodologies specified in the *CEQA Air Quality Handbook*. The fugitive dust emissions were based on the assumption that an area twice the size of the Proposed Action footprint would be disturbed at one time.

Emission factors for all equipment except pickup and haul trucks were obtained from the *CEQA Air Quality Handbook* published by the San Luis Obispo County Air Pollution Control District. Emission factors for pickup and haul trucks were obtained from the CARB's EMFAC2002 motor vehicle emission model. Table F-2 presents the estimated construction emissions by project component for the construction activities associated with the Proposed Action.

TABLE F-2
CONSTRUCTION EMISSIONS

Subproject	ROG	NOx	CO	SO2	PM10
Daily (pounds)					
Roadway	4	59	22	6	144
Taxiway M	28	401	140	47	44
Taxiway A	28	401	140	47	44
Runway 11	9	154	53	13	15
Eastside Hangar	9	142	60	14	150
Westside Hangar	9	142	60	14	150
Terminal Apron	11	142	84	14	151
Worst-case Phase I Total	28	**401**	140	47	159
Worst-case Phase II Total	28	**401**	140	47	159
Significance Threshold	185	185	--	--	--
Quarter (tons)					
Roadway	0.03	0.47	0.17	0.05	1.78
Taxiway M	0.37	5.27	1.84	0.61	5.31
Taxiway A	0.36	5.24	1.83	0.60	5.31
Runway 11	0.31	4.97	1.73	0.41	5.13
Eastside Hangar	0.07	1.23	0.51	0.12	1.83
Westside Hangar	0.07	1.23	0.51	0.12	1.83
Terminal Apron	0.08	1.07	0.56	0.11	1.83
Worst-case Phase I Total	0.37	**5.45**	1.90	0.61	**6.91**
Worst-case Phase II Total	0.37	**5.27**	1.84	0.61	**5.31**
Significance Threshold	2.5/6.0	2.5/6.0	--	--	2.5

Operational Emissions

The emission inventories were prepared using the FAA's Emissions and Dispersion Modeling System (EDMS - Version 4.3, dated August 2005). FAA requires that EDMS be used for the evaluation of airport projects. The USEPA has approved EDMS and included use of the model in their *Guidance on Air Quality Models* (40 CFR Part 51). The aircraft emission factors included in the EDMS are based on the methodology and emission factors provided in USEPA's *Compilation of Air Pollutant Emission Factors and Procedures for Emission Inventory Preparation*, *Volume IV: Mobile Sources* and the International Civil Aviation Organization (ICAO) *Aircraft Engine Exhaust Emissions Data Bank*.

EDMS calculates emission inventories using source-specific emission factors and user-provided source activity levels. The source-specific emission factors are expressed in units of measure by source activity type. For example, total aircraft emissions are a function of the time each aircraft spends in the approach, climb out, takeoff, taxi and idle (or ground delay) modes of a landing and takeoff cycle. EDMS contains emission factors for each of these aircraft operational modes for individual types of aircraft.

The following provides information regarding the airport-specific information used in the EDMS to calculate the emission inventories at San Luis Obisbo County Regional Airport. This pertinent information includes aircraft type, engine assignments, activity levels and fleet mix, emission factors, time in operating modes, assignments of ground support equipment, as well as motor vehicle fleet mix, travel distance, speed, and emission factors.

Aircraft Emissions

Activity Levels and Fleet Mixes

Fleet mix is one of the more important factors that determine air quality emissions. Generally, the fleet mix was separated into two categories: air carriers and general aviation. General aviation was further separated into local, itinerant, and military operations as well as being separated into single engine, multi-engine, and helicopter aircraft types. The fleet mix, along with the annual operations per aircraft, is shown in Table F-3. The aircraft fleet/operational level data used in the air quality analysis are consistent (as much as possible given the difference between the modeling tools) with those used to assess noise impacts.

Aircraft Emission Factors

The FAA's EDMS contains a database of aircraft engine-specific emission factors based on engine make and model and the four engine operational modes (taxi/idle, takeoff, climbout, and approach). EDMS also contains a database of emission factors for ground support equipment and aircraft auxiliary power units.

Aircraft emissions estimates take into account the time that an aircraft is in operation, which is referred to as a landing/takeoff cycle (LTO). An LTO cycle is subdivided into the following four phases or modes:

- "Taxi/Idle" includes all time when the aircraft is taxiing between the runway and terminal or hangar/tiedown location and includes all ground-based delay incurred during this period.
- "Approach" begins when the aircraft descends below the atmospheric mixing zone height and ends when the aircraft touches down on the runway.
- "Takeoff" begins when full power is applied to the aircraft and ends when the aircraft reaches approximately 500 to 1,000 feet where the pilot typically powers back for a gradual ascent.
- "Climbout" begins when the aircraft powers back from takeoff mode and ascends above the atmospheric mixing zone height.

Particulate matter emissions were estimated (within EDMS) using the following formula which relates aircraft engine specific smoke numbers[1]. The term "smoke number" is a dimensionless term to describe the quantification of smoke emissions, which relate to opacity, to black carbon particulate matter emissions:

$$EIPM = 2.4 \times SN^{1.8} \times FF$$

where:

EIPM = Particulate Matter Emission Index per engine mode, in milligrams/second per engine type

SN = ICAO reported smoke number, unitless

FF = ICAO fuel flow by mode and aircraft type, in kilograms per second

The equation above provides an approximation of the amount of jet aircraft-related particulate matter but accounts for the fact that there is limited available emission testing data for aircraft engines. The calculation uses smoke numbers, which are available for most aircraft engines.

To account for the volatile portion of the aircraft-related particulate matter emissions, the First Order Approximation increases the level of emissions calculated with smoke numbers by a factor of four[2]. The fraction of particulate matter 10 microns or less in size which is considered to be particulate matter 2.5 microns or less in size was assumed to be 100 percent.

The EDMS uses atmospheric mixing height data to approximately the appropriate level in the atmosphere where aircraft emissions would have no discernable impact on ground level emissions. For this purpose, a mixing height of 3,000 feet above ground level was used.

1 ICAO Annex 16, Volume 2, Part III, Appendix 3, July 1993 with Amendments V13 (www.QinetiQ.com/aviation_emissions_databank)

2 FAA Memorandum, Use of the First Order Approximation to Estimate Aircraft Engine Particulate Matter Emissions in NEPA Documents and Clean Air Act General Conformity Analyses, May 24, 2005.

TABLE F-3
ANNUAL AIRCRAFT ACTIVITY AND FLEET MIX (IN NUMBER OF AIRCRAFT OPERATIONS)

EDMS ID	Aircraft	Engine	Baseline Condition	2010 No Action Alternative	2010 Proposed Action	2023 Proposed Action
AC1	EMB-120	PW118	7,300	6,800	2,552	--
AC2	SF-340-A	CT7-5	4,380	4,081	1,456	--
AC3	DHC-8-400	PW123	--	1,672	1,336	--
AC4	CL600	ALF 502L-2	730	836	1,602	3,000
AC5	REG'L JET 200	CF34-3B	2,920	3,351	4,008	7,500
AC6	Embraer ERJ 170	CF34-8E5	--	--	2,406	4,500
GA1	CITATION II	JT15D-4 (B,C,D)	1,512	1,610	1,610	1,891
GA2	CITATION X	AE3007C (Type 1)	408	435	435	510
GA3	Citation VII	TFE731-3	480	511	511	600
GA4	Learjet 35/36	TFE 731-2-2B	5,277	5,620	5,620	6,599
GA5	Cessna 441 Conquest2	TPE331-8	643	685	685	804
GA6	DHC-6	PT6A-20	543	578	578	679
ME1	Navajo	TIO-540-J2B2	4,429	4,627	4,627	5,430
ME2	Navajo	TIO-540-J2B2	2,808	3,082	3,082	3,620
SE1	Piper PA-28	O-320	9,307	9,722	9,722	11,411
SE2	N 24A Nomad 24A	250B17B	4,285	4,476	4,476	5,254
SE3	Cessna 172 Skyhawk	TSIO-360C	32,867	34,332	34,332	40,297
SE4	Cessna 208 Caravan	PT6A-114	2,234	2,334	2,334	2,739
SE5	Piper PA-28	O-320	5,901	6,476	6,476	7,607
SE6	N 24A Nomad 24A	250B17B	2,717	2,981	2,981	3,502
SE7	Cessna 172 Skyhawk	TSIO-360C	20,838	22,869	22,869	26,865
SE8	Cessna 208 Caravan	PT6A-114	1,417	1,555	1,555	1,826
HE1	Robinson R22	TSIO-360C	2,234	2,333	2,333	2,739
MY1	SD330 Sherpa	PT6A-45R	48	97	97	97
MY2	DHC-6	PT6A-20	24	49	49	49
MY3	H-46 SEA KNIGHT	T58-GE-8F	24	49	49	49
MY4	H-53D Sea Stallion	T64-GE-413	124	250	250	250
MY5	H-60 Black Hawk	T700-GE-700	200	405	405	405
LH1	Robinson R22	TSIO-360C	1,416	1,554	1,554	1,826
	Air Carriers		15,330	16,739	13,360	15,000
	General Aviation		99,316	105,780	105,780	124,200
	Military		420	850	850	850
	Total		115,066	123,009	119,990	140,050

Time-in-Mode Data

Aircraft emissions are based on specific engine types and times in each of the four aircraft operating modes: approach, climbout, takeoff, and taxi/idle-delay. The taxi/idle-delay mode includes the landing roll, which is the movement of an aircraft from touchdown through deceleration to taxi speed or full stop. With the exception of helicopter operations, each aircraft was simulated through complete landing and takeoff cycles (LTOs). Taxi estimates also included time spent idling in a departure queue. Time-in-mode data are also used as input for the EDMS. The default operating times in EDMS were used for takeoff, climbout, and approach. Default taxi/queue time for aircraft type[3] was used, as follows:

Commercial Aviation	
Air Carrier:	26 minutes
General Aviation	
Business Jet:	13 minutes
Turbo Prop:	26 minutes
Piston:	16 minutes
Helicopter:	7 minutes
Military	
Helicopter:	15 minutes
Combat:	30 minutes
Transport:	16 minutes

Based on site-specific information, these ground delay times are likely to be conservative for operations at SBP.

Ground Support Equipment/Auxiliary Power Unit Emissions

Ground support equipment (GSE) is a term used to describe the vehicles that service aircraft after arrival and before departure at an airport. Auxiliary power units (APU) are on-board engines that provide power to an aircraft while at the gate. Emissions from the ground support equipment and auxiliary power units were calculated using EDMS. The number, types of ground support equipment and auxiliary power units, fuel type, and operational times that are used to service each category of aircraft were based on EDMS default data and the type of aircraft.

EDMS contains a database of the emission factors for each type of ground support equipment. The type of ground support equipment includes aircraft tugs, baggage tugs, fuel trucks, food trucks, cargo trailers, water trucks, lavatory trucks, cabin service, belt loaders, and cargo loaders. The types, operational time, and use of ground support equipment are dependent on aircraft type (i.e., passenger wide body, passenger narrow body, commuter, or cargo). Of note, future years include the conversion of a portion of the GSE to alternative fuels and electric units. The analysis of aircraft assumed the EDMS default time in use for auxiliary power units of 26 minutes.

[3] Procedures for Emission Inventory Preparation, Volume IV: Mobile Sources. U.S. Environmental Protection Agency, Office of Mobile Sources, Ann Arbor, MI. 1992.

Motor Vehicle Emissions

The level of emissions that would result from the daily operation of motor vehicles with or without the Proposed Action depends on several factors including the volume of vehicles, the vehicle fleet mix, the motor vehicle emission rates, travel distance (20 miles per round trip), vehicle speed (35 miles per hour), the level of congestion/delay, the year of analysis (2004, 2010, and 2023), and meteorological factors (temperature and relative humidity).

Default motor vehicle fleet mixes were used in EMFAC2002 for San Luis Obispo County. The analysis considered all motor vehicles operating within the study area including passenger automobiles, trucks, and buses. The EMFAC2002 program was used to determine VOC (as hydrocarbons or reactive organic groups), SO_2, PM10 and PM2.5, NO_x, and CO emission factors for motor vehicles.

Emissions due to parking facilities were based on three components: 1) the amount of time a vehicle spends idling at the parking facility (no idle time); 2) the distance a vehicle travels within the parking facility at a given speed (1,000 feet at 10 miles per hour); and 3) the type of vehicle (per EMFAC2002). For the purpose of the emissions inventory, EDMS calculates motor vehicles using area-specific temperature data. Table F-4 presents the daily and annual traffic volumes along the roadway and parking lots.

TABLE F-4
TRAFFIC VOLUMES (IN ANNUAL NUMBER OF VEHICLE MILES TRAVELED)

Period	Source	Baseline Condition	2010 No Action Alternative	2010 Proposed Action	2023 Proposed Action
Daily	Roadways	1,438	1,864	1,864	2,652
Annual		524,870	680,360	680,360	967,980
Daily	Parking Lots	277	386	386	672
Annual		101,105	140,890	140,890	245,280

Dispersion

Dispersion is the process by which atmospheric pollutants disseminate due to wind and vertical stability. The results of a dispersion analysis are used to assess pollutant concentrations at or near an emission source. The results of an analysis allow predicted concentrations of pollutants to be compared directly to air quality standards and other criteria such as health risks based on modeled concentrations. Dispersion modeling allows one to assess existing and future impacts and as new state and federal regulations are implemented.

The Industrial Source Complex-3 model (Version 02035) was used for the modeling analysis. This model is an appropriate choice for this analysis because it covers simple, intermediate, and complex terrain and can predict both short-term and long-term (annual) average concentrations. The model was run using the regulatory default options (stack-tip downwash, buoyancy-induced dispersion, final plume rise), default wind speed profile categories, default potential temperature gradients, no deposition or depletion of particulate matter, and no pollutant decay. Based on observations of the area surrounding the project site, rural dispersion coefficients were applied.

The most-readily available representative meteorological data dictated the use of the ISC3 model and not the AERMOD which is preferred by the USEPA[4].

In addition to the data already provided to supporting the emissions inventory, several other data and information is required to conduct the dispersion modeling to support the health risk assessment. This data includes:

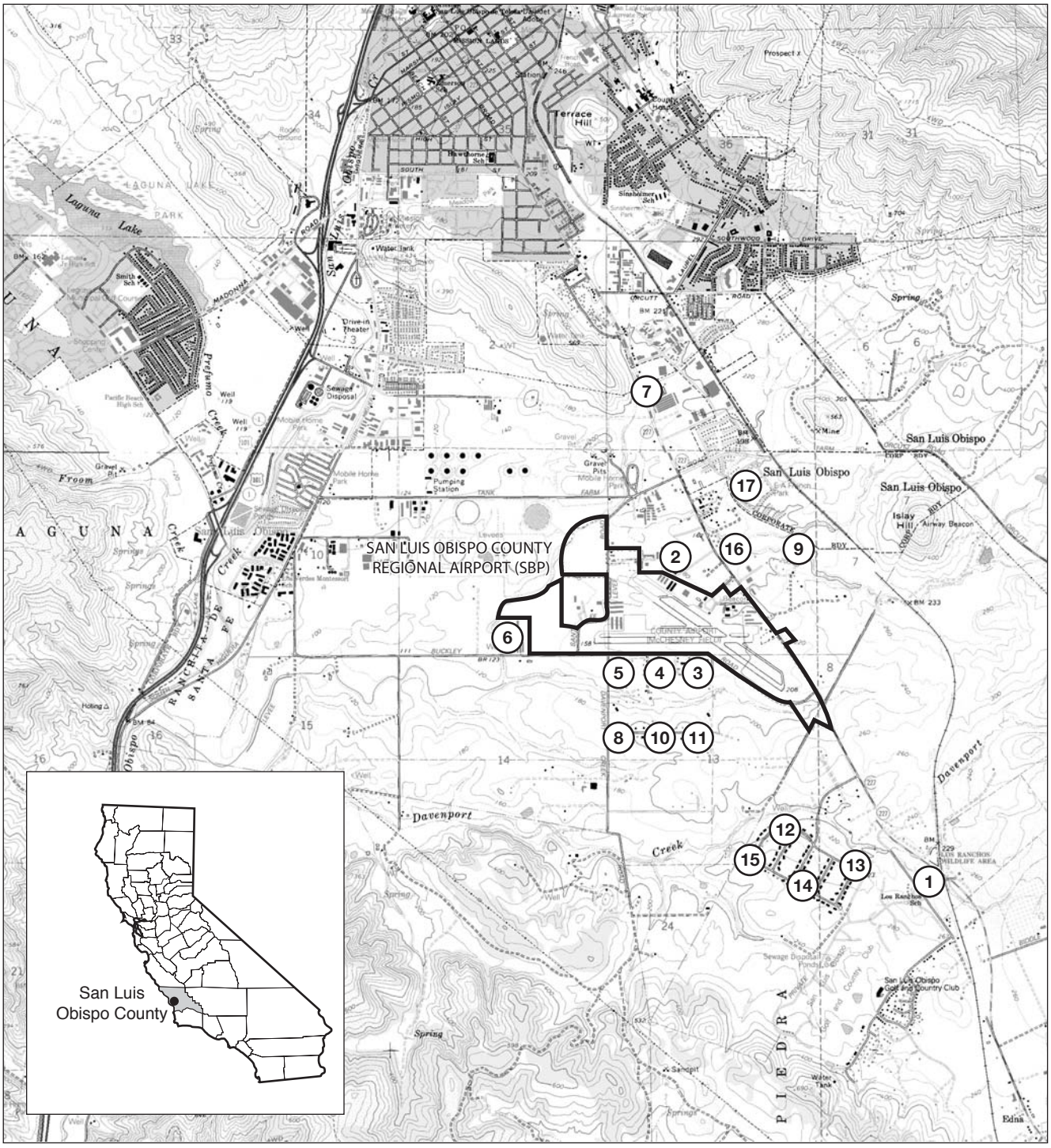
- Receptor Location
- Meteorological Data
- Aircraft Hourly Operational Profiles
- Runway, Taxiway, and Gate Usage

Receptors

Some receptors are considered more sensitive than others to air pollutants. The reasons for greater than average sensitivity include pre-existing health problems, proximity to emissions source, or duration of exposure to air pollutants. Schools, hospitals and convalescent homes are considered to be relatively sensitive to poor air quality because children, elderly people and the infirm are more susceptible to respiratory distress and other air quality-related health problems than the general public. Residential areas are considered sensitive to poor air quality because people usually stay home for extended periods of time, with associated greater exposure to ambient air quality. Recreational uses are also considered sensitive due to the greater exposure to ambient air quality conditions because vigorous exercise associated with recreation places a high demand on the human respiratory system.

Sensitive receptors such as residences, schools, outdoor recreational areas (used for acute impacts only), and off-site workers near the proposed project were chosen as the receptors to be analyzed. A total of seventeen receptors were analyzed. Receptors were placed at a height of 1.8 meters (typical breathing height). Figure F-1 displays the receptors used for the health risk assessment. Table F-5 provides a list of the receptors and their description.

[4] http://www.epa.gov/ttn/scram/guidance/guide/appw_05.pdf



SOURCE: ESA Airports, 2005

San Luis Obispo County Regional Airport Master Plan Update EA-EIR . 203092

Figure F-1
Air Quality Receptors

TABLE F-5
RECEPTORS

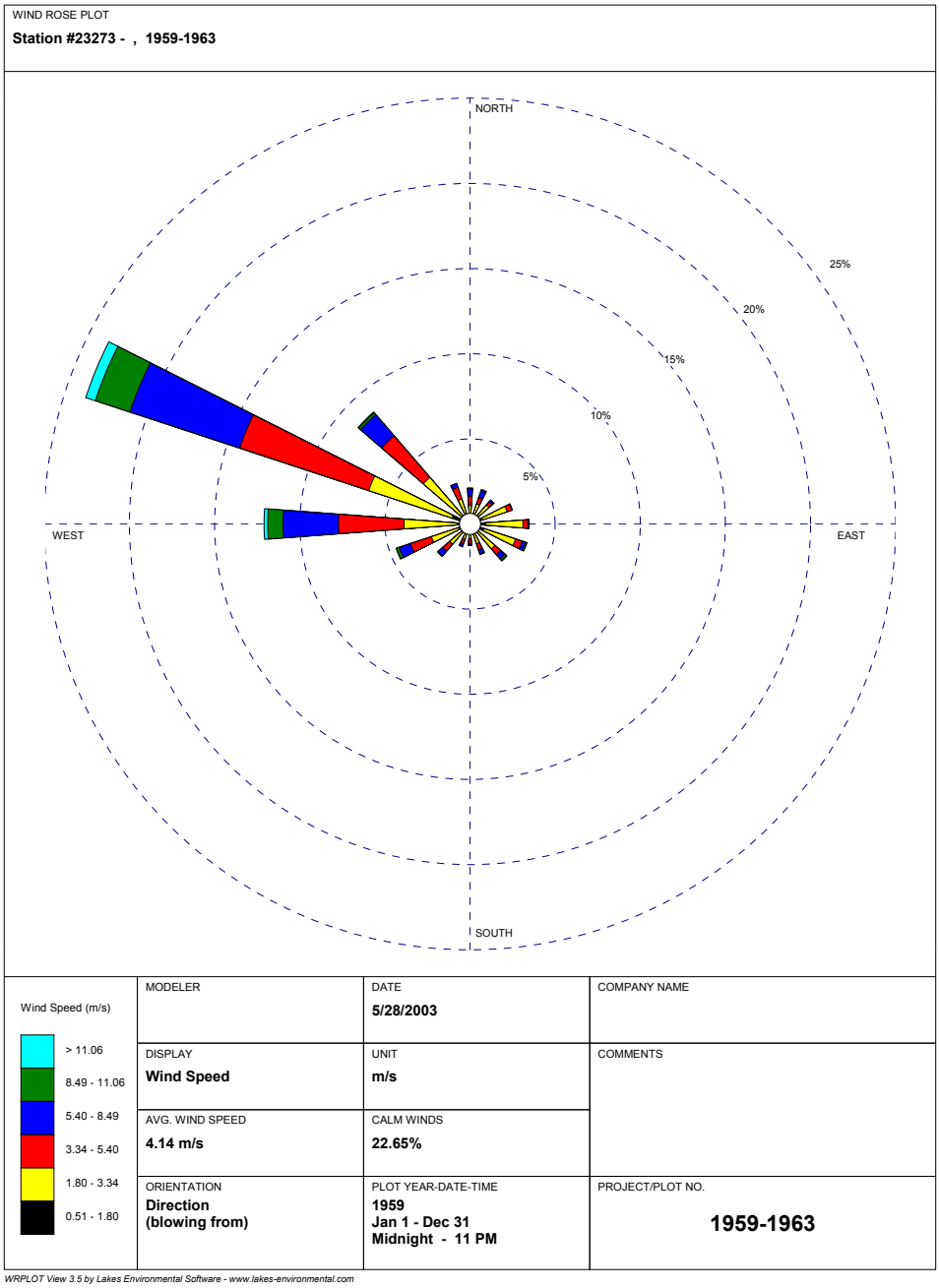
Description	ID
School	1
Off-site Worker	2
Off-site Worker	3
Off-site Worker	4
Off-site Worker	5
Off-site Worker	6
Recreational Area	7
Residence	8
Residence	9
Residence	10
Residence	11
Residence	12
Residence	13
Residence	14
Residence	15
Residence	16
Residence	17

Meteorological

Surface meteorological data and upper air meteorological (mixing height) data from Santa Maria, California were used for the modeling analysis. Meteorological data were obtained from CARB[5] and used for modeling impacts of the proposed project. Meteorological data from San Luis Obisbo for use in dispersion models was not readily available. Thus, the data from Santa Maria represents the most representative of the proposed project.

The dispersion modeling analysis used actual hour-of-day meteorological data for the five-year period (1959-1963). A worst-case analysis (based on the Baseline condition) was used to determine which meteorological year (1962) which resulted in the highest maximum concentrations and that year was used for all other analyses. Although the meteorological data used is not recent, it does represent the best, most readily available meteorological data which is representative of the proposed project. Figure F-2 displays the windrose for the five year period.

[5] http://www.arb.ca.gov/toxics/harp/downloads.htm#4



San Luis Obispo County Regional Airport Master Plan . 203092 ■

Figure F-2
Windrose for Santa Maria, California

Aircraft Temporal Factors

Temporal factors are used to describe the relationship of one period of time to another period of time (i.e., the relationship of the activity during 1-hour to the activity during a 24-hour period). In EDMS, temporal factors are applied to represent varying levels of activity as a fraction of a peak hour. The use of temporal factors gives the model the ability to more accurately reflect real world conditions.

In order to represent actual aircraft activity throughout the entire calendar year, hour-of-day, day-of-week, and month-of-year temporal factors were developed. These factors are used by the EDMS in its dispersion mode to calculate hourly concentrations at receptor locations. Tables F-6 provides the hour of day aircraft temporal factors used in the air quality analysis. These temporal factors are consistent with the noise analysis. Secondly, daily and monthly temporal factors were EDMS default values of 1.

TABLE F-6

TEMPORAL DISTRIBUTION OF AIRCRAFT OPERATIONS FOR SAN LUIS OBISPO COUNTY REGIONAL AIRPORT

Aircraft Category	Arrivals			Departures		
	7a-7p	7p-10p	10p-7a	7a-7p	7p-10p	10p-7a
Commuter/Air Taxi	*67%*	*19%*	*14%*	*67%*	*19%*	*14%*
Twin Eng. Prop.	71%	21%	8%	71%	21%	8%
Single Eng. Prop.	85%	11%	4%	85%	11%	4%
GA Jet	90%	10%	-0-	90%	10%	-0-
Helicopter	80%	20%	-0-	80%	20%	-0-

SOURCE: Airline Schedules 2004; 1998 San Luis Obispo Airport Master Plan EA/EIR.

Runway Use

The existing main runway at SBP is Runway 11/29, which is 5,300 feet long and 150 feet wide. The crosswind runway, Runway 7/25, is 3,259 feet long and 100 feet wide. Runway 7/25 is used infrequently, and only by aircraft weighing 20,000 pounds or less with dual wheel configuration. The proposed Runway 11/29 would be 6,100 feet long.

Based upon information provided by the FCT Air Traffic Manager at SBP, the runway use was assigned as 77 percent on Runway 29 and 23 percent on Runway 11 for all aircraft except piston driven. Piston aircraft runway use was 23.4 percent on Runway 11, 1.5 percent on Runway 29, and 75.1 percent on Runway 25. Again, these runway percentages are consistent with the noise analysis. Secondly, no changes to the runway percentages were applied for the project conditions.

Aircraft Assignments to Gates and Taxiways

EDMS requires the assignment of aircraft to a gate and taxiway(s). The analysis for the proposed project assigned the commercial aircraft to the commercial gate and the remaining aircraft to the general aviation (GA) gate. Aircraft assigned to the commercial gate were assigned to Taxiway A and aircraft assigned to the GA gate were assigned to Taxiway A and J. Unlike the emissions inventory, which used default aircraft time in mode values (including taxi time), the dispersion modeling analysis uses taxi times calculated based on an aircraft speed of 30 mph and the length of the taxiway.

Roadway and Parking Lot Temporal Factors

In order to represent actual traffic activity throughout the entire calendar year; hour-of-day, day of-week, and month-of-year temporal factors were assigned to scale the peak-hour roadway and parking lot volumes so that the volumes also represent off-peak activity. Roadway and parking lot temporal factors were assumed to be equal to the temporal factors for commercial aircraft usage.

APPENDIX G

Historical, Architectural, Archaeological and Cultural Resources

TABLE OF CONTENTS

Appendix G

ETHNOGRAPHIC HISTORY

This page intentionally left blank.

Ethnographic Background

Little ethnographic data about the Chumash groups are available, but explorers' journals, mission records, and archaeology have provided some information. These sources are described and summarized in Grant (1978a, 1978b, 1978c, 1978d) and Greenwood (1978). The Chumash were known to the original investigators as the Santa Barbara Indians, and inhabited primarily the area along the coast, south of Point Concepcion. Therefore, the coastal Chumash are the best documented.

Chumash village structures included round houses which were domed structures made of poles and thatch. These houses were arranged in groups. Other structures within a village included a sweathouse, storehouses, a ceremonial enclosure, gaming areas, and a cemetery (Grant, 1978b). Cemeteries were located well away from living areas. Chumash villages were known to the Spanish as "rancherias."

Each village had at least one chief. The position of chief was patralineally hereditary and subject to village approval. Women could occupy the position, if a suitable male was not present. The powers of a chief were limited to being a war leader, and presiding at ceremonies. Each village had prescribed hunting and gathering areas and the chief was solely responsible for granting access to these areas to people from other villages. Chiefs collected offerings from the villagers, and social rank was derived from wealth (Greenwood, 1978).

Mortuary customs are relatively well documented through archaeological evidence. Burials were positioned in a seated posture, flexed on the back, or flexed on the side. Graves were marked with painted stone grave markers, tablets, or poles. Grave goods consisted of shell beads and ornaments, whistles, bone tubes, whole shells, slabs of stone, and lumps of pigment, in addition to utilitarian items. The presence of differential grave goods implies a ranked social system (Grant, 1978b; Greenwood, 1978.)

The Chumash were apparently generally gentle, friendly people, and rarely engaged in warfare. When warfare did occur it was well organized. The aggrieved group would send a messenger to the offending village to arrange a meeting. The two groups would meet and fire arrows at one another in turn. Causes of war included infringement on another villages' hunting and gathering preserve, allegations of avenging witchcraft, or the refusal of a chief to attend a dance or feast (Grant, 1978b).

Like most California Indians, the Chumash relied heavily on acorns as a staple food. The acorns of the live oak were collected and stored. Other gathered foods included pine nuts, wild cherry, cattail, berries, mushrooms, and cress. Hunting larger game (deer, coyote) was accomplished primarily with a bow and arrow. Smaller game were taken with snares, deadfalls, traps, and throwing sticks. The riverine environment provided opportunities for fishing and fowling. Coastal groups did not venture out to sea to fish, but collected from tide pools, fished in shallow waters, and used large marine animals that washed onto the beach. (Grant, 1978b; Greenwood, 1978.)

The Chumash had a complex material culture, including objects of stone, wood, basketry, shell, and cordage, and are considered to be some of the finest craftsmen of Native American groups in California. Stone objects included chipped stone weapons and tools, utilitarian and decorative vessels, beads, medicine tubes, and food processing equipment (mortars, pestles, manos) (Grant, 1978b). The finest stone objects were made of steatite, which was often obtained from the Gabrieliño on Santa Catalina Island. Wooden canoes were present in the southern area, but little evidence of them exists north of Point Concepcion. Wood was used for plates, bowls, and mortars. Basketry fulfilled many utilitarian needs. Lined with asphaltum, it could be made water tight. Shell was used for an exchange standard (money) as well as for utilitarian and decorative items.

The Chumash were the first major Native American group encountered by Europeans, when Juan Rodriguez Cabrillo landed near the location of the modern city of Ventura in 1542. When the missions were established, the Chumash were friendly and docile toward the Spanish and readily went into the mission system. By the early 1800s, the majority of the Chumash population, excepting those who fled to the mountains or inland valleys, had been recruited into the mission system.

Historical Background

European settlement of the land began in 1769 at the command of Gaspar de Portola of Spain. With Portola came the Franciscan friars who founded the California missions. Mission San Luis Obispo de Tolosa was founded in 1772 by Father Junípero Serra as the fifth mission in the California chain of 21 missions. The mission was named after Saint Louis, a 13th Century Bishop of Toulouse, France.

Following the independence of Mexico and the secularization of the missions, the central coast entered the period of the rancheros. San Luis Obispo was claimed for the United States in 1846 by General Fremont. In 1850, when California was admitted to the United States, San Luis Obispo became one of the state's original counties. The City of San Luis Obispo was first incorporated in 1856 as a General Law City, and became a Charter City in 1876. The City currently serves as the commercial, governmental and cultural hub of California's Central Coast.

NHRP RESOURCES

This page intentionally left blank.

TABLE 1
NATIONAL REGISTER OF HISTORIC PLACES LISTING FOR SAN LUIS OBISPO COUNTY

Row	State	Resource Name	Address	City	Listed	Multiple
1	CA	Administration Building, Atascadero Colony	6500 Palma Ave.	Atascadero	11/17/1977	
2	CA	Angel, Myron, House	714 Buchon St.	San Luis Obispo	11/22/1982	
3	CA	Archeological Site 4 SLO 834	Address Restricted	Atascadero	2/25/1982	
4	CA	Arroyo Grande IOOF Hall	128 Bridge St.	Arroyo Grande	3/22/1991	
5	CA	Atascadero Printery	6351 Olmeda	Atascadero	1/2/2004	
6	CA	Bank of Italy	1245 Park St.	Paso Robles	3/19/1998	
7	CA	Brewster-Dutra House	1803 Vine St.	Paso Robles	10/29/1982	
8	CA	Caledonia Adobe	0.5 mi. S of 10th St.	San Miguel	7/14/1971	
9	CA	Call--Booth House	1315 Vine St.	Robles	11/3/1988	
10	CA	Carrizo Plain Rock Art Discontiguous District	Address Restricted	California Valley	5/23/2001	
11	CA	Corral de Piedra	S of San Luis Obispo on Price Canyon Rd.	San Luis Obispo	5/22/1978	
12	CA	Dana Adobe	S end of Oak Glen Ave.	Nipomo	5/6/1971	
13	CA	Eight Mile House	Off CA 101 on Stagecoach Rd.	Santa Margarita	3/31/1995	
14	CA	Guthrie House	Burton and Center Sts.	Cambria	1/10/1980	
15	CA	Hearst San Simeon Estate	3 mi. NE of San Simeon	San Simeon	6/22/1972	
16	CA	Jack, Robert, House	536 Marsh St.	San Luis Obispo	4/13/1992	
17	CA	Lincoln School	9000 Chimney Rock Rd.	Paso Robles	11/21/2001	
18	CA	Mission San Miguel	U.S. 101	San Miguel	7/14/1971	
19	CA	Old Santa Rosa Catholic Church and Cemetery	Main St.	Cambria	10/29/1982	
20	CA	Pacific Coast Railway Company Grain Warehouse	65 Higuera St.	San Luis Obispo	6/23/1988	
21	CA	Piedras Blancas Light Station	CA 1 on Point Piedras Blancas	San Simeon	9/3/1991	Light Stations of CA MPS
22	CA	Port San Luis Site	Address Restricted	San Luis Obispo	5/22/1978	
23	CA	Powerhouse, The	Jct. of S. Perimeter Rd. and Cuesta Ave., NE corner	San Luis Obispo	7/30/1993	
24	CA	Price, John, House	Highland Dr. off Price Canyon Rd.	Pismo Beach	11/3/1988	
25	CA	Rancho Canada de los Osos y Pecho y Islay	Address Restricted	San Luis Obispo	6/20/1975	
26	CA	Robles, Paso, Carnegie Library	City Park, 800 12th St.	Paso Robles	1/26/1998	CA Carnegie Libraries MPS
27	CA	San Luis Obispo Carnegie Library	696 Monterey St.	San Luis Obispo	3/30/1995	CA Carnegie Libraries MPS
28	CA	San Luis Obispo Light Station	Point San Luis	Avila Beach	9/3/1991	Light Stations of CA MPS
29	CA	Tribune--Republic Building	1763 Santa Barbara St.	San Luis Obispo	6/24/1993	

This page intentionally left blank.

PRIMARY RECORD FORMS

State of California - The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

PRIMARY RECORD

Primary
HRI#
Trinomial
NRHP Status Code: 6Z
Other Listings
Review Code Reviewer Date

Page 1 **of** 1 **Resource Name or #:** (Assigned by recorder) 1

P1. Other Identifier: Spirit of San Luis Restaurant

***P2. Location:** ☐ **Not for Publication** ☑ **Unrestricted**

***a. County:** San Luis Obispo

***b. USGS Quad:** Pismo Beach **Date:** 1981 **T:** 31 **R:** 12E **S:** 12

c. Address: 925 Airport Drive City San Luis Obispo ZIP 93401

d. UTM (Give more than one for large or linear resources) Zone mE/ mN

e. Other Locational Data: (e.g. parcel #, directions to resource, elevation, etc. as appropriate)

***P3a. Description:** (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries)

This single-story commercial restaurant structure about # 1,000 sf in size has a modified V-shaped plan with shed and flat roofs clad in asphalt shingles. Construction materials include concrete masonry unit (cmu) blocks, steel pipe columns, and wood frame roofing clad in painted stucco and painted wood trim. Enclosed eaves have wood trim facia boards and steel flashing. Fenestration consists of replacement aluminum frame fixed and sliding units, and aluminum frame entry door. Shed roof contains a clerestory of fixed pane replacement windows. Fabric awning over front entry way (north elevation). A concrete ramp with stepped cmu walls descends from dining porch to an enclosed picnic area below. Modernistic 1950s design with early 1980s alterations. Enclosed dining room addition to the south and an open dining porch addition to the southeast and interior remodeling. Storage shed addition to the west and wood lattice trash enclosure addition to the north.

***P3b. Resource Attributes:** (List attributes and codes) HP6. 1-3 story commercial building

***P4. Resources Present:** ☑ Building ☐ Structure ☐ Object ☐ Site ☐ District ☐ Element of District ☐ Other

P5b. Description of Photo:
South and west facing facades

***P6. Date Constructed/Age:**
☑ Historic ☐ Prehistoric ☐ Both
1952 (factual)

***P7. Owner and Address**
County of San Luis Obispo
1087 Santa Rosa Street
San Luis Obispo, CA 93408

***P8. Recorded By:**
Brad Brewster
ESA
225 Bush Street, Ste 1700
San Francisco, CA 94104

***P9. Date Recorded:** 9/13/05

***P10. Survey Type:**
Intensive

***P11. Report Citation:** (Cite survey report and other sources, or enter "none")
SLO County building files, SLO City/County Public Library History Room file, Assessor's Parcel Information

***Attachments:** ☐ NONE ☐ Location Map ☐ Sketch Map ☑ Continuation Sheet ☐ Building, Structure, and Object Record
☐ Archaeological Recor ☐ District Record ☐ Linear Feature Record ☐ Milling Station Record ☐ Rock Art Record
☐ Artifact Record ☐ Photograph Record ☐ Other (list)

State of California - The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

Primary _____
HRI# _____

BUILDING, STRUCTURE, AND OBJECT RECOR

NRHP Status Code: 6Z

Page 2 **of** 2 **Resource Name or #:** (Assigned by recorder) 1

B1. Historic Name: San Luis Obispo County Airport Terminal

B2. Common Name: Spirit of San Luis Restaurant

B3. Original Use: Airport Terminal B4. Present Use: Restaurant

***B5. Architectural Style:** Modernistic with contemporary alterations

***B6. Construction History:** (construction date, alterations, date of alterations)

This first terminal for the SLO County Regional Airport opened in 1953. After the main terminal opened in 1983, the original terminal building was remodeled into the Spirit of San Luis Restaurant which doubled the size of the dining room to the south, and enclosed the deck to the southeast. A storage shed and trash enclosure were also constructed.

***B7. Moved?** ☑ **No** ☐ **Yes** ☐ **Unknown** **Date:** _____ **Original Location** _____

***B8. Related Features:**

Landscaped picnic area to the southeast.

B9a. Architect: Ben Franklin, SLO County Building Superi b. Builder: Harald Neilsen, Contractor

***B10. Significance: Theme:** Civil Aviation **Area:** San Luis Obispo County

Period of Significance 1945-1960 **Property Type** _____ **Applicable Criteria:** A

Discuss importance in terms of historical or architecgtural context as defined by theme, period, and geographic scope. Also address integrity.)

Although the SLO County Airport did not open until the late 1930s, the airport did not have a permanent passendger terminal until the construction of this building in 1952. The building was designed by Ben Franklin, SLO County Superintendent of Buildings, and officially openened on April 22, 1953 at a cost of $37,000. According to newpaper accounts of its contruction, it was "built to house the Southwest Airways ticket office and waiting room and the office of the airport manager. The modernistic structure will have a wide expanse of glasss windows in front, giving a view of the field and the valley." When the main terminal was constructed in 1983, the original terminal was converted into the airport's restaurant, the Spirit of San Luis. Substantial remodelings of the facility took place at this time, with a dining room expansion over a concrete deck which existed to the south of the building, as well as enclosure of the concrete deck to the southeast with a dining porch. The large, south-facing cantilevered wall of glass was removed at this time to accommodate the dining room expansion, and various interior alterations were also completed. Although the building is associated with the post-war growth of civil aviation in San Luis Obispo County, and served as the first terminal building for the county airport, the building no longer retains sufficient integrity to convey these associations due to the substantial external and internal renovations in the early 1980s. As such, the building would not be eligible for listing in federal, state, or local registers of historic resources.

B11. Additional Resource Attributes (List attributes and codes) HP6. 1-3 story commercial building

B12. References:

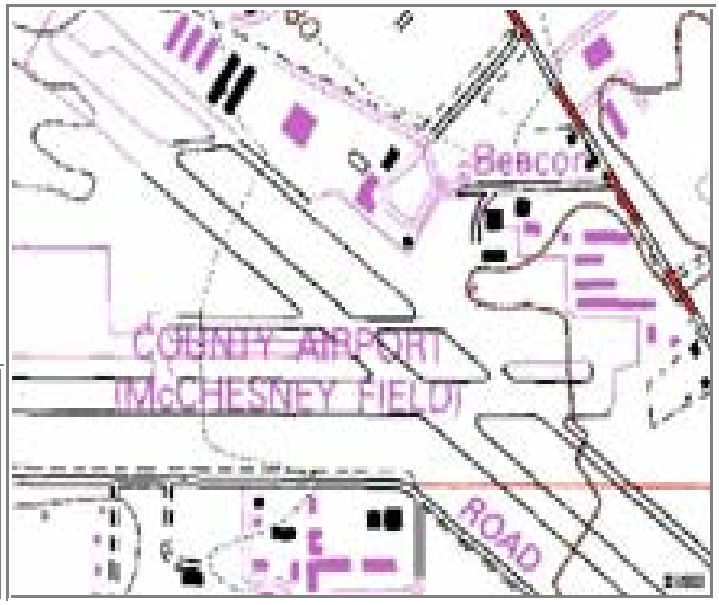
SLO County building files, SLO City/County Public Library History Room files, SLO times-Tribune articles, Assessor's Parcel Information

B13. Remark

***B14. Evaluator:** Brad Brewster

***Date of Evaluation:** 9/15/05

(This space reserved for official comments



State of California - The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

PRIMARY RECORD

Primary
HRI#
Trinomial
NRHP Status Code: 6Z
Other Listings
Review Code Reviewer Date

Page 1 **of** 1 **Resource Name or #:** (Assigned by recorder) 2

P1. Other Identifier: San Luis Obispo County Regional Airport Terminal

***P2. Location:** ☐ **Not for Publication** ☑ **Unrestricted**

***a. County:** San Luis Obispo

***b. USGS Quad:** Pismo Beach **Date:** 1981 **T:** 31 **R:** 12E **S:** 12

c. Address: 901 Aero Drive City San Luis Obispo ZIP 93401

d. UTM (Give more than one for large or linear resources) Zone mE/ mN

e. Other Locational Data: (e.g. parcel #, directions to resource, elevation, etc. as appropriate)

***P3a. Description:** (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries)

This 1.5-story airport terminal structure is about 2,300 square feet in size, with an L-shaped plan. The building is comprised of flat roofed sections of varying heights, with two projecting overhangs with curved, upswept ends cantilevered over the main entry (south elevation) and the entrance ramp (west elevation). Construction is poured concrete walls and columns, cmu blocks, and wood frame roofing with painted stucco cladding. Fenestration consists of steel frame fixed, hopper, and sliding windows. Main entrance is comprised of a set of steel frame automatic double doors. A concrete ramp leads to the tarmac below on the west-facing elevation. The interior is comprised of three sections; the main waiting area and ticketing lobby with a high-bay ceiling and clerestory windows, an office wing to the east, and a baggage claim/rental car office wing to the south. Constructed in 1983, the building joined two former structures into a modern airport terminal; the Ag. Commissioner Building (built 1962) and the Farm Advisor Building (built 1967), with subsequent later additions (baggage claim/rental car wing) and interior remodeling.

***P3b. Resource Attributes:** (List attributes and codes) HP6. 1-3 story commercial building

***P4. Resources Present:** ☑ Building ☐ Structure ☐ Object ☐ Site ☐ District ☐ Element of District ☐ Other

P5b. Description of Photo:
south facing façade

***P6. Date Constructed/Age:**
☑ Historic ☐ Prehistoric ☐ Both
1962, 1967, 1983, 2000-01

***P7. Owner and Address**
County of San Luis Obispo
1087 Santa Rosa Street
San Luis Obispo, CA 93408

***P8. Recorded By:**
Brad Brewster
ESA
225 Bush Street, Ste 1700
San Francisco, CA 94104

***P9. Date Recorded:** 9/13/05

***P10. Survey Type:**
Intensive

***P11. Report Citation:** (Cite survey report and other sources, or enter "none")
SLO County building files, SLO City/County Public Library History Room file, Assessor's Parcel Information

***Attachments:** ☐ NONE ☐ Location Map ☐ Sketch Map ☑ Continuation Sheet ☐ Building, Structure, and Object Record
☐ Archaeological Recor ☐ District Record ☐ Linear Feature Record ☐ Milling Station Record ☐ Rock Art Record
☐ Artifact Record ☐ Photograph Record ☐ Other (list)

State of California - The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

Primary
HRI#

BUILDING, STRUCTURE, AND OBJECT RECOR

NRHP Status Code: 6Z

Page 2 **of** 2 **Resource Name or #:** (Assigned by recorder) 2

B1. Historic Name N/A

B2. Common Name: Terminal Building

B3. Original Use Ag. Commissioner and Farm Administration Buildings B4. Present Use: Terminal

***B5. Architectural Style:** Contemporary

***B6. Construction History:** (construction date, alterations, date of alterations)

Originally two buildings; the Ag. Commissioner Building (built 1962) and the Farm Advisor Building (built 1967), the building was substantially remodeled in 1983 to become the airport's terminal. Subsequent later additions included the baggage claim/rental car wing (date unknown) and recent interior remodelings in 2000-01.

***B7. Moved?** ☑ **No** ☐ **Yes** ☐ **Unknown** **Date:** _____ **Original Location** _____

***B8. Related Features:**

The building is surrounded by paved surfaces on all sides, with the drop-off curb and parking area to the south, tarmac and runways to the west, paved baggage handling area to the north, and parking and mobile offices to the east. Associated control

B9a. Architect: James Maul, James Maul & Assoc., Inc. b. Builder: Wally LaFrenier Construction Co.

***B10. Significance: Theme:** Civil Aviation **Area:** San Luis Obispo County

Period of Significance 1962 - 1988 **Property Type** _____ **Applicable Criteria:** A

Discuss importance in terms of historical or architecgtural context as defined by theme, period, and geographic scope. Also address integrity.)

The airport terminal at 901 Aero Drive is associated with the continued growth and expansion of air travel in San Luis Obispo County, and was constructed to serve the nation's regional air carriers (Sky West, United Express, etc.) after the airport outgrew its original terminal building, now the Spirit of San Luis Restaurant, due to increased passenger travel. The building was the result of a substantial remodeling of two former buildings at the airport, the Ag. Commissioner Building (built 1962) and the Farm Advisor Building (built 1967), joining them into a single building in 1983. These first buildings were originally constructed of concrete masonry units (cmu's) with wood frame gable roofs, very little physical evidence of which exists today, with the exception of the roof and interior of the office wing. The building remodel was designed by architect James Maul, James Maul & Assoc., Inc. of Morro Bay in 1982, and built by local constractor, Wally LaFrenier Construction Co. from 1982-83. The building officially opened on December 8, 1983 at a final cost to the County of $1.2 million. The building and the airport were renamed the SLO County Regional Airport, McChesney Field in 1987, after Leroy McChesney, who was executive director of the SLO County Farm Bureau. Because the building is less than 50 years old, it would not qualify for listing on federal, state, or local listings, and does not appear to meet the criteria of exceptional significance, required for buildings or structures that are less than 50 years old. As such, the building does not appear to be a historical resource.

B11. Additional Resource Attributes (List attributes and codes) HP6. 1-3 story commercial building

B12. References:

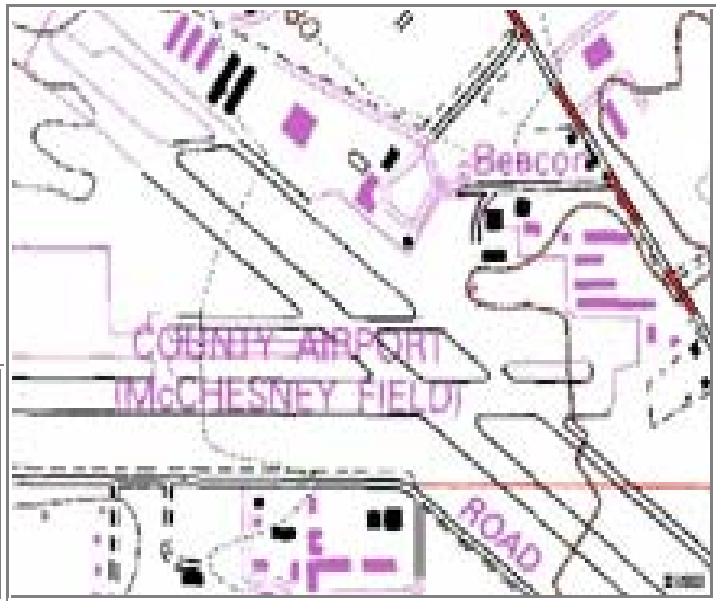
SLO County building files, SLO City/County Public Library History Room files, SLO times-Tribune articles, Assessor's Parcel Information

B13. Remark

***B14. Evaluator:** Brad Brewster

***Date of Evaluation:** 9/15/05

(This space reserved for official comments



State of California - The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

PRIMARY RECORD

Primary
HRI#
Trinomial
NRHP Status Code: 6Z
Other Listings
Review Code Reviewer Date

Page 1 **of** 1 **Resource Name or #:** (Assigned by recorder) 3

P1. Other Identifier: Tank Farm Berms

***P2. Location:** ☐ **Not for Publication** ☑ **Unrestricted**

***a. County:** San Luis Obispo

***b. USGS Quad:** Pismo Beach **Date:** 1981 **T:** 31 **R:** 12E **S:** 12

c. Address: Tank Farm Road City San Luis Obispo ZIP 93401

d. UTM (Give more than one for large or linear resources) Zone mE/ mN

e. Other Locational Data: (e.g. parcel #, directions to resource, elevation, etc. as appropriate)

***P3a. Description:** (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries)

Approximate 5-6 large spill containment berms are located immediately north of the SLO County Airport property, within the airport overflight zone. The circular, earthen berms are about 600 feet in diameter and 15-20 feet high. The abandoned berms once contained steel tanks which held petrolum products for the Union Oil Company in the early twentieth century, and were intended to prevent accidental spillage of oil on to adjacent areas. Many of them now contain ponded water within their walls and are overgrown with weeds and other vegetation. Overall condition is poor.

***P3b. Resource Attributes:** (List attributes and codes) AH2. foundations/structure pads

***P4. Resources Present:** ☐ Building ☑ Structure ☐ Object ☐ Site ☐ District ☐ Element of District ☐ Other

P5b. Description of Photo:
north facing edge

***P6. Date Constructed/Age:**
☑ Historic ☐ Prehistoric ☐ Both
1910 (factual)

***P7. Owner and Address**
County of San Luis Obispo
1087 Santa Rosa Street
San Luis Obispo, CA 93408

***P8. Recorded By:**
Brad Brewster
ESA
225 Bush Street, Ste 1700
San Francisco, CA 94104

***P9. Date Recorded:** 9/13/05

***P10. Survey Type:**
Intensive

***P11. Report Citation:** (Cite survey report and other sources, or enter "none")
SLO County building files, SLO City/County Public Library History Room file, Assessor's Parcel Information

***Attachments:** ☐ NONE ☐ Location Map ☐ Sketch Map ☑ Continuation Sheet ☐ Building, Structure, and Object Record
☐ Archaeological Recor ☐ District Record ☐ Linear Feature Record ☐ Milling Station Record ☐ Rock Art Record
☐ Artifact Record ☐ Photograph Record ☐ Other (list)

State of California - The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

Primary _____
HRI# _____

BUILDING, STRUCTURE, AND OBJECT RECOR

NRHP Status Code: 6Z

 Resource Name or #: (Assigned by recorder) 3

B1. Historic Name Tank Farm Berms

B2. Common Name: Tank Farm Berms

B3. Original Use Oil Spill Containment Berms B4. Present Use: n/a

***B5. Architectural Style:** n/a

***B6. Construction History:** (construction date, alterations, date of alterations)

Originally built in 1910, the berms were abandonded after a huge explosion and fire in 1926 which leveled the tanks and destroyed the facility. The last of the tanks were removed in the mid-1990s. The area is currently abandoned and within the airport overflight zone.

***B7. Moved?** ☑ **No** ☐ **Yes** ☐ **Unknown** **Date:** _____ **Original Location** _____

***B8. Related Features:**

Tank Farm Road

B9a. Architect: n/a b. Builder: Union Oil Co.

***B10. Significance: Theme:** _____ **Area:** _____

Period of Significance 1910-1926 **Property Type** _____ **Applicable Criteria:** A

Discuss importance in terms of historical or architecgtural context as defined by theme, period, and geographic scope. Also address integrity.)

The San Luis Obispo Tank Farm was constructed by Union Oil Company (now Unocal) in 1910 to serve as a storage facility for petroleum products on the central coast. The farm is historically associated with the construction of Port San Luis to the west which was built at the same time, and with the rise of the personal automobile and farm machinery that increasingly used petroleum products. The facility operated until April 7, 1926, when a lightening storm ignited an open reservoir of oil, causing a huge explosion and a fire which lasted for days, killing two people, resulting in about $9 millon in damage, and the loss of about 8 million barrels of crude oil. Most steel tanks were destroyed at the time, leaving only the containment berms, which are visible today. Some of the tanks still standing were not removed until the mid-1990s. The berms are a remnant of this early twentieth century petroluem facility, and would not have sufficient physical integrity to convey historical associations, if any, due to the destruction of the tanks and other facilities in 1926. As such, the berms do not appear to be eligible for listing on federal, state, or local registers of historical resources.

B11. Additional Resource Attributes (List attributes and codes) AH2. foundations/structure pads

B12. References:

SLO County building files, SLO City/County Public Library History Room files, SLO times-Tribune articles, Assessor's Parcel Information

B13. Remark

***B14. Evaluator:** Brad Brewster

***Date of Evaluation:** 9/15/05

(This space reserved for official comments

State of California - The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

PRIMARY RECORD

Primary
HRI#
Trinomial
NRHP Status Code: 6Z
Other Listings
Review Code Reviewer Date

Page 1 **of** 1 **Resource Name or #:** (Assigned by recorder) 4

P1. Other Identifier: Mrs. Pence's House

***P2. Location:** ☐ **Not for Publication** ☑ **Unrestricted**

***a. County:** San Luis Obispo

***b. USGS Quad:** Pismo Beach **Date:** 1981 **T:** 31 **R:** 12E **S:** 12

c. Address: 4587 Broad Street City San Luis Obispo ZIP 93401

d. UTM (Give more than one for large or linear resources) Zone mE/ mN

e. Other Locational Data: (e.g. parcel #, directions to resource, elevation, etc. as appropriate)

***P3a. Description:** (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries)

This small, one-story single family house has an irregular plan, gable roof clad in dark red rolled asphalt sheeting and rounded eaves, and an inset corner entry with arched entry ways. Fenestration consists of wood frame fixed multi-lite windows and two-over-two lite double hung windows, some with mesh screen covers, and wood frame paneled doors. Wood frame construction with an exposed concrete foundation and rough stucco wall cladding. Tile attic vents details. Matching two-car garage and a wood plank shed to the north. Small infilled porch on the rear (west facing) façade. Alterations inclue minor window replacements on the rear façade and likely replacement asphalt roof cladding where Spanish barrel tiles may have existed. Mature landscaping and pine trees. Gravel driveway. Overall condition is good to fair.

***P3b. Resource Attributes:** (List attributes and codes) HP2. Single family property

***P4. Resources Present:** ☑ Building ☐ Structure ☐ Object ☐ Site ☐ District ☐ Element of District ☐ Other

P5b. Description of Photo:

***P6. Date Constructed/Age:**
☐ Historic ☐ Prehistoric ☐ Both
c. 1935

***P7. Owner and Address**
Mabelle Pence
4587 Broad Street
San Luis Obispo, CA 93401

***P8. Recorded By:**
Brad Brewster
ESA
225 Bush Street, Ste 1700
San Francisco, CA 94104

***P9. Date Recorded:** 9/13/05

***P10. Survey Type:**
Intensive

***P11. Report Citation:** (Cite survey report and other sources, or enter "none")
Personal communication, George Rosenberger, Deputy Director, SLO County Department of General Services, September 13, 20

***Attachments:** ☐ NONE ☐ Location Map ☐ Sketch Map ☐ Continuation Sheet ☐ Building, Structure, and Object Record
☐ Archaeological Recor ☐ District Record ☐ Linear Feature Record ☐ Milling Station Record ☐ Rock Art Record
☐ Artifact Record ☐ Photograph Record ☐ Other (list)

State of California - The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

Primary _____
HRI# _____

BUILDING, STRUCTURE, AND OBJECT RECOR

NRHP Status Code: 6Z

Page 2 **of** 2 **Resource Name or #:** (Assigned by recorder) 4

B1. Historic Name n/a

B2. Common Name: Mrs. Pence's House

B3. Original Use Residential B4. Present Use: Residential

***B5. Architectural Style:** Mission Revival

***B6. Construction History:** (construction date, alterations, date of alterations)

This single family home was constructed circa 1935 with a small addition to the rear of the building which appear to date from the mid twentieth century. Otherwise, the building appears as originally built.

***B7. Moved?** ☑ **No** ☐ **Yes** ☐ **Unknown** **Date:** _____ **Original Location** _____

***B8. Related Features:**

Two car garage and wood frame shed to the north.

B9a. Architect: unknown b. Builder: unknown

***B10. Significance: Theme:** Residential growth **Area:** San Luis Obispo County

Period of Significance _____ **Property Type** _____ **Applicable Criteria:** _____

Discuss importance in terms of historical or architecgtural context as defined by theme, period, and geographic scope. Also address integrity.)

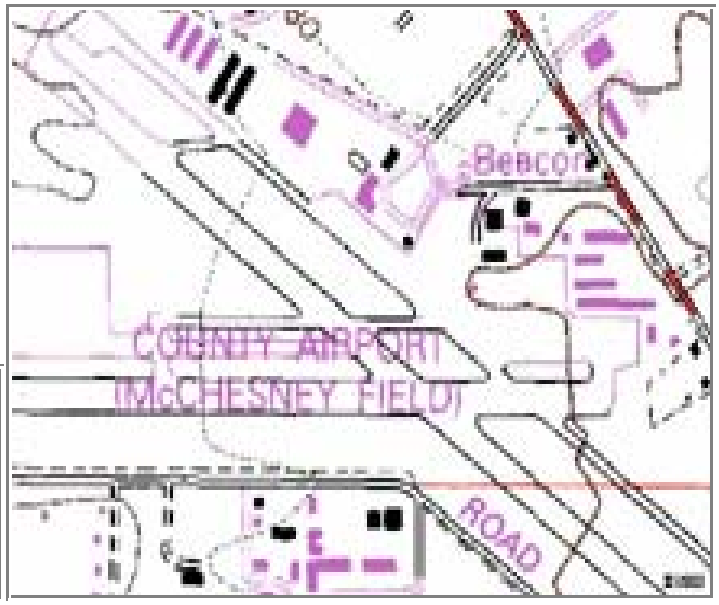
This small single family home built circa 1935 likely predates the establishment of SLO County Airport (1938) which grew to surround the property to the north, south and west. The building was constructed when this area was on the far outskirts of the town of San Luis Obispo on lower Broad Street (now Highway 227) in an agricultural setting. According to personal communications with county personnel, the building has been continuously inhabited by Mrs. Mabelle Pence, although it has been owned by the County for the last 20 years in a lease-back arrangement to Mrs. Pence who may live there until her death. The building also exhibits some elements of the Mission Revival style of architecture, with its stucco siding, arched entryway, tile elements, and rolled eaves clad in dark red asphalt sheeting (likely replacing Spanish barrel tile cladding, as was typical for this style). Although the building is over 50 years old, research did not reveal any significant associations with important events, individuals, or the work of a master architect. Although it does embody some of the characteristics of the Mission Revival style of architecture, it would not be considered a high-style example, and is a fairly common building type both locally and nationally. In addition, the setting has been greatly altered with the construction and expansion of the airport immediately west of the property, as well as other highway-serving commercial and industrial uses on Highway 227. As such, this property does not appear eligible for listing on federal, state, or local registers of historical resources.

B11. Additional Resource Attributes (List attributes and codes) HP2. Single family property

B12. References:

Personal communication, George Rosenberger, Deputy Director, SLO County Department of General Services, with Brad Brewster, September 13, 2005. USGS Quad Map.

B13. Remark



***B14. Evaluator:** Brad Brewster

***Date of Evaluation:** 9/15/05

(This space reserved for official comments

NAHC CORRESPONDENCE

8950 Cal Center Drive
Building 3, Suite 300
Sacramento, CA 95826
916.564.4500 phone
916.564.4501 fax

www.esassoc.com

September 8, 2005

Ms. Debbie Pilas-Treadway
Native American Heritage Commission
915 Capitol Mall, Room 364
Sacramento, CA 95814

Subject: Request for Search of Sacred Lands Files and Native American Contact List

Dear Ms. Treadway:

ESA will be preparing the environmental documentation for the San Luis Obispo County Airport Master Plan located in San Luis Obispo County.

The project area is near the intersection of Buckley Road and Edna Road south of the City of San Luis Obispo. The project area is located on the USGS 7.5'-topographic quadrangle Pismo Beach, Sections 11 and 12, Township 31 south, Range 12 east.

In an effort to provide an adequate appraisal of all potential impacts that may result from the proposed project, ESA is requesting that a search be conducted of the sacred lands files and records of traditional cultural properties that may exist within or adjacent to the project area. I would also like to request a list of Native American individuals and organizations that should be contacted about potential sites and resources of importance to Native Americans.

Thank you for your time and cooperation regarding this matter. Please contact me at 916-564-4500 if you have any questions.

Sincerely,

Traci O'Brien
Senior Associate Archaeologist

STATE OF CALIFORNIA Arnold Schwarzenegger Governor

NATIVE AMERICAN HERITAGE COMMISSION
915 CAPITOL MALL, ROOM 364
SACRAMENTO, CA 95814
(916) 653-4082
Fax (916) 657-5390
Web Site www.nahc.ca.gov

September 23, 2005

Traci O'Brien
ESA

Sent by Fax: 916-564-4501
Number of Pages: 3

RE: Proposed San Luis Obispo County Airport Master Plan, San Luis Obispo County

Dear Ms. O'Brien:

A record search of the sacred land file has failed to indicate the presence of Native American cultural resources in the immediate project area. The absence of specific site information in the sacred lands file does not indicate the absence of cultural resources in any project area. Other sources of cultural resources should also be contacted for information regarding known and recorded sites.

Enclosed is a list of Native Americans individuals/organizations who may have knowledge of cultural resources in the project area. The Commission makes no recommendation or preference of a single individual, or group over another. This list should provide a starting place in locating areas of potential adverse impact within the proposed project area. I suggest you contact all of those indicated, if they cannot supply information, they might recommend others with specific knowledge. By contacting all those listed, your organization will be better able to respond to claims of failure to consult with the appropriate tribe or group. If a response has not been received within two weeks of notification, the Commission requests that you follow-up with a telephone call to ensure that the project information has been received.

If you receive notification of change of addresses and phone numbers from any of these individuals or groups, please notify me. With your assistance we are able to assure that our lists contain current information. If you have any questions or need additional information, please contact me at (916) 653-4040.

Sincerely,

Rob Wood
Environmental Specialist III

Native American Contacts
San Luis Obispo County
September 23, 2005

Chief Joseph Ballesteros
5811 Lone Pine Place — Chumash
Paso Robles , CA 93446 — Salinan
(805) 238-2784

Beverly Salazar Folkes
1931 Shadybrook Drive — Chumash
Thousand Oaks , CA 91362 — Tataviam
Fernandeño
805 492-7255

Santa Ynez Band of Mission Indians
Vincent Armenta, Chairperson
P.O. Box 517 — Chumash
Santa Ynez , CA 93460
varmenta@santaynezchumash
(805) 688-7997
(805) 686-9578 Fax

Puilulaw Khus
2001 San Bernardo Creek — Chumash
Morro Bay , CA 93442
(805) 772-0579

Julie Lynn Tumamait
365 North Pole Ave — Chumash
Ojai , CA 93023
jtumamait@hotmail.com
(805) 646-6214

Lei Lynn Odom
1339 24th Street — Chumash
Oceano , CA 93445
(805) 489-5390

San Luis Obispo County Chumash Council
Chief Mark Steven Vigil
1030 Ritchie Road — Chumash
Grover Beach , CA 93433
chiefmvigil@fix.net
(805) 481-2461
(805) 474-4729 - Fax

Peggy Odom
1339 24th Street — Chumash
Oceano , 93445
(805) 489-5390

DNA Cultural Resources Consultants
"Alyisha" Diane Marie Garcia
P.O. Box 129 — Chumash
Carpinteria , CA 93014
DNAnSB@aol.com
(805) 689-8050 Cell

Santa Ynez Tribal Elders Council
Adelina Alva-Padilla, Chair Woman
P.O. Box 365 — Chumash
Santa Ynez , CA 93460
elders@santaynezchumash.org
(805) 688-8446
(805) 693-1768 FAX

This list is current only as of the date of this document.

Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resources Code and Section 5097.98 of the Public Resources Code.

This list is only applicable for contacting local Native Americans with regard to cultural resources for the proposed San Luis Obispo County Airport Master Plan, San Luis Obispo County.

Native American Contacts
San Luis Obispo County
September 23, 2005

Randy Guzman - Folkes
3044 East Street
Simi Valley , CA 93065-3929
traditional75@hotmail.com

(805) 579-9206
(805) 797-5605 (cell)

Chumash
Fernandeño
Tataviam
Shoshone Paiute
Yaqui

Mary E. Trejo
P.O. Box 469
Santa Margarita , CA 93453
(805) 483-4280

Chumash

Mona Olivas Tucker
660 Camino Del Rey
Arroyo Grande 93420
, CA
(805) 489-1052 Home
(805) 748-2121 Cell

Chumash

Matthew Darian Goldman
660 Camino Del Rey
Arroyo Grande 93420
, CA
(805) 550-0461 Home

Chumash

Santa Ynez Band of Mission Indians
Laura Ray, Tribal Administrator
P.O. Box 517
Santa Ynez , CA 93460
lray@santaynezchumash.net
(805) 688-7997
(805) 686-9578 Fax

Chumash

This list is current only as of the date of this document.

Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resources Code and Section 5097.98 of the Public Resources Code.

This list is only applicable for contacting local Native Americans with regard to cultural resources for the proposed San Luis Obispo County Airport Master Plan, San Luis Obispo County.

ESA Airports

225 Bush Street
Suite 1700
San Francisco, CA 94104
415.896.5900 phone
415.896.0332 fax

www.esassoc.com

26 October 2005

Santa Ynez Band of Mission Indians
Adelina Alva-Padilla, Chair Woman
P.O. Box 365
Santa Ynez, California 93460

Subject: Request for Cultural Resources Information
San Luis Obispo County Regional Airport Master Plan Update

Dear Ms. Alva-Padilla:

ESA Airports is working with the Federal Aviation Administration (FAA) in conducting cultural resource studies in support of the proposed Master Plan Update for the San Luis Obispo County Regional Airport. The results of the cultural resource studies will be used to prepare an Environmental Assessment (EA) / Environmental Impact Report (EIR) to fulfill the requirements of the National Environmental Policy Act (NEPA) and the California Environmental Quality Act (CEQA). ESA Airports received your name from the Native American Heritage Commission, which indicated that you may have knowledge of Native American cultural resources in the project area.

The San Luis Obispo County Regional Airport is located on the west side of State Route 227 between Tank Farm Road and Buckley Road, south of the City of San Luis Obispo. The project area is located on the USGS 7.5-minute topographic quadrangle for Pismo Beach, Sections 11 and 12, Township 31 South, Range 12 East (see attached map). All of the project work will occur on Airport property.

In an effort to provide an adequate appraisal of all potential impacts that may result from the proposed project, ESA Airports is requesting information, on behalf of the FAA, about cultural resources, including archaeological and traditional cultural properties, that may exist within or adjacent to the project area. Please contact me by telephone (415.896.5900), fax (415.896.0332), or email (dfull@esassoc.com) if you know of any cultural resources within the project area.

Thank you for your time and cooperation regarding this matter.

Very truly yours,

David J. Full, AICP
Vice President

ESA Airports

225 Bush Street
Suite 1700
San Francisco, CA 94104
415.896.5900 phone
415.896.0332 fax

www.esassoc.com

26 October 2005

San Luis Obispo County Chumash Council
1030 Ritchie Road
Grover Beach, California 93433

Subject: Request for Cultural Resources Information
San Luis Obispo County Regional Airport Master Plan Update

To Whom It May Concern:

ESA Airports is working with the Federal Aviation Administration (FAA) in conducting cultural resource studies in support of the proposed Master Plan Update for the San Luis Obispo County Regional Airport. The results of the cultural resource studies will be used to prepare an Environmental Assessment (EA) / Environmental Impact Report (EIR) to fulfill the requirements of the National Environmental Policy Act (NEPA) and the California Environmental Quality Act (CEQA). ESA Airports received your name from the Native American Heritage Commission, which indicated that you may have knowledge of Native American cultural resources in the project area.

The San Luis Obispo County Regional Airport is located on the west side of State Route 227 between Tank Farm Road and Buckley Road, south of the City of San Luis Obispo. The project area is located on the USGS 7.5-minute topographic quadrangle for Pismo Beach, Sections 11 and 12, Township 31 South, Range 12 East (see attached map). All of the project work will occur on Airport property.

In an effort to provide an adequate appraisal of all potential impacts that may result from the proposed project, ESA Airports is requesting information, on behalf of the FAA, about cultural resources, including archaeological and traditional cultural properties, that may exist within or adjacent to the project area. Please contact me by telephone (415.896.5900), fax (415.896.0332), or email (dfull@esassoc.com) if you know of any cultural resources within the project area.

Thank you for your time and cooperation regarding this matter.

Very truly yours,

David J. Full, AICP
Vice President

ESA Airports

225 Bush Street
Suite 1700
San Francisco, CA 94104
415.896.5900 phone
415.896.0332 fax

www.esassoc.com

26 October 2005

Randy Guzman-Folkes
3044 East Street
Simi Valley, California 93065-3929

Subject: Request for Cultural Resources Information
San Luis Obispo County Regional Airport Master Plan Update

Dear Mr. Guzman-Folkes:

ESA Airports is working with the Federal Aviation Administration (FAA) in conducting cultural resource studies in support of the proposed Master Plan Update for the San Luis Obispo County Regional Airport. The results of the cultural resource studies will be used to prepare an Environmental Assessment (EA) / Environmental Impact Report (EIR) to fulfill the requirements of the National Environmental Policy Act (NEPA) and the California Environmental Quality Act (CEQA). ESA Airports received your name from the Native American Heritage Commission, which indicated that you may have knowledge of Native American cultural resources in the project area.

The San Luis Obispo County Regional Airport is located on the west side of State Route 227 between Tank Farm Road and Buckley Road, south of the City of San Luis Obispo. The project area is located on the USGS 7.5-minute topographic quadrangle for Pismo Beach, Sections 11 and 12, Township 31 South, Range 12 East (see attached map). All of the project work will occur on Airport property.

In an effort to provide an adequate appraisal of all potential impacts that may result from the proposed project, ESA Airports is requesting information, on behalf of the FAA, about cultural resources, including archaeological and traditional cultural properties, that may exist within or adjacent to the project area. Please contact me by telephone (415.896.5900), fax (415.896.0332), or email (dfull@esassoc.com) if you know of any cultural resources within the project area.

Thank you for your time and cooperation regarding this matter.

Very truly yours,

David J. Full, AICP
Vice President

ESA Airports

225 Bush Street
Suite 1700
San Francisco, CA 94104
415.896.5900 phone
415.896.0332 fax

www.esassoc.com

26 October 2005

Puilulaw Khus
2001 San Bernardo Creek
Mooro Bay, California 39442

Subject: Request for Cultural Resources Information
San Luis Obispo County Regional Airport Master Plan Update

Dear Puilulaw Khus:

ESA Airports is working with the Federal Aviation Administration (FAA) in conducting cultural resource studies in support of the proposed Master Plan Update for the San Luis Obispo County Regional Airport. The results of the cultural resource studies will be used to prepare an Environmental Assessment (EA) / Environmental Impact Report (EIR) to fulfill the requirements of the National Environmental Policy Act (NEPA) and the California Environmental Quality Act (CEQA). ESA Airports received your name from the Native American Heritage Commission, which indicated that you may have knowledge of Native American cultural resources in the project area.

The San Luis Obispo County Regional Airport is located on the west side of State Route 227 between Tank Farm Road and Buckley Road, south of the City of San Luis Obispo. The project area is located on the USGS 7.5-minute topographic quadrangle for Pismo Beach, Sections 11 and 12, Township 31 South, Range 12 East (see attached map). All of the project work will occur on Airport property.

In an effort to provide an adequate appraisal of all potential impacts that may result from the proposed project, ESA Airports is requesting information, on behalf of the FAA, about cultural resources, including archaeological and traditional cultural properties, that may exist within or adjacent to the project area. Please contact me by telephone (415.896.5900), fax (415.896.0332), or email (dfull@esassoc.com) if you know of any cultural resources within the project area.

Thank you for your time and cooperation regarding this matter.

Very truly yours,

David J. Full, AICP
Vice President

ESA Airports

225 Bush Street
Suite 1700
San Francisco, CA 94104
415.896.5900 phone
415.896.0332 fax

www.esassoc.com

26 October 2005

Peggy Odom
1339 24th Street
Oceano, California 93445

Subject: Request for Cultural Resources Information
San Luis Obispo County Regional Airport Master Plan Update

Dear Ms. Odom:

ESA Airports is working with the Federal Aviation Administration (FAA) in conducting cultural resource studies in support of the proposed Master Plan Update for the San Luis Obispo County Regional Airport. The results of the cultural resource studies will be used to prepare an Environmental Assessment (EA) / Environmental Impact Report (EIR) to fulfill the requirements of the National Environmental Policy Act (NEPA) and the California Environmental Quality Act (CEQA). ESA Airports received your name from the Native American Heritage Commission, which indicated that you may have knowledge of Native American cultural resources in the project area.

The San Luis Obispo County Regional Airport is located on the west side of State Route 227 between Tank Farm Road and Buckley Road, south of the City of San Luis Obispo. The project area is located on the USGS 7.5-minute topographic quadrangle for Pismo Beach, Sections 11 and 12, Township 31 South, Range 12 East (see attached map). All of the project work will occur on Airport property.

In an effort to provide an adequate appraisal of all potential impacts that may result from the proposed project, ESA Airports is requesting information, on behalf of the FAA, about cultural resources, including archaeological and traditional cultural properties, that may exist within or adjacent to the project area. Please contact me by telephone (415.896.5900), fax (415.896.0332), or email (dfull@esassoc.com) if you know of any cultural resources within the project area.

Thank you for your time and cooperation regarding this matter.

Very truly yours,

David J. Full, AICP
Vice President

ESA Airports

225 Bush Street
Suite 1700
San Francisco, CA 94104
415.896.5900 phone
415.896.0332 fax

www.esassoc.com

26 October 2005

Mona Olivas Tucker
660 Camino Del Rey
Arroyo Grande, California 93420

Subject: Request for Cultural Resources Information
San Luis Obispo County Regional Airport Master Plan Update

Dear Ms. Tucker:

ESA Airports is working with the Federal Aviation Administration (FAA) in conducting cultural resource studies in support of the proposed Master Plan Update for the San Luis Obispo County Regional Airport. The results of the cultural resource studies will be used to prepare an Environmental Assessment (EA) / Environmental Impact Report (EIR) to fulfill the requirements of the National Environmental Policy Act (NEPA) and the California Environmental Quality Act (CEQA). ESA Airports received your name from the Native American Heritage Commission, which indicated that you may have knowledge of Native American cultural resources in the project area.

The San Luis Obispo County Regional Airport is located on the west side of State Route 227 between Tank Farm Road and Buckley Road, south of the City of San Luis Obispo. The project area is located on the USGS 7.5-minute topographic quadrangle for Pismo Beach, Sections 11 and 12, Township 31 South, Range 12 East (see attached map). All of the project work will occur on Airport property.

In an effort to provide an adequate appraisal of all potential impacts that may result from the proposed project, ESA Airports is requesting information, on behalf of the FAA, about cultural resources, including archaeological and traditional cultural properties, that may exist within or adjacent to the project area. Please contact me by telephone (415.896.5900), fax (415.896.0332), or email (dfull@esassoc.com) if you know of any cultural resources within the project area.

Thank you for your time and cooperation regarding this matter.

Very truly yours,

David J. Full, AICP
Vice President

ESA Airports

225 Bush Street
Suite 1700
San Francisco, CA 94104
415.896.5900 phone
415.896.0332 fax

www.esassoc.com

26 October 2005

Matthew Darian Goldman
660 Camino Del Rey
Arroyo Grande, California 93420

Subject: Request for Cultural Resources Information
San Luis Obispo County Regional Airport Master Plan Update

Dear Mr. Goldman:

ESA Airports is working with the Federal Aviation Administration (FAA) in conducting cultural resource studies in support of the proposed Master Plan Update for the San Luis Obispo County Regional Airport. The results of the cultural resource studies will be used to prepare an Environmental Assessment (EA) / Environmental Impact Report (EIR) to fulfill the requirements of the National Environmental Policy Act (NEPA) and the California Environmental Quality Act (CEQA). ESA Airports received your name from the Native American Heritage Commission, which indicated that you may have knowledge of Native American cultural resources in the project area.

The San Luis Obispo County Regional Airport is located on the west side of State Route 227 between Tank Farm Road and Buckley Road, south of the City of San Luis Obispo. The project area is located on the USGS 7.5-minute topographic quadrangle for Pismo Beach, Sections 11 and 12, Township 31 South, Range 12 East (see attached map). All of the project work will occur on Airport property.

In an effort to provide an adequate appraisal of all potential impacts that may result from the proposed project, ESA Airports is requesting information, on behalf of the FAA, about cultural resources, including archaeological and traditional cultural properties, that may exist within or adjacent to the project area. Please contact me by telephone (415.896.5900), fax (415.896.0332), or email (dfull@esassoc.com) if you know of any cultural resources within the project area.

Thank you for your time and cooperation regarding this matter.

Very truly yours,

David J. Full, AICP
Vice President

ESA Airports

225 Bush Street
Suite 1700
San Francisco, CA 94104
415.896.5900 phone
415.896.0332 fax

www.esassoc.com

26 October 2005

Mary E. Trejo
P.O. Box 469
Santa Margarita, California 93453

Subject: Request for Cultural Resources Information
San Luis Obispo County Regional Airport Master Plan Update

Dear Ms. Trejo:

ESA Airports is working with the Federal Aviation Administration (FAA) in conducting cultural resource studies in support of the proposed Master Plan Update for the San Luis Obispo County Regional Airport. The results of the cultural resource studies will be used to prepare an Environmental Assessment (EA) / Environmental Impact Report (EIR) to fulfill the requirements of the National Environmental Policy Act (NEPA) and the California Environmental Quality Act (CEQA). ESA Airports received your name from the Native American Heritage Commission, which indicated that you may have knowledge of Native American cultural resources in the project area.

The San Luis Obispo County Regional Airport is located on the west side of State Route 227 between Tank Farm Road and Buckley Road, south of the City of San Luis Obispo. The project area is located on the USGS 7.5-minute topographic quadrangle for Pismo Beach, Sections 11 and 12, Township 31 South, Range 12 East (see attached map). All of the project work will occur on Airport property.

In an effort to provide an adequate appraisal of all potential impacts that may result from the proposed project, ESA Airports is requesting information, on behalf of the FAA, about cultural resources, including archaeological and traditional cultural properties, that may exist within or adjacent to the project area. Please contact me by telephone (415.896.5900), fax (415.896.0332), or email (dfull@esassoc.com) if you know of any cultural resources within the project area.

Thank you for your time and cooperation regarding this matter.

Very truly yours,

David J. Full, AICP
Vice President

ESA Airports

225 Bush Street
Suite 1700
San Francisco, CA 94104
415.896.5900 phone
415.896.0332 fax

www.esassoc.com

26 October 2005

Lei Lynn Odom
1339 24th Street
Oceano, California 93445

Subject: Request for Cultural Resources Information
San Luis Obispo County Regional Airport Master Plan Update

Dear Ms. Odom:

ESA Airports is working with the Federal Aviation Administration (FAA) in conducting cultural resource studies in support of the proposed Master Plan Update for the San Luis Obispo County Regional Airport. The results of the cultural resource studies will be used to prepare an Environmental Assessment (EA) / Environmental Impact Report (EIR) to fulfill the requirements of the National Environmental Policy Act (NEPA) and the California Environmental Quality Act (CEQA). ESA Airports received your name from the Native American Heritage Commission, which indicated that you may have knowledge of Native American cultural resources in the project area.

The San Luis Obispo County Regional Airport is located on the west side of State Route 227 between Tank Farm Road and Buckley Road, south of the City of San Luis Obispo. The project area is located on the USGS 7.5-minute topographic quadrangle for Pismo Beach, Sections 11 and 12, Township 31 South, Range 12 East (see attached map). All of the project work will occur on Airport property.

In an effort to provide an adequate appraisal of all potential impacts that may result from the proposed project, ESA Airports is requesting information, on behalf of the FAA, about cultural resources, including archaeological and traditional cultural properties, that may exist within or adjacent to the project area. Please contact me by telephone (415.896.5900), fax (415.896.0332), or email (dfull@esassoc.com) if you know of any cultural resources within the project area.

Thank you for your time and cooperation regarding this matter.

Very truly yours,

David J. Full, AICP
Vice President

ESA Airports

225 Bush Street
Suite 1700
San Francisco, CA 94104
415.896.5900 phone
415.896.0332 fax

www.esassoc.com

26 October 2005

Santa Ynez Band of Mission Indians
Laura Ray, Tribal Administrator
P.O. Box 517
Santa Ynez, California 93460

Subject: Request for Cultural Resources Information
San Luis Obispo County Regional Airport Master Plan Update

Dear Ms. Ray:

ESA Airports is working with the Federal Aviation Administration (FAA) in conducting cultural resource studies in support of the proposed Master Plan Update for the San Luis Obispo County Regional Airport. The results of the cultural resource studies will be used to prepare an Environmental Assessment (EA) / Environmental Impact Report (EIR) to fulfill the requirements of the National Environmental Policy Act (NEPA) and the California Environmental Quality Act (CEQA). ESA Airports received your name from the Native American Heritage Commission, which indicated that you may have knowledge of Native American cultural resources in the project area.

The San Luis Obispo County Regional Airport is located on the west side of State Route 227 between Tank Farm Road and Buckley Road, south of the City of San Luis Obispo. The project area is located on the USGS 7.5-minute topographic quadrangle for Pismo Beach, Sections 11 and 12, Township 31 South, Range 12 East (see attached map). All of the project work will occur on Airport property.

In an effort to provide an adequate appraisal of all potential impacts that may result from the proposed project, ESA Airports is requesting information, on behalf of the FAA, about cultural resources, including archaeological and traditional cultural properties, that may exist within or adjacent to the project area. Please contact me by telephone (415.896.5900), fax (415.896.0332), or email (dfull@esassoc.com) if you know of any cultural resources within the project area.

Thank you for your time and cooperation regarding this matter.

Very truly yours,

David J. Full, AICP
Vice President

ESA Airports

225 Bush Street
Suite 1700
San Francisco, CA 94104
415.896.5900 phone
415.896.0332 fax

www.esassoc.com

26 October 2005

Julie Lynn Tumamait
365 North Pole Ave
Ojai, California 93023

Subject: Request for Cultural Resources Information
San Luis Obispo County Regional Airport Master Plan Update

Dear Ms. Tumamait:

ESA Airports is working with the Federal Aviation Administration (FAA) in conducting cultural resource studies in support of the proposed Master Plan Update for the San Luis Obispo County Regional Airport. The results of the cultural resource studies will be used to prepare an Environmental Assessment (EA) / Environmental Impact Report (EIR) to fulfill the requirements of the National Environmental Policy Act (NEPA) and the California Environmental Quality Act (CEQA). ESA Airports received your name from the Native American Heritage Commission, which indicated that you may have knowledge of Native American cultural resources in the project area.

The San Luis Obispo County Regional Airport is located on the west side of State Route 227 between Tank Farm Road and Buckley Road, south of the City of San Luis Obispo. The project area is located on the USGS 7.5-minute topographic quadrangle for Pismo Beach, Sections 11 and 12, Township 31 South, Range 12 East (see attached map). All of the project work will occur on Airport property.

In an effort to provide an adequate appraisal of all potential impacts that may result from the proposed project, ESA Airports is requesting information, on behalf of the FAA, about cultural resources, including archaeological and traditional cultural properties, that may exist within or adjacent to the project area. Please contact me by telephone (415.896.5900), fax (415.896.0332), or email (dfull@esassoc.com) if you know of any cultural resources within the project area.

Thank you for your time and cooperation regarding this matter.

Very truly yours,

David J. Full, AICP
Vice President

ESA Airports

225 Bush Street
Suite 1700
San Francisco, CA 94104
415.896.5900 phone
415.896.0332 fax

www.esassoc.com

26 October 2005

DNA Cultural Resources Consultants
"Alyisha" Diane Marie Garcia
P.O. Box 129
Carpinteria, Califiornia 93014

Subject: Request for Cultural Resources Information
San Luis Obispo County Regional Airport Master Plan Update

Dear Ms. Garcia:

ESA Airports is working with the Federal Aviation Administration (FAA) in conducting cultural resource studies in support of the proposed Master Plan Update for the San Luis Obispo County Regional Airport. The results of the cultural resource studies will be used to prepare an Environmental Assessment (EA) / Environmental Impact Report (EIR) to fulfill the requirements of the National Environmental Policy Act (NEPA) and the California Environmental Quality Act (CEQA). ESA Airports received your name from the Native American Heritage Commission, which indicated that you may have knowledge of Native American cultural resources in the project area.

The San Luis Obispo County Regional Airport is located on the west side of State Route 227 between Tank Farm Road and Buckley Road, south of the City of San Luis Obispo. The project area is located on the USGS 7.5-minute topographic quadrangle for Pismo Beach, Sections 11 and 12, Township 31 South, Range 12 East (see attached map). All of the project work will occur on Airport property.

In an effort to provide an adequate appraisal of all potential impacts that may result from the proposed project, ESA Airports is requesting information, on behalf of the FAA, about cultural resources, including archaeological and traditional cultural properties, that may exist within or adjacent to the project area. Please contact me by telephone (415.896.5900), fax (415.896.0332), or email (dfull@esassoc.com) if you know of any cultural resources within the project area.

Thank you for your time and cooperation regarding this matter.

Very truly yours,

David J. Full, AICP
Vice President

ESA Airports

225 Bush Street
Suite 1700
San Francisco, CA 94104
415.896.5900 phone
415.896.0332 fax

www.esassoc.com

26 October 2005

Chief Joseph Ballisteros
5811 Lone Pine Place
Paso Robles, California 93446

Subject: Request for Cultural Resources Information
San Luis Obispo County Regional Airport Master Plan Update

Dear Chief Ballisteros:

ESA Airports is working with the Federal Aviation Administration (FAA) in conducting cultural resource studies in support of the proposed Master Plan Update for the San Luis Obispo County Regional Airport. The results of the cultural resource studies will be used to prepare an Environmental Assessment (EA) / Environmental Impact Report (EIR) to fulfill the requirements of the National Environmental Policy Act (NEPA) and the California Environmental Quality Act (CEQA). ESA Airports received your name from the Native American Heritage Commission, which indicated that you may have knowledge of Native American cultural resources in the project area.

The San Luis Obispo County Regional Airport is located on the west side of State Route 227 between Tank Farm Road and Buckley Road, south of the City of San Luis Obispo. The project area is located on the USGS 7.5-minute topographic quadrangle for Pismo Beach, Sections 11 and 12, Township 31 South, Range 12 East (see attached map). All of the project work will occur on Airport property.

In an effort to provide an adequate appraisal of all potential impacts that may result from the proposed project, ESA Airports is requesting information, on behalf of the FAA, about cultural resources, including archaeological and traditional cultural properties, that may exist within or adjacent to the project area. Please contact me by telephone (415.896.5900), fax (415.896.0332), or email (dfull@esassoc.com) if you know of any cultural resources within the project area.

Thank you for your time and cooperation regarding this matter.

Very truly yours,

David J. Full, AICP
Vice President

ESA Airports

225 Bush Street
Suite 1700
San Francisco, CA 94104
415.896.5900 phone
415.896.0332 fax

www.esassoc.com

26 October 2005

Beverly Salazar Folkes
1931 Shadybrook Drive
Thousand Oaks, California 91362

Subject: Request for Cultural Resources Information
San Luis Obispo County Regional Airport Master Plan Update

Dear Ms. Folkes:

ESA Airports is working with the Federal Aviation Administration (FAA) in conducting cultural resource studies in support of the proposed Master Plan Update for the San Luis Obispo County Regional Airport. The results of the cultural resource studies will be used to prepare an Environmental Assessment (EA) / Environmental Impact Report (EIR) to fulfill the requirements of the National Environmental Policy Act (NEPA) and the California Environmental Quality Act (CEQA). ESA Airports received your name from the Native American Heritage Commission, which indicated that you may have knowledge of Native American cultural resources in the project area.

The San Luis Obispo County Regional Airport is located on the west side of State Route 227 between Tank Farm Road and Buckley Road, south of the City of San Luis Obispo. The project area is located on the USGS 7.5-minute topographic quadrangle for Pismo Beach, Sections 11 and 12, Township 31 South, Range 12 East (see attached map). All of the project work will occur on Airport property.

In an effort to provide an adequate appraisal of all potential impacts that may result from the proposed project, ESA Airports is requesting information, on behalf of the FAA, about cultural resources, including archaeological and traditional cultural properties, that may exist within or adjacent to the project area. Please contact me by telephone (415.896.5900), fax (415.896.0332), or email (dfull@esassoc.com) if you know of any cultural resources within the project area.

Thank you for your time and cooperation regarding this matter.

Very truly yours,

David J. Full, AICP
Vice President

ESA Airports

225 Bush Street
Suite 1700
San Francisco, CA 94104
415.896.5900 phone
415.896.0332 fax

www.esassoc.com

26 October 2005

Santa Ynez Band of Mission Indians
Vincent Armenta, Chairperson
P.O. Box 517
Santa Ynez, California 93460

Subject: Request for Cultural Resources Information
San Luis Obispo County Regional Airport Master Plan Update

Dear Mr. Armenta:

ESA Airports is working with the Federal Aviation Administration (FAA) in conducting cultural resource studies in support of the proposed Master Plan Update for the San Luis Obispo County Regional Airport. The results of the cultural resource studies will be used to prepare an Environmental Assessment (EA) / Environmental Impact Report (EIR) to fulfill the requirements of the National Environmental Policy Act (NEPA) and the California Environmental Quality Act (CEQA). ESA Airports received your name from the Native American Heritage Commission, which indicated that you may have knowledge of Native American cultural resources in the project area.

The San Luis Obispo County Regional Airport is located on the west side of State Route 227 between Tank Farm Road and Buckley Road, south of the City of San Luis Obispo. The project area is located on the USGS 7.5-minute topographic quadrangle for Pismo Beach, Sections 11 and 12, Township 31 South, Range 12 East (see attached map). All of the project work will occur on Airport property.

In an effort to provide an adequate appraisal of all potential impacts that may result from the proposed project, ESA Airports is requesting information, on behalf of the FAA, about cultural resources, including archaeological and traditional cultural properties, that may exist within or adjacent to the project area. Please contact me by telephone (415.896.5900), fax (415.896.0332), or email (dfull@esassoc.com) if you know of any cultural resources within the project area.

Thank you for your time and cooperation regarding this matter.

Very truly yours,

David J. Full, AICP
Vice President

SANTA YNEZ BAND OF MISSION INDIANS
Tribal Elders Council
P.O. Box 365
Santa Ynez, Ca 93460
(805) 688-8446 FAX (805) 693-1768
elders@santaynezchumash.org

November 17, 2005

David Full, AICP
Vice President
ESA Airports
225 Bush Street, Suite 1700
San Francisco, CA 94104

RE: Request for Cultural Resources Information
San Luis Obispo County Regional Airport Master Plan Update

Dear Mr. Full:

Thank you for contacting the Tribal Elders Council for the Santa Ynez Band of Chumash Mission Indians in regards to the above mentioned site.

While *at this time*, the Elders Council has no immediate knowledge of the project area as being spiritual or ceremonial, we would like to request the area be surveyed for cultural resources. Additionally we would like to review the Environmental Impact Report, when availability allows. If there is potential for the disturbance of archaeological sites, we would request that earthwork pertaining to the site be subject to Native American monitoring. We look forward to hearing from you at your earliest convenience.

On behalf of the Tribal Elders Council
Sincerely Yours,

Adelina Alva-Padilla, Chairwoman
Tribal Elders Council

AAP: hg

SHPO CORRESPONDENCE

U.S Department
of Transportation
Federal Aviation Administration

San Francisco Airports District Office
831 Mitten Road, Room 210
Burlingame, California 94010

15 February 2006

Mr. Milford Wayne Donaldson
State Historic Preservation Officer
Department of Parks and Recreation
Office of Historic Preservation
P.O. Box 942896
Sacramento, California 94296-0001

Request for Section 106 Consultation for the San Luis Obispo County Regional Airport Runway 11 Extension

Dear Mr. Donaldson:

Pursuant to Section 106 of the National Historic Preservation Act of 1966, as amended, the Federal Aviation Administration (FAA) is requesting your review and comment on the enclosed Cultural Resources analysis to be contained in the Draft Environmental Assessment (EA) / Environmental Impact Report (EIR).

The Federal Aviation Administration (FAA), Airports District Office (ADO), is the lead federal agency responsible for an environmental determination in accordance with the National Environmental Policy Act (NEPA) for near-term Master Plan improvements at San Luis Obispo County Regional Airport. The County of San Luis Obispo is the lead local agency responsible for an environmental determination in accordance with the California Environmental Quality Act (CEQA). The Airport Master Plan period, 2006 to 2025, includes long-term project implementation that is not within the scope of the NEPA review conducted by the FAA-ADO pursuant to Council on Environmental Quality Regulations as implemented under FAA Orders 1050.1E (Environmental Impacts: Policies and Procedures) and 5050.4A (Airport Environment Handbook). The FAA-ADO reviewed a revised Airport Layout Plan (ALP) for future grant funding or local project implementation within the time period of 2006 to 2010. The review of the proposed action covers the project components identified in Table 1 in Attachment A (Figure 1 in Attachment A shows the location of each of the project components).

Request for Section 106 Consultation for the San Luis Obispo County Regional Airport Runway 11 Extension

All existing and proposed development must be depicted on an approved ALP. The FAA-ADO previously reviewed a revised ALP for the project components listed above. The Area of Potential Effect is defined by the ALP boundary (see the area depicted on Figure 2 in Attachment A).

Attachment B presents the Cultural Resources section of the Draft EA/EIR. Attachment C presents the Primary Record Forms for buildings within the APE that are more than 45 years old. Attachment D presents the correspondence with the Native American Heritage Commission and the Native American contacts. As shown in these attachments, no known historic or archaeological resources exist within the APE. The FAA has determined that the federal undertaking of grant funding, the approval of an ALP, and implementation of the proposed near-term Airport Master Plan improvements will not adversely effect historic or archaeological resources. We request your concurrence in this determination of no adverse effect.

If you have any further questions or comments regarding this proposed action, please contact Barry Franklin at 650-876-2778 ext. 614.

Sincerely;

ORIGINAL SIGNED BY
ANDREW M. RICHARDS

Andrew M. Richards

Manager, Airports District Office

Enclosures: (1) Proposed Actions – Attachment A
(2) Cultural resources Section of the Draft EA/EIR – Attachment B

cc: San Luis Obispo County Department of General Services, Klaasje Nairne (w/o encls)
Environmental Science Associates, David Full (w/o encls)

OFFICE OF HISTORIC PRESERVATION
DEPARTMENT OF PARKS AND RECREATION
P.O. BOX 942896
SACRAMENTO, CA 94296-0001
(916) 653-6624 Fax: (916) 653-9824
calshpo@ohp.parks.ca.gov
www.ohp.parks.ca.gov

March 22, 2006 Reply To: FAA060217A

Andrew M Richards, Manager
San Francisco Airports District Office
831 Mitten Road, Room 210
Burlingame, CA 94010

Re: Finding of Eligibility and Effect for the Proposed San Luis Obispo County Regional Airport Runway 11 Extension, San Luis Obispo, CA

Dear Mr. Richards:

You have provided me with the results of your efforts to determine whether the undertaking referenced above may affect historic properties. You have done this, and are consulting with me, in order to comply with Section 106 of the National Historic Preservation Act and implementing regulations codified at 36 CFR Part 800.

The Federal Aviation Administration (FAA) has determined that the following properties are not eligible for the National Register of Historic Places (NRHP) and that the proposed undertaking will have no adverse effect on historic properties:

- Spirit of San Luis Restaurant, 925 Airport Drive, San Luis Obispo, CA
- San Luis Obispo County Regional Airport Terminal, 901 Aero Drive, San Luis Obispo, CA
- Tank Farm Berms, Tank Farm Road, San Luis Obispo, CA
- Mrs. Pence's House, 4587 Broad Street, San Luis Obispo, CA

Based on review of the submitted documentation, I have the following comments:

1) I concur that the above listed properties are not eligible for the NRHP.
2) Given that there are no historic properties located within the area of potential effect, a finding of no historic properties affected, as opposed to no adverse effect, for this project would be appropriate.

If I have not received a response from you within 15 days, I will assume that you concur with my revised finding.

	600
	600A
	602
	603
	610
	611
	612
	613
	614
	615
	620
	621
	622
	623
	624
	625
	626
	667
	676
	677
	686

Thank you for considering historic properties during project planning. If you have any questions, please call Natalie Lindquist at (916) 654-0631 and e-mail at nlind@ohp.parks.ca.gov.

Sincerely,

Milford Wayne Donaldson, FAIA
State Historic Preservation Officer

APPENDIX H

Special Status Species in Airport Vicinity

TABLE H-1
SPECIAL STATUS SPECIES WITH POTENTIAL TO OCCUR IN THE AIRPORT VICINITY
FEDERAL OR STATE THREATENED AND ENDANGERED SPECIES

Common Name *Scientific Name*	**Listing Status USFWS/ CDFG**	**General Habitat**	**Potential for Occurrence**	**Period of Identification**
Invertebrates				
Morro shoulderband snail *Helminthoglypta walkeriana*	FE/--	Population considered endangered by the USFWS is restricted to coastal strand in the vicinity of Morro Bay (see discussion below).	**Low Potential.** The project area is out of the range of this population. Inland species observed on Chevron Tank Farm property (Unocal, 2004)	Year round
Longhorn fairy shrimp *Branchinecta longiantenna*	FE/--	Endemic to small, rain-filled grassland pools of the Central Valley.	**Low Potential**. This species was not identified during fairy shrimp sampling on the Chevron Tank Farm property (Unocal, 2003b).	Year round (eggs dry season, adults in Winter
Vernal pool fairy shrimp *Branchinecta lynchi*	FT/--	Grassland vernal pools.	**Present**. Aquatic habitat within the Chevron Tank Farm property supports this species (Unocal, 2003b).	Year round (eggs dry season, adults in Winter)
Fish				
Tidewater goby *Eucyclogobius newberryi*	FE/CSC	Shallow waters of bays and estuaries.	**Low Potential.** Suitable habitat occurs near the mouth of San Luis Obispo Creek to 2.5 miles upstream.	Year round
Steelhead south-central California coast ESU *Oncorhynchus mykiss*	FT/CSC	Drainages in the coastal basins from Pajaro River south to, but not including, Santa Maria River Critical habitat does not include the East Fork of San Luis Obispo Creek.	**Low Potential**. Low quality habitat present in East Fork of San Luis Obispo Creek. Known to occur within Middle San Luis Obispo Creek and Lower San Luis Obispo Creek and several tributaries (Tamagni, 1995).	Year round
Amphibians				
California tiger salamander *Ambystoma californiense*	FT/CSC	Seasonal freshwater ponds with little or no emergent vegetation. Uses mammal burrows in upland habitat for aestivation during the dry season.	**Low Potential.** Surveys for this species at the Chevron Tank Farm property did not identify this species (Unocal, 2003a). Habitat disturbance and non-native predator populations likely preclude this species.	November- May

TABLE H-1 (continued)
SPECIAL STATUS SPECIES WITH POTENTIAL TO OCCUR IN THE AIRPORT VICINITY
FEDERAL OR STATE THREATENED AND ENDANGERED SPECIES

Common Name ***Scientific Name***	**Listing Status** **USFWS/ CDFG**	**General Habitat**	**Potential for Occurrence**	**Period of Identification**
California red-legged frog *Rana aurora draytonii*	FT/CSC	Breed in stock ponds, pools, and slow-moving streams with emergent vegetation for escape cover and egg attachment. Where water is seasonal often uses mammal burrows in upland habitat for aestivation.	**Low Potential.** Surveys for this species at the Chevron Tank Farm property did not identify this species (Unocal, 2003a). Habitat disturbance and non-native predator populations likely preclude this species.	May- November
Birds				
Western snowy plover *Charadrius alexandrinus nivosus*	FT/CSC	Nests and forages on sandy beaches on marine and estuarine shores - requires sandy, gravely, or friable soils for nesting.	**Low Potential**. Suitable habitat not present on project site.	Year round
Western yellow-billed cuckoo *Coccyzus americanus occidentalis*	FC/CE	Riparian forests along flood bottoms of large river systems.	**Low Potential.** Suitable habitat not present on project site.	June-September
American peregrine falcon *Falco peregrinus anatum*	--/CE	Forages in marshes in grasslands, nesting habitat includes high, protected cliffs and ledges near water.	**Present.** Species observed foraging on Chevron Tank Farm property (Unocal, 2004); no suitable nesting habitat on project site.	Year-round
California least tern *Sterna antillarum browni*	FE/CE	Colonial breeder on bare or sparsely vegetated flat substrates including sand beaches, alkali flats, land fills, or paved areas.	**Low Potential**. Suitable habitat not present on project site.	April- October
Least Bell's vireo *Vireo bellii pusillus*	FE/CE	Low elevation riparian habitat near water or dry river bottoms.	**Low Potential**. This species has not been observed in the project region; riparian habitat is not suitable for this species.	April-August
Plants				
Marsh sandwort *Arenaria paludicola*	FE/CE/ List 1B	Freshwater marshes and swamps with dense *Typha*, *Juncus,* and *Scirpus*	**Low Potential.** Rare plant surveys did not identify this species on the project site (Unocal, 2003a).	May- August
Pismo clarkia *Clarkia speciosa ssp. immaculata*	FE/CR/ List 1B	Sandy soil openings in chaparral, cismontane woodland, and valley and foothill grassland communities	**Low Potential.** Rare plant surveys did not identify this species on the project site (Unocal, 2003a).	May - July

TABLE H-1 (continued)
SPECIAL STATUS SPECIES WITH POTENTIAL TO OCCUR IN THE AIRPORT VICINITY
FEDERAL OR STATE THREATENED AND ENDANGERED SPECIES

Common Name ***Scientific Name***	**Listing Status** **USFWS/ CDFG**	**General Habitat**	**Potential for Occurrence**	**Period of Identification**
Chorro Creek bog thistle *Cirsium fontinale var. obispoense*	FE/CE/ List 1B	Chaparral and cismontane woodlands in serpentine seeps. Endemic to San Luis Obispo county	**Low Potential**. Suitable habitat for this species is not present on the project area; rare plant surveys did not identify this species on the project site (Unocal, 2003a).	February - July
La Graciosa thistle *Cirsium loncholepis*	FE/CT/ List 1B	Coastal dunes, brackish marshes, and riparian scrub	**Low Potential.** Rare plant surveys did not identify this species on the project site (Unocal, 2003a).	May- August
Gambel's watercress *Rorippa gambellii*	FE/CT/ List 1B	Freshwater and brackish marshes at margins of lakes and streams	**Low Potential.** Rare plant surveys did not identify this species on the project site (Unocal, 2003a).	April - September
Adobe sanicle *Sanicula maritima*	--/CR/ List 1B	Grows in meadow and seeps, valley and foothill grasslands, chaparral, and coastal prairie	**Low Potential.** Rare plant surveys did not identify this species on the project site (Unocal, 2003a).	February - May
Invertebrates				
Monarch butterfly *Danaus plexippus*	--/*	Winter in California. Roost in wind protected eucalyptus, Monterey pine, and cypress groves, with water and nectar sources nearby.	**Low Potential.** Eucalyptus, Monterey pine or other suitable roosting habitat not present in project area.	December-March
California linderiella *Linderiella occidentalis*	FSC/--	Seasonal pools in intact grasslands where alluvial soils are underlaid by hardpan or in sandstone depressions	**Present**. Aquatic habitat within the Chevron Tank Farm property supports this species (Unocal, 2003b).	Winter months
Amphibians				
Coast range newt *Taricha torosa torosa*	--/CSC	Breeds in ponds, reservoirs and slow-moving streams	**Low Potential**. Aquatic vertebrate surveys at the Chevron Tank Farm property did not identify this species (Unocal, 2003a). Habitat disturbance and non-native predator populations likely preclude this species.	Fall-late Spring
Reptiles				
Silvery legless lizard *Aniella pulchra pulchra*	FSC/CSC	Moist sandy or loose loamy soils in areas with sparse vegetation.	**Low Potential.** Suitable habitat not present within project site.	April- September

TABLE H-1 (continued)
SPECIAL STATUS SPECIES WITH POTENTIAL TO OCCUR IN THE AIRPORT VICINITY
FEDERAL OR STATE THREATENED AND ENDANGERED SPECIES

Common Name ***Scientific Name***	**Listing Status** **USFWS/ CDFG**	**General Habitat**	**Potential for Occurrence**	**Period of Identification**
Southwestern pond turtle *Clemmys marmorata pallida*	FSC/CSC	Valley locations with slow-moving waterways. Upland habitat and basking sites must be easily accessible. Range: South of San Francisco to northwest Baja California and west of the Mojave Desert.	**Present**. Species observed within East Fork of San Luis Obispo Creek (Unocal, 2003a).	Year round
Birds				
Cooper's hawk *Accipiter cooperii*	--/CSC	Nests in riparian growths of deciduous trees and live oak woodlands	**Present.** Species observed over East Fork of San Luis Obispo Creek; suitable nesting habitat present on project site (Unocal, 2003a).	March-July
Sharp-shinned hawk *Accipiter striatus*	--/CSC	Nests in riparian growths of deciduous trees and live oak woodlands.	**Present.** Species observed on Chevron Tank Farm property (Unocal, 2004). Suitable habitat located along East Fork San Luis Obispo Creek.	March-July
Tricolored blackbird *Agelaius tricolor*	FSC/CSC	Riparian thickets and emergent vegetation near open water.	**Low to Moderate Potential.** Freshwater marsh provides potential habitat on the project site.	Year round
Golden eagle *Aquila chrysaetos*	--/CSC	Nests in canyons and large trees in open habitats	**Present.** Observed on the Chevron Tank Farm property.	Year-round
Burrowing owl *Athene cunicularia*	FSC/CSC	Nests in mammal burrows in open, sloping grasslands.	**Present.** Grasslands and other areas on the project site supporting small mammal burrows provide suitable habitat. Species observed on Chevron Tank Farm property in winter months (Unocal, 2004).	Year round
Ferruginous hawk *Buteo regalis*	--/CSC	Forages in open grasslands and agricultural areas; breeds north of California.	**Present.** Species observed on site as winter migrant (Unocal, 2004).	Winter
Northern harrier *Circus cyaneus*	--/CSC	Mostly nests in emergent vegetation, wet meadows or near rivers and lakes, but may nest in grasslands away from water.	**Present.** Species observed on Chevron Tank Farm property as winter migrant (Unocal, 2004).	Year-round
White-tailed kite *Elanus leucurus*	--/3511	Nests near wet meadows, marshes, and open grasslands in dense oak, willow or other large tree stands.	**Present.** Species observed on Chevron Tank Farm property (Unocal, 2004). Suitable nesting habitat present on the project site.	Year round

TABLE H-1 (continued)
SPECIAL STATUS SPECIES WITH POTENTIAL TO OCCUR IN THE AIRPORT VICINITY
FEDERAL OR STATE THREATENED AND ENDANGERED SPECIES

Common Name ***Scientific Name***	**Listing Status** **USFWS/ CDFG**	**General Habitat**	**Potential for Occurrence**	**Period of Identification**
California horned lark *Eremophila alpestris actia*	--/CSC	Short grass prairie, fallow grain fields, open areas with short vegetation	**Present**. Species observed on the Chevron Tank Farm property (Unocal, 2003a; 2004). Suitable nesting habitat present on the project site.	March- July
Merlin *Falco columbarius*	--/CSC	Forages over coastlines, open grasslands, savannahs, woodlands, and wetlands; breeds north of California.	**Present.** Species observed on site as winter migrant (Unocal, 2004).	Winter
Prairie falcon *Falco mexicanus*	--CSC	Dry, open terrain, flat or hilly with breeding sites located on cliffs	**Low Potential.** Suitable nesting habitat not present on the project site.	February-September
Saltmarsh common yellowthroat *Geothlypis trichas*	--/CSC	Saline and freshwater marshes	**Low to Moderate Potential.** Observed in the northern region of the Chevron Tank Farm property (Unocal, 2003a), may occur in freshwater marsh on the project site.	Winter
Loggerhead shrike *Lanius ludovicianus*	FSC/CSC	Nests in shrublands and forages and open grasslands	**Present.** Observed on project site (City of San Luis Obispo, 2003, Unocal, 2004).	March-August
Mammals				
Pallid bat *Antrozous pallidus*	--/CSC	Open, dry habitats with rocky outcrops, cliffs, caverns, and crevices for roosting, most commonly in deserts, grasslands, and shrublands, in addition to woodlands & forests	**Low Potential.** Suitable roosting habitat not present on the project site. Project site may provide potential foraging habitat.	March-August
American badger *Taxidea taxus*	--/CSC	Most abundant in drier open stages of most shrub, forest, and herbaceous habitats, with friable soils.	**Low Potential.** Suitable habitat not identified during field surveys of the project site (Unocal, 2003a).	Year-round
Plants				
Hoover's bent grass *Agrostis hooveri*	--/--/ List 1B	Chaparral, cismontane woodland, valley and foothill grassland	**Low Potential.** Rare plant surveys did not identify this species on the project site (Unocal, 2003a).	April – July
Mile's milk-vetch *Astragalus didymocarpus* var. *milesianus*	--/--/ List 1B	Coastal scrub	**Low Potential.** Rare plant surveys did not identify this species on the project site (Unocal, 2003a).	March – June
San Luis Obispo mariposa lily *Calochortus simulans*	--/--/ List 1B	Valley and foothill grassland, chaparral, and cismontane woodland	**Low Potential.** Rare plant surveys did not identify this species on the project site (Unocal, 2003a).	April – May

TABLE H-1 (continued)
SPECIAL STATUS SPECIES WITH POTENTIAL TO OCCUR IN THE AIRPORT VICINITY
FEDERAL OR STATE THREATENED AND ENDANGERED SPECIES

Common Name ***Scientific Name***	**Listing Status** **USFWS/ CDFG**	**General Habitat**	**Potential for Occurrence**	**Period of Identification**
Dwarf calycadenia *Calycadenia villosa*	--/--/ List 1B	Chaparral, cismontane woodland, valley and foothill grassland, and meadows and seeps	**Low Potential.** Rare plant surveys did not identify this species on the project site (Unocal, 2003a).	May – October
Cambria morning-glory *Calystegia subacaulis* ssp. *episcopalis*	--/--/ List 1B	Chaparral and cismontane woodland	**Present.** Species observed within the Tank Farm site (Unocal, 2003a).	April – May
San Luis Obispo sedge *Carex obispoensis*	--/--/ List 1B	Grows in closed-cone coniferous forest, chaparral, coastal prairie, coastal scrub, and valley and foothill grasslands	**Low Potential.** Rare plant surveys did not identify this species on the project site (Unocal, 2003a).	April – June
Obispo Indian paintbrush *Castilleja densiflora ssp. obispoensis*	--/--/ List 1B	Valley and foothill grasslands	**Low Potential.** Rare plant surveys did not identify this species on the project site (Unocal, 2003a).	April – May
Congdon's tarplant *Centromadia parryi* ssp. *congdonii*	FSC/--/List 1B	Alkaline areas in valley and foothill grassland	**Present.** Species observed within the Chevron Tank Farm property (Unocal, 2003a).	May – November
Dwarf soaproot *Chlorogalum pomeridianum* var. *minus*	--/--/ List 1B	Serpentine soils in chaparral, and valley and foothill grasslands	**Low Potential.** Serpentine soils not present on project site; rare plant surveys did not identify this species on the project site (Unocal, 2003a).	May – August
Leafy tarplant *Deinandra increscens* ssp. *foliosa*	--/--/ List 1B	Valley and foothill grassland	**Low Potential.** Rare plant surveys did not identify this species on the project site (Unocal, 2003a).	June – September
Hoover's button-celery *Eryngium aristulatum* var. *hooveri*	--/--/ List 1B	Alkaline depressions, vernal pools, roadside ditches, and other wet places near the coast	**Present.** Species observed within the Chevron Tank Farm property (Unocal, 2003a).	July
San Francisco gumplant *Grindelia hirsutula var. maritima*	FSC/--/ List 1B	Coastal scrub, coastal bluff scrub, and valley and foothill grassland	**Low Potential.** Rare plant surveys did not identify this species on the project site (Unocal, 2003a).	August- September
Jones's layia *Layia jonesii*	--/--/List 1B	Clay soils and serpentine outcrops in chaparral and valley and foothill grassland	**Low Potential.** Serpentine soils not present on project site; rare plant surveys did not identify this species on the project site (Unocal, 2003a).	March - May
Black-flowered figwort *Scrophularia atrata*	--/--/ List1B	Closed-cone coniferous forest, chaparral, coastal dunes, coastal scrub and riparian scrub in sand , diatomaceous shales, and soils derived from other parent material	**Low Potential.** Suitable habitat not present within project area; rare plant surveys did not identify this species on the project site (Unocal, 2003a).	March - July

TABLE H-1 (continued)
SPECIAL STATUS SPECIES WITH POTENTIAL TO OCCUR IN THE AIRPORT VICINITY
FEDERAL OR STATE THREATENED AND ENDANGERED SPECIES

Common Name ***Scientific Name***	**Listing Status** **USFWS/ CDFG**	**General Habitat**	**Potential for Occurrence**	**Period of Identification**
Rayless ragwort *Senecio aphanactis*	--/--/List 2	Coastal scrub and cismontane woodland	**Low Potential.** Suitable habitat not present within project area; rare plant surveys did not identify this species on the project site (Unocal, 2003a).	January – April
Caper-fruited tropidocarpum *Tropidocarpum capparideum*	--/--/ List 1B	Valley and foothill grasslands in alkaline hills	**Low Potential.** Rare plant surveys did not identify this species on the project site (Unocal, 2003a).	March-April

STATUS CODES:

FEDERAL: (U.S. Fish and Wildlife Service)
FE = Listed as Endangered (in danger of extinction) by the Federal Government.
FT = Listed as Threatened (likely to become Endangered within the foreseeable future) by the Federal Government.
FP = Proposed for Listing as Endangered or Threatened.
FC = Candidate to become a *proposed* species.
FSC = Federal Species of Concern. May be Endangered or Threatened, but not enough biological information has been gathered to support listing at this time.

STATE: (California Department of Fish and Game)
CE = Listed as Endangered by the State of California
CT = Listed as Threatened by the State of California
CR = Listed as Rare by the State of California (plants only)
CSC = California Species of Special Concern
3503.5=Protection for nesting species of Falconiformes (hawks) and Strigiformes (owls)
* = Special Animals
3511 = Fully Protected Species

California Native Plant Society
List 1A=Plants presumed extinct in California
List 1B=Plants rare, Threatened, or Endangered in California and elsewhere
List 2= Plants rare, Threatened, or Endangered in California but more common elsewhere

ESU = Evolutionarily Significant Unit.

(SOURCES: CDFG 2005; CNPS 2005; USFWS 2005)

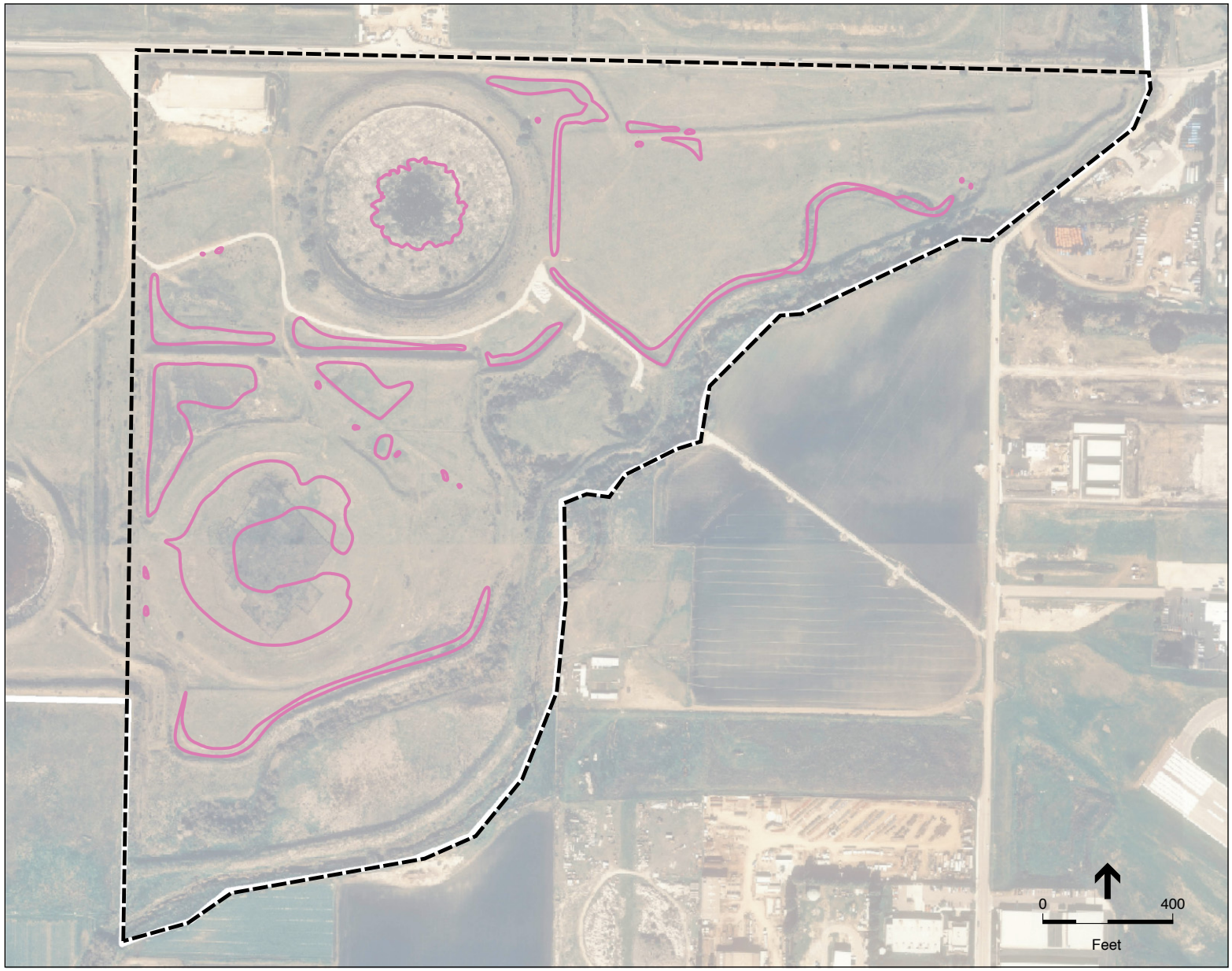
Morro Shoulderband Snail

In the early 1990s the Morro shoulderband snail (*Helminthoglypta walkeriana)* was known only from coastal dune scrub communities at the south end of Morro Bay (USFWS, 2004). As a result of this limited distribution and potential threats to the species such as habitat destruction and competition from introduced snails, the USFWS listed this species as endangered in 1994. Within the past several years, Morro shoulderband snails with unique shell characteristics (*Helminthoglypta walkeriana* var. *morroensis*) have been observed in inland areas such as the Los Osos and Chorro valleys, Camp San Luis Obispo, the City of San Luis Obispo, around Cayucos and in the community of Edna (USFWS, 2004). These snails have been observed within various habitat types including grasslands, grassland swales, and rock outcrops, and in disturbed areas supporting non-native plant species and discarded wood and metal.

Until recently, the USFWS afforded all Morro shoulderband snails protection under the Endangered Species Act because the taxonomic difference between Morro shoulderband snails occurring in and around the community of Los Osos and snails in inland areas had not been resolved. However, recent guidance from the USFWS indicates that it does not consider Morro shoulderband snails found outside the Los Osos areas to be endangered and will not regulate these inland snails under the Endangered Species Act (USFWS, 2004). Thus, although Morro shoulderband snails were recently found in low numbers at several discrete locations on the Chevron Tank Farm property (Wolff, 2005), the USFWS considers these snails to be of a different taxon than the coastal population and would not consider them endangered or protected under the Endangered Species Act.

Aquatic Invertebrates

Numerous low-lying areas in grasslands throughout the Chevron Tank Farm property contain seasonal wetlands dominated by herbaceous vegetation. All seasonal wetlands on the Chevron Tank Farm property are either artificial habitats or natural habitats altered by construction and operation of the Chevron Tank Farm property. Dry and wet season sampling surveys for the federally threatened vernal pool fairy shrimp (*Branchinecta lynchi)*, federally endangered longhorn fairy shrimp (*B. longiantenna)*, and California linderiella (*Linderiella occidentalis),* a federal species of concern, were conducted within ponded areas of the Chevron Tank Farm property that provide potential habitat for these species. Potential habitat included areas that were seasonally, but not permanently, inundated and that supported standing water during the wet-season. Vernal pool fairy shrimp were identified in high densities within 27 of the 36 potential habitat areas on the Chevron Tank Farm property (see Figure H-1). California linderiella also were abundant on the Chevron Tank Farm property and were identified from 11 of the 36 potential habitat areas (Unocal, 2003b).



Study Area — Known Vernal Pool Fairy Shrimp *(Branchinecta lynchi)* Habitat

SOURCE: David Wolff Environmental, 2005

San Luis Obispo County Regional Airport Master Plan Update EA-EIR . 203092

Figure H-1

Known Locations of Vernal Pool Fairy Shrimp Habitat on the Chevron Tank Farm Property Adjacent to SBP

Aquatic Vertebrates

Tidewater Goby

The tidewater goby (*Eucyclogobius newberryi)* is federally threatened and a California species of special concern. This benthic fish inhabits shallow lagoons and the lower reaches of coastal streams. It differs from other species of gobies in California in that it is able to complete its entire life cycle in fresh to brackish water. Tidewater gobies typically inhabit areas of slow-moving water, avoiding strong wave actions or currents. Particularly important to the persistence of the species in lagoons is the presence of backwater, marshy habitats, as well as annual sand bar formation, to avoid being flushed out to the ocean during winter flood flows (J. Smith, 2003). The diet of the goby consists primarily of small crustaceans, aquatic insects, and molluscs (Moyle *et al*., 1995). Tidewater gobies are known to occur within San Luis Obispo Creek from the mouth of the creek to 2.5 miles upstream. The East Fork of San Luis Obispo Creek and its tributary do not provide habitat for this species.

Steelhead

The south-central California coast Evolutionarily Significant Unit (ESU) of steelhead (*Oncorhynchus mykiss*) is a federal threatened species and a California species of special concern. This ESU includes all naturally spawned populations of steelhead in coastal basins from the Pajaro River (inclusive) to, but not including, the Santa Maria River. On September 2, 2005, NMFS designated critical habitat for the south-central California coast steelhead ESU (Federal Register, 2005). This recent critical habitat designation includes the mainstem of San Luis Obispo Creek. However, the East Fork of San Luis Obispo Creek within the Airport vicinity is not included in the critical habitat designation.

Steelhead trout exhibit one of the most complex life histories of any salmonid species. The resident rainbow trout form spends its entire life in freshwater environments while the anadromous steelhead form migrates between their natal streams and the ocean. Steelhead require cool, clear streams with adequate gravel substrate, depth and velocity for spawning. Logs, undercut banks, and deep pools are important for cover from predators. The East Fork of San Luis Obispo Creek is highly disturbed due to adjacent agricultural, residential and commercial development. Grazing cattle have affected the streambed and banks and contributed to erosion. Some riparian vegetation and overhanging banks may provide some value as cover for fish species. However, the creek substrate is primarily silty fine sand and lacks gravel or cobble substrate suitable for spawning. Thus, although steelhead are known to occur within the middle San Luis Obispo Creek and lower San Luis Obispo Creek and several of its tributaries (Tamagni, 1995), the East Fork of San Luis Obispo Creek is not likely to support this species due to its disturbed setting, low habitat quality and the lack of complex shaded pools, riffles and runs, suitable spawning substrate, and perennial flows required by this species.

California Red-legged Frog

The California red-legged frog (*Rana aurora draytonii*) is a federal threatened species and California species of special concern that inhabits marshes, lakes, reservoirs, ponds, and slow parts of streams with heavily vegetated shorelines below 4,000 feet in elevation. Its range extends

from the western slope of the Cascade-Sierran mountain system, in the North and South Coast Ranges, and the Transverse Range (Stebbins, 1985). These wetland habitats typically occur in lowland or foothill woodlands, but may also occur in grasslands. This frog requires areas with permanent water to a depth of at least three feet and extensive emergent and submergent vegetation where there is suitable cover for both larvae and adults. Breeding takes place between January and July, with a peak in February. Primary predators of red-legged frog tadpoles include bullfrogs and introduced fish.

The East Fork of San Luis Obispo Creek and its tributary and several ponds in the study area provide potential habitat for California red-legged frog. This species is known to occur within the San Luis Obispo Creek watershed within Miossi Creek, near Fox Hollow Road, Reservoir Canyon north of the City of San Luis Obispo, the Chorro Creek watershed northwest of the City, and the Arroyo Grande Creek watershed (CDFG, 2005). However, although the East Fork of San Luis Obispo Creek provides deep pools and good cover for amphibians with overhanging banks and streamside vegetation, the only amphibians identified during protocol surveys of the East Fork of San Luis Obispo Creek within the study area were Pacific treefrogs (*Hyla regilla)* and bullfrogs (*Rana catesbiana)* (Unocal, 2003a). Protocol surveys of the tributary of the East Fork of San Luis Obispo Creek identified large numbers of crayfish (*Procambarus* sp.), a Pacific treefrog, and mosquitofish (*Gambusia affinis)* (Essex, 1998). California red-legged frog surveys both upstream and downstream of the study area within the East Fork of San Luis Obispo Creek have also identified numerous bullfrogs and no California red-legged frogs (Unocal, 2003a). With the exception of the grasslands on the Chevron Tank Farm property, upland habitats on the Airport and in the Airport vicinity are agricultural or disturbed in other ways that decrease their suitability for California red-legged frog. Thus, California red-legged frogs are not likely to be present within the study area.

Southwestern Pond Turtle

Southwestern pond turtle (*Clemmys marmorata pallida*) is a federal species of concern and California species of special concern. It is a thoroughly aquatic turtle found in permanent ponds, rivers, streams, and irrigation ditches with rocky or muddy bottoms, and emergent vegetation. Basking areas are required by this species include partially submerged logs, rocks, mats of vegetation or open mud banks. The East Fork of San Luis Obispo Creek and its tributary provide aquatic habitat for this species. In addition, grasslands on the Chevron Tank Farm property provide potential upland habitat for southwestern pond turtle. Five southwestern pond turtles were identified within the East Fork of San Luis Obispo Creek during protocol surveys for California red-legged frog (Unocal, 2003a).

Special Status Birds

The project site provides nesting and foraging habitat for several special-status bird species. Turkey vulture (*Cathartes aura*), red-tailed hawk (*Buteo jamaicensis*), and American kestrel (*Falco sparverius*) are year-round residents in the study area and northern harriers (*Circus cyaneus*), ferruginous hawks (*Buteo sparverius)*, and marlins (*Falco columbarius)* are winter migrants to this area (County of San Luis Obispo, 2005; Unocal, 2003a; 2004). Foraging habitat for raptors such as American peregrine falcon (*Falco peregrinus anatum),* golden eagle (*Aquila*

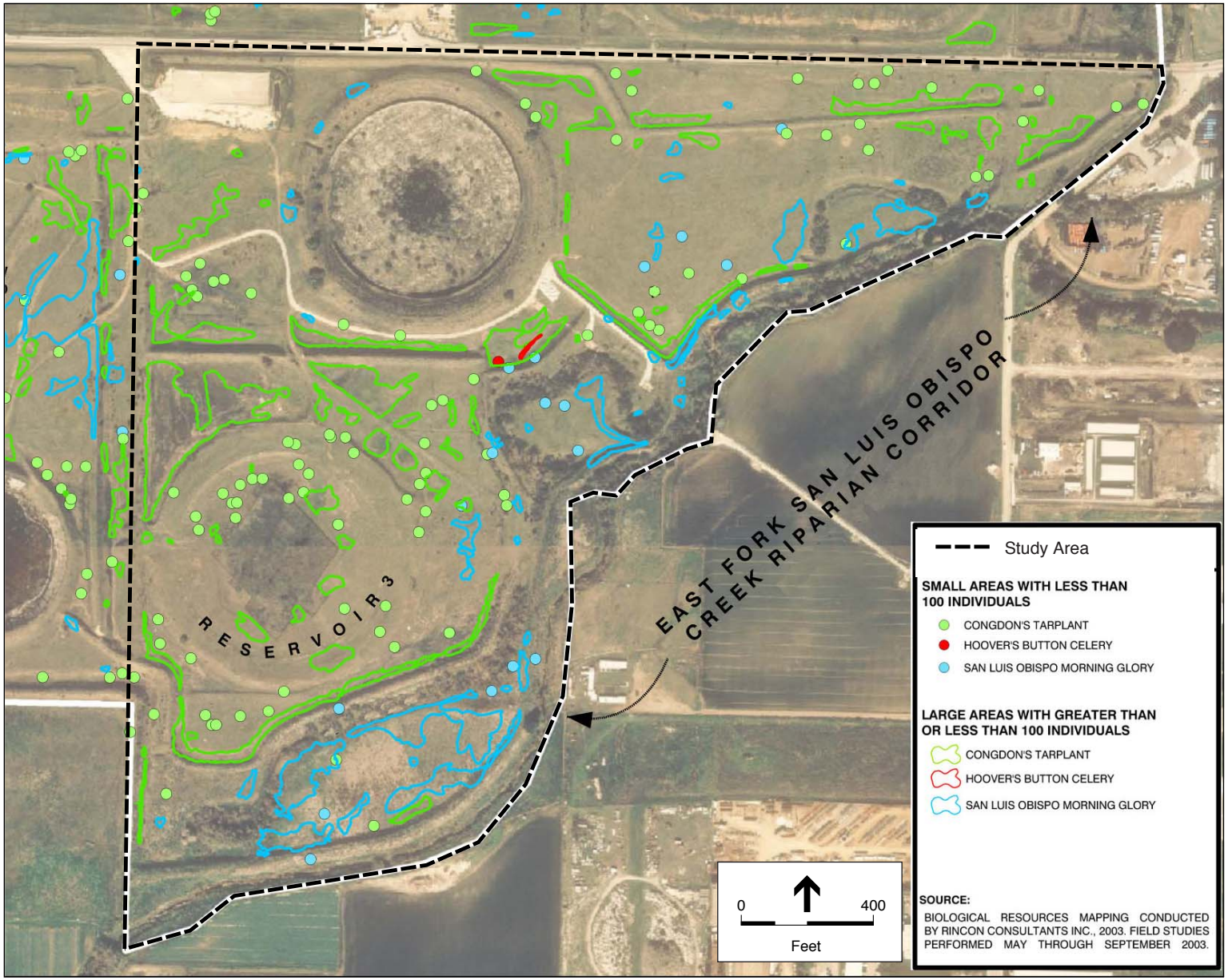
chrysaetos) and other birds on the Airport and in the Airport vicinity primarily includes open grasslands and agricultural fields. The riparian corridors of the East Fork of San Luis Obispo Creek and its tributary provide nesting habitat for sharp-shinned hawk (*Accipiter striatus)*, white-tailed kite (*Elanus leucurus),* and Cooper's hawk (*Accipiter cooperii),* which have been observed over the East Fork of San Luis Obispo Creek and other areas on the Chevron Tank Farm property (Unocal, 2003a, 2004). California horned lark (*Eremophila alpestris actia)* and loggerhead shrike (*Lanius lucovicianus)* have been observed foraging within grasslands on the Chevron Tank Farm property (Jones and Stokes, 2003; Unocal, 2003a; 2004) and may use similar habitats on the Airport and in the Airport vicinity for foraging and nesting. Common yellowthroat (*Geothlypis trichas)* also occur on the Chevron Tank Farm property and potentially within other areas supporting freshwater marsh in the study area. In addition, tricolored blackbird (*Agelaius tricolor)* may forage and nest in freshwater march in the study area. Lastly, grassland and agricultural habitats with small mammal burrows of sufficient size may provide nesting and foraging habitat for burrowing owl (*Athene cunicularia*), which has been observed on the Chevron Tank Farm property in winter months (Unocal, 2004). In addition to receiving protection as federal species of concern and/or California species of special concern, these birds are protected by the Migratory Bird Treaty Act and by California Fish and Game Code Section 3503, which prohibits the take or destruction of nests or eggs of birds in the order passerines. Raptors and their nests and eggs are specifically protected by California Fish and Game Code Section 3503.5.

Special Status Plants

Surveys for rare plants according to California Department of Fish and Game and California Native Plant Society guidelines were conducted on the Chevron Tank Farm property between May and September 2003 during the appropriate periods of identification for special status plants occurring in the project region. Three special status plant species were identified during surveys of the Chevron Tank Farm property: Congdon's tarplant (*Centromadia parryi* ssp. *congdonii)*, Cambria morning glory (*Calystegia subacaulis* ssp. *episcopalis*)[1], and Hoover's button-celery (*Eryngium aristulatum* var. *hooveri)* as shown on Figure H-2 (Unocal, 2003a).

Congdon's tarplant is a federal species of concern and California Native Plant Society List 1B species known to occur within seasonally wet areas within valley and foothill grasslands in the San Francisco Bay Area, northern Monterey County, and San Luis Obispo County. This species occurs on the Chevron Tank Farm property primarily in and adjacent to swales and low-lying areas within wetlands (Unocal, 2003a). Occurrences were also noted in tire track ruts, cattle footprints and other disturbed areas. This species also was identified in a vegetated swale within fallow fields on the Airport during reconnaissance surveys. Other areas within annual grassland habitats and fallow fields on the Airport and in the Airport vicinity also may support this species.

[1] This species is referred to as San Luis Obispo County morning-glory in Unocal, 2003a.



SOURCE: Rincon Consultants, Inc., 2005

San Luis Obispo County Regional Airport Master Plan Update EA-EIR . 203092

Figure H-2

Known Locations of Special Status Plants
on the Chevron Tank Farm Property Adjacent to SBP

Cambria morning-glory is a California Native Plant Society List 1B species that typically occurs within chaparral and cismontane woodland and other dry open scrub habitats. It is known only from San Luis Obispo County. Cambria morning-glory was identified within annual grassland habitats on berms or flat areas within the Chevron Tank Farm property and along the upland fringes of the riparian corridor of the East Fork of San Luis Obispo Creek (Unocal, 2003a). This species also may occur along the south side of the East Fork of San Luis Obispo Creek riparian corridor and within grassland areas on the Airport and in the Airport vicinity.

Hoover's button-celery, a California Native Plant Society List 1B species, occurs in alkaline depressions, vernal pools, roadside ditches and other wet areas in coastal habitats. It is known to occur within Alameda and San Luis Obispo counties and potentially San Benito and Santa Clara counties. On the Chevron Tank Farm property it occurs in low-lying areas within wetlands, often times with Congdon's tarplant (Unocal, 2003a). Low-lying wet areas within grasslands on the Airport and in the Airport vicinity may support Hoover's button-celery as well.

APPENDIX I

California Red-Legged Frog Habitat Site Assessment Data Sheets

SAN LUIS OBISPO COUNTY REGIONAL AIRPORT

California Red-legged Frog Protocol-level Habitat Assessment

Prepared for:
San Luis Obispo County

February 24, 2006

SAN LUIS OBISPO COUNTY REGIONAL AIRPORT

California Red-legged Frog Protocol-level Habitat Assessment

Prepared for:
San Luis Obispo County

February 24, 2006

1425 N. McDowell Boulevard
Suite 105
Petaluma, CA 94954
707.795.0900
www.esassoc.com

Los Angeles

Oakland

Orlando

Sacramento

San Francisco

Seattle

Tampa

203092

ESA

TABLE OF CONTENTS

San Luis Obispo County Regional Airport California Reg-legged Frog Protocol-level Habitat Assessment

SAN LUIS OBISPO COUNTY REGIONAL AIRPORT

California Red-legged Frog Habitat Assessment

Introduction

Purpose of Habitat Assessment and Summary

This report presents the results of protocol-level habitat assessment for the California red-legged frog (*Rana aurora draytonii*) in accordance with the August 2005 survey guidelines circulated by the U.S. Fish and Wildlife Service (USFWS). This assessment was conducted on the northern portion of the San Luis Obispo County Airport, San Luis Obispo County, at the request of the County in support of environmental review for the Airport Master Plan.

Protocol-level surveys for the California red-legged frog were conducted on the Airport in 1998 (Essex Environmental 1998) and in the current study area in 2003 (Hunt & Associates 2003). The findings of these studies were that California red-legged frogs were not found on the Airport; however, surveys noted the presence of suitable aquatic breeding habitat and bullfrogs in the East Fork of San Luis Obispo Creek (EFSLO Creek) and tributary drainages. In response to the regional sensitivity of aquatic habitat relative to the California red-legged frog, the County requested preparation of this protocol-level habitat assessment in accordance with the August 2005 USFWS survey guidelines to gain a current assessment of environmental circumstances. This survey finds that the creek still provides excellent habitat for the California red-legged frog; however, February 2006 records from the California Natural Diversity Database do not report any new California red-legged frog occurrences in close proximity to the Airport. This assessment follows the survey and reporting guidelines provided in the USFWS *Revised Guidance on Site Assessment and Field Surveys for California Red-legged Frogs* (USFWS, 2005).

Study Area Location

The study area is located in the City of San Luis Obispo, San Luis Obispo County, County, California (Figure I-1). In this area, EFSLO Creek flows through a semi- rural area south of the City of San Luis Obispo that is characterized by annual grasslands punctuated with seasonal wetlands, airport development to the south, and moderate urban and industrial development to the north and east. Elevations in the survey area range from approximately 120 to 160 feet above

mean sea level. In this area, the upper creek banks and nearby aquatic features are sparsely to densely vegetated with arroyo willow (*Salix lasiolepis*) and blue gum eucalyptus (*Eucalyptus globulus*) with limited growth of emergent vegetation on the channel bottom.

The study area is located in the San Luis Obispo Creek watershed, which ultimately drains to San Luis Obispo Bay, roughly 9 miles downstream. The 0.7 mile portion of EFSLO Creek and tributary drainages considered in the survey is located in Township 31 South, Range 12 East, Section 11 on the U.S.G.S. Pismo Beach 7.5-minute quadrangle. The current assessment included the reach of EFSLO Creek, starting 200 feet upstream of Santa Fe Road and continuing roughly 0.7 miles downstream of the Santa Fe Road Bridge. Orcutt Creek and Acacia Creek are tributary streams that were examined as well, as were ponded portions of the adjacent Chevron/Unocal property.

Proposed Project

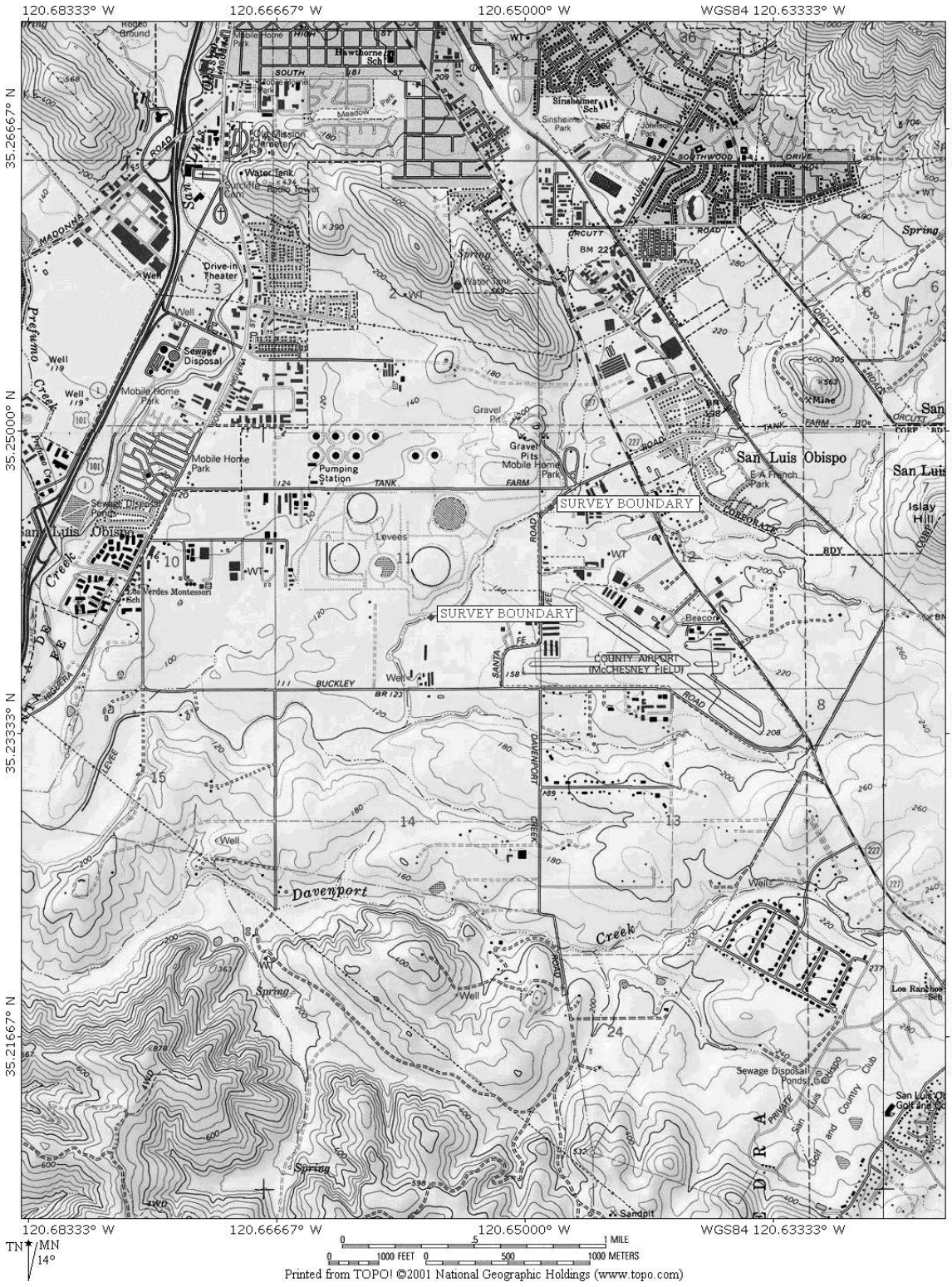
The primary project includes the proposed extension of Runway 11/29 by 800 feet. Most of the other airfield, aviation support facilities, and non-aviation projects identified in the project EA/EIR are functionally related to the proposed extension of Runway 11/29. In addition to airfield improvements, the project Master Plan includes new emergency and service access to ensure compliance with the FAA's *Runway Safety Area Program* and Federal Aviation Regulation (FAR) Part 139. Specific project activities are discussed in the project EA. The project would not alter habitat for the California red-legged frog in EFSLO Creek, but the runway extension would put some project facilities on active farmlands located in close proximity to the creek (i.e., within several hundred feet).

Site Assessment

Survey Methods

Prior to surveying the study area, the California Natural Diversity Database (CNDDB, 2006) and in-house records were searched to identify the local distribution of California red-legged frogs in San Luis Obispo County.

Environmental Science Associates' biologist Brian Pittman, CWB, conducted a single daytime habitat assessment survey of the project site and surrounding areas on February 17, 2006 in accordance with the USFWS *Revised Guidance on Site Assessment and Field Surveys for California Red-legged Frogs* (USFWS, 2005). Aquatic habitats were surveyed by walking channel edges and instream habitat. The survey involved reviewing and classifying wetland areas on the site to determine their value as breeding and/or aestivation habitat for ranid frogs, and identifying amphibian habitat use, as possible. The site survey was conducted between 1000 and 1305 PST under generally good survey conditions (sunny and calm) and additionally included accessible portions of tributary drainages (i.e., Acacia Creek and Orcutt Creek).



San Luis Obispo County Regional Airport / 203092 ■

Source: Topo, 2006

Figure I-1

Location of the Survey Boundaries in the East Fork of San Luis Obispo Creek on the Pismo Beach 7.5-Min. USGS Quadrangle

California Red-legged Frog Range and Sightings Within One Mile of the Survey Area

There are no California red-legged frog occurrences within 1.0 mile of the survey area (CNDDB, 2006), and no nearby records from San Luis Obispo Creek. Six occurrences are reported within five miles of the site. The nearest reported California red-legged frog sightings are located 3.8 miles north of the survey area, east of the City of San Luis Obispo, as a collection of five occurrences associated with Reservoir Canyon and upper tributaries to San Luis Obispo Creek (Figure I-2). The CNDDB (2006) considers these occurrences as extant populations. The next closest occurrence within 5 miles is located in an unnamed tributary to Pismo Creek, near Pismo Beach, 4.7 miles south of the Airport (CNDDB 2006).

Habitats in the Study Area and Within One Mile

The survey area included roughly 0.7 miles of heavily vegetated stream channel in EFSLO Creek that is surrounded to the south and east by agricultural lands and to the north by the defunct Tank Farm property that largely supports annual grasslands and seasonal aquatic habitat dominated by arroyo willows. The creek can be generally classified as palustrine emergent wetlands and freshwater marsh with an arroyo shrub and tree component that dominates stream banks and continues into the stream channel. Roughly a third of the creek banks and stream channel lack woody vegetation and are generally open. These areas support an even mix of bare sand and gravel, and areas that support herbaceous vegetation such as California blackberry (*Rubus ursinus*), black mustard (*Brassica nigra*), poison hemlock (*Conium maculatum*), and coyote bush (*Baccharis pilularis*)(Figure I-3).

The surrounding upland areas located north of the creek includes the historic creek floodplain that presently supports annual grasslands and seasonal wetlands (Figure I-4). Uplands located south of the creek are in active agricultural production were recently plowed at the time of the habitat assessment.

Surveys within SFSLO Creek identified more than 20 large pools that ranged in depth from 20 inches to greater than 5 feet. Pool size varied considerably with the average size ranging from 6 to 8 feet wide, 10 to 16 feet long, and roughly 24 to 30 inches deep. The largest pool measured at 15 feet by 35 feet, and 28 inches deep, while the deepest pool was 5 feet deep, and measured 8 feet wide by greater than 50 feet in length. Most of these pools provide potential summer habitat for ranid frogs, and greater than half could feasibly support ranid breeding. Upon review of recent surveys, it appears that bullfrogs (*Rana catesbeiana*) are abundant in this portion of the creek (Hunt and Associates 2003; Essex 1998).

SFSLO Creek, Acacia Creek, and Orcutt Creek appear to have perennial flows that are capable of supporting both bullfrog and California red-legged frog larval development.

The upper third of the creek survey area was largely unvegetated at the waterline, and appears to seasonally support emergent vegetation in that area. The arroyo willow vegetation component in

this area is relatively dense on the mid- to upper-banks and showed recent evidence of high volume water flows reaching 15 vertical feet above the stream thalweg. The stream bottom substrate generally consisted of fine gravel and sand and was scoured by recent high flow events. Stream banks were terraced and supported native loamy soils with extensive sand deposition on upper banks. The mid-portion and lower third of the creek were moderately to densely vegetated at the water line, with instream emergent vegetation such as cattails (*Typha* sp.) and willows creating natural sediment dams, and consequently, large pools (Figure I-5). Such areas, with dense emergent vegetation and high quality aquatic cover, were frequented by basking southwestern pond turtles (*Clemmys marmorata pallida*).

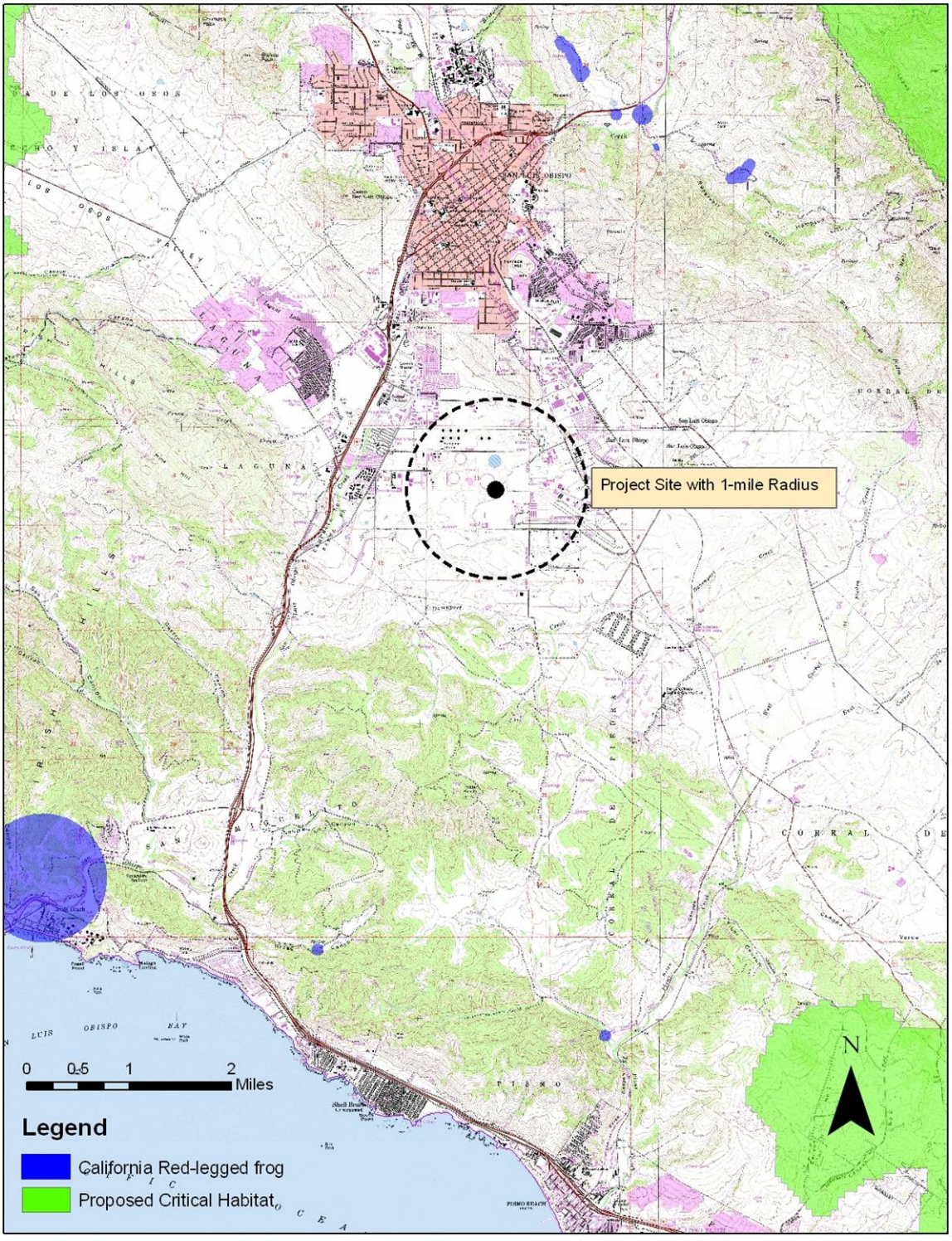
The two tributary drainages had similar conditions to the middle portion of EFSLO Creek, with generally dense emergent vegetation and moderate growth of arroyo willow (Figure I-6). Each drainage had large standing pools, extensive vegetative and aquatic cover, and year-round water. They are both considered to provide moderate to good quality breeding habitat for ranid frogs.

No ranid frogs or other amphibian species were observed or heard during the survey, though survey conditions were generally good. Five southwestern pond turtles were observed during the habitat assessment, generally associated with moderate sized pools in the central portion of the survey area.

Discussion

The project area is located in an area that was historically occupied by California red-legged frog and continues to provide potential high-quality habitat for this species. However, as documented by earlier studies (e.g., Hunt and Associates, 2003; Essex Environmental 1998) the ecological niche once locally occupied by this species now appears to be filled by bullfrogs. There are no recent database or other records that indicate an overlooked population of California red-legged frogs exists near the San Luis Obispo County Regional Airport; hence, conditions appear to be similar to those described by previous researchers. The closest documented extant California red-legged frog populations that could potentially reach the site are located 3.8 miles north and east of the site. However, if one considers that animals must traverse down San Luis Obispo Creek and back up the East Fork of San Luis Obispo Creek to reach the study area, the distance is greater than 5 miles. The study area is not directly accessible to extant frog populations due to urban development.

It can be concluded from this habitat assessment that the project area provides ranid frog breeding habitat and that bullfrogs are the dominant ranid species within available habitat. There is not recent information to suggest that California red-legged frogs may occur closer to the Airport than documented by previous researchers.



San Luis Obispo County Regional Airport / 203092 ■

Source: CNDDB, 2006

Figure I-2

California Red-legged Frog Distribution in the Project Area, with the Nearest Populations Documents 3.8 Miles Northeast of the Study Area, San Luis Obispo, California

San Luis Obispo County Regional Airport / 203092 ■

Source: ESA, 2006

Figure I-3

Representative Photos of the East Fork of San Luis Obispo Creek Upstream (top photo) and Downstream (bottom photo) of Santa Fe Road, San Luis Obispo, California

San Luis Obispo County Regional Airport / 203092 ■

Source: ESA, 2006

Figure I-4

Representative Photos of Ephemeral Aquatic Habitat and Shallow Ponds on the Unocal/Chevron Property, North of the East Fork of San Luis Obispo Creek, San Luis Obispo, California

San Luis Obispo County Regional Airport / 203092 ■

Source: ESA, 2006

Figure I-5

Representative Photos of High Quality Pools with the Vegetative and Aquatic Cover and Backwater Habitat in the East Fork of San Luis Obispo Creek, San Luis Obispo, California

San Luis Obispo County Regional Airport / 203092 ■

Source: ESA, 2006

Figure I-6

Representative Photos of Densely Vegetated Orcutt Creek (top) and Relatively Open Acacia Creek Immediately Upstream from their Confluence with the East Fork of San Luis Obispo Creek, San Luis Obispo, California

References

California Natural Diversity Database, Rarefind 3. 2005. California Department of Fish and Game, Sacramento, California, updated September 2005.

Essex Environmental. 1998. California Red-legged Frog Field Surveys for the San Luis Obispo County Airport Master Plan. Prepared for Environmental Science Associates, October 19, 1998.

Hunt and Associates. 2003. Letter Report to David Wolff, Rincon Consultants, Inc. Habitat Assessment of Unocal-Tank Farm Road Site for California Tiger Salamander (Ambystoma californiense) and California Red-legged Frog (Rana aurora draytonii), City of San Luis Obispo, San Luis Obispo County. Dated July 15, 2003.

U.S. Fish and Wildlife Service. 1997. Federal Listing for the California Red-legged Frog as Threatened. Federal Register Volume 61, Number 101. May 27.

U. S. Fish and Wildlife Service, 2005, Revised Guidance on Site Assessment and Field Surveys for California Red-legged Frogs. Sacramento, California, August, 2005.

Document Preparation

This document was prepared by:

Brian Pittman
Certified Wildlife Biologist
ESA | Biological Resources
1425 N. McDowell Blvd, Suite 105
Petaluma, CA 94054
707.795-0900 main
707.795-0915 direct
707.795-0902 fax
bpittman@esassoc.com

ATTACHMENT A
Data Sheets and Field Notes

Appendix D.
California Red-legged Frog Habitat Site Assessment Data Sheet

Site Assessment reviewed by _____ _____ _____
(FWS Field Office) (date) (biologist)

Date of Site Assessment: 02/17/2006
(mm/dd/yyyy)

Site Assessment Biologists: Pittman Brian _____
(Last name) (first name) (Last name) (first name)

_____ _____
(Last name) (first name) (Last name) (first name)

Site Location: CA, San Luis Obispo, East Fork SLO Creek, ZIO S 713681 E 3902714 N
(County, General location name, UTM Coordinates or Lat./Long. or T-R-S).

****ATTACH A MAP** (include habitat types, important features, and species locations)****

Proposed project name: San Luis Obispo Municipal Airport Master Plan
Brief description of proposed action:
Runway extention

1) Is this site within the current or historic range of the CRF (circle one)? (YES) NO

2) Are there known records of CRF within 1.6 km (1 mi) of the site (circle one)? YES (NO)
If yes, attach a list of all known CRF records with a map showing all locations.

GENERAL AQUATIC HABITAT CHARACTERIZATION

(if multiple ponds or streams are within the proposed action area, fill out one data sheet for each)

POND: N/A
Size: _____ Maximum depth: _____

Vegetation: emergent, overhanging, dominant species: _____
_____
_____

Substrate: _____
_____

Perennial or Ephemeral *(circle one)*. If ephemeral, date it goes dry: _____

Appendix D.
California Red-legged Frog Habitat Site Assessment Data Sheet

STREAM:

Bank full width: 12 to 14 feet
Depth at bank full: 24" to 60"
Stream gradient: Low

Are there pools (circle one)? (YES) NO

If yes,

Size of stream pools: Avg.: 6'-8' wide by 15'-20' in length.
Maximum depth of stream pools: 60 inches

Characterize non-pool habitat: run, riffle, glide, other: ~30 % glides, 20% riffles, 20% runs

Vegetation: emergent, overhanging, dominant species: Overhanging species include Arroyo willow, California blackberry; black mustard, and poison hemlock in uplands. Canopy species: willow and bluegum.

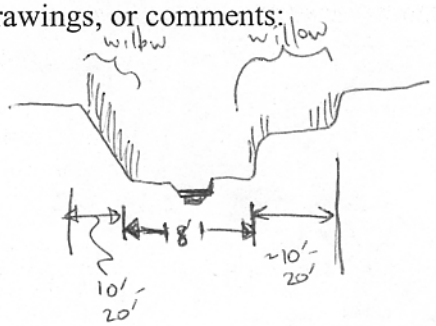
Substrate: Sand, silty gravel and small cobble.

Bank description: Banks are terraced with Arroyo willow trees + shrubs covering roughly 50-60 % of area; other 30% vegetated with annual herbs, and remaining portions are bare sand.

Perennial or Ephemeral *(circle one)*. If ephemeral, date it goes dry: _____

Other aquatic habitat characteristics, species observations, drawings, or comments:

Stream provides potential rainid breeding habitat. Bullfrogs noted in previous surveys but not noted during current survey. Five Southwestern pond turtles seen in creek.



Necessary Attachments:

1. All field notes and other supporting documents
2. Site photographs
3. Maps with important habitat features and species location

Pg 1

Brian Pittman

February 17, 2006

CA, San Luis Obispo Co, San Luis Obispo, Tributary to East Fork of San Luis Creek located just north of SLO Airport. California red-legged frog H.A.

10[00]

Weather: overcast, ~45° F, wind 5 mph.

This East Fork Tributary is located on County property, roughly 900 ft northwest of the airport. It is bordered to the south by plowed agricultural fields (active) and to the north by Chevron/Unocal land that was previously managed as a tank farm. The creek was surveyed between May and September 2003 by Rincon Consultants, with negative results for CRLF. That assessment also included portions of the Chevron property, which is no longer in the project description.

Pg 2

The creek is densely vegetated with willows (*Salix* sp) with *Conium* and *Baccharis pil.* on the upper banks. Upland areas consist of fertile loam soils — dominant weedy species in non-plowed areas are *Erodium* sp, *Brassica nigra*, an unidentified thistle and several grasses (also unid due to seasonality).

10[25] E.F. SLO Creek Above Santa Fe Road

Starting at the upstream-most survey extent on E.F. SLO Creek just upstream of Santa Fe Road, the creek is deeply incised and experiences very high flashy flows. Flood waters have deposited debris on the bridge at Santa Fe Road, fully 15 feet above the thalweg. The stream is deeply incised and lined with riprap (concrete; 15') and native vegetation.

Bank full depth 15 feet at high flows and appears to average 2-3 feet with moderate flows.

Pg 3

B. Pittman

February 17, 2006

CA, SLO Co, SLO, SLO Creek, East fork (cont)

1055

Banks and stream bottom substrate consist of Sandy loam w/ embedded cobble, and sandy gravel, respectively.

Two fish species observed – the smaller w/ punctuated, stickleback like movement, the other possibly steelhead (?) or a large minnow.

Asphalt and concrete bank stabilization and drop structures have largely failed into the creek upstream of Santa Fe Road.

Upstream of Santa Fe Rd – pools frequent and defined by concrete stabilization.
Pools = ~30%; Riffles = ~30%
Runs = ~5%; Glides between pools 35%
Avg width 8'; avg pool depth 20"

Pg 4

1050

Ef. SLO Creek, 240' Downstream from Santa Fe Road.

The creek is generally open (50% open canopy) in this area. Stream flows are ~1 cfs. Stream bottom substrate consists of fine sand and 2"–3" cobble. Most of habitat is riffles and runs, but several moderate pools are present at intervals of 50' to 75' in the creek. Predominant vegetation on banks is willow trees, Eucalyptus trees, Herbs on banks are crabgrass, some clover, & Bristly ox tongue.
No emergent species or overhanging vegetation.

Pools: 20' x 6', 20" deep.
35' x 15', 28" deep.

Crayfish observed in largest pools.
~~Exotic~~ clams? Fairly ~~s~~ed.

pg 5

B Pittman

February 17, 2006

CA, SLO Co., SLO, SLO Creek, East Fork (cont.)

11½

540 ft downstream from Santa Fe Rd.

This area has the first evidence of emergent vegetation which includes several willows that are in the stream-bed and a stand of narrow-leaved cattails.

Pool / riffle / glide structure is similar to upstream, but instream vegetative and covative cover are better in the area compared with upstream segments. Bank vegetation now includes mugwort and blackberry, in addition to species seen upstream.

Extensive crayfish excavation in banks. Also, floodwaters still reach +15 feet above the thalweg.

pg 6

- 0.11 miles downstream from Santa Fe Road.

* Chevron Property

climbed the northern creek levee to observe wetlands on the Chevron site. This feature is a historic oxbow that has long since been separated from the creek. This feature is dry, though shows evidence of recent ponding (dried algae). Pond has improper hydrology to support rana breading.

thuja regilla (= Pseudacris) heard throughout wetlands.

11¼ SLO Creek - 0.11 miles d/s from bridge

An unidentified turtle dropped into a well-covered pool. Likely S/W Pond turtle, though no identification made.

Pg 7

B. Pittman

February 17, 2006

SLO Creek - East Fork
0.14 miles d/s of Santa Fe Road bridge

11[5] Creek narrows into an 8'-wide 5' deep pool that runs approximately 50' in length. Willows and blackberry hang over pool. This area provides excellent ranid frog breeding & summer habitat.

UTM Z10S 0713681E 3902714N
NAD 83

- Another 100' downstream creek opens with relatively fewer willows and set back banks. Logs in creek provide turtle basking -- one s/w pond turtle (♂) observed on log, flushed to water on approach.

The wider channel supports some backwater areas that provide good tadpole rearing habitat.

Pg 8

Aquatic algae covers the surface of the few small backwater areas.

12[15] Excellent breeding habitat for ranid frogs, at 10S 713626 3902656
Cattails fill the 12' wide stream channel and provide frog basking and breeding habitat with superb cover.
Hyla regilla adults present (aural).
Substrate is silty gravel, overlain by algae.

Upland grasses have roots overhanging into pools for good aquatic cover

Chevron oxbow at 10S 713590E
3902618N

Viewed from atop the creek levee, this old oxbow pond measures about 15' by 40', with depth estimated at greater than 24".

Pg 9

B Pittman

February 17, 2006.

CA, SLO Co., SLO, SLO Creek East Fork

12:20 Upon closer inspection, water depth is 12" or less and rapid breeding is unlikely here. Potential for Hyla breeding. No fish. Pool is surrounded by Eleocharis with some cocklebur. Uplands are grazed by cattle and support low growing non-native herbs.

12:30 SLO Creek, East fork.
downstream from 310 S 713576 E
3902581 N
Creek is relatively broad (12'-15' wide) and lower gradient at this location. The water surface is covered with willow catkins and pollen - allowing poor visibility into the water column. Overhanging veg: willows 10%. emergent veg: willows 15%. Good breeding + summer habitat.

Pg 10

The creek continues in this manner further downstream, as a deep, slow moving, broad channel. Downstream access is hampered by the deep water, so observations from here downstream will be from the upper terrace.

Another 250' d/s, the creek is again accessible. The channel is terraced, with the upper terrace providing good to the breeding habitat - open sandy areas. The stream bottom is abt. 13-14' wide roughly 8 to 36 inches deep, with pools interspersed with runs, glides and a few riffles. Vegetative cover is ~80% with 40% cattail cover and 40% willow - sometimes multicanopy over cattails. Flooding occurs right into cattails and provides good cover.

Some Eleocharis on lower banks at the waterline.

Pg 11

B. Pittman

17 November 2006

CA, SLO Co, SLO, SLO Creek East Fork.

1305 At its furthest downstream extent on County land, the creek is nearly a closed canopy of willows. The channel bottom measures ~10-12' wide at bankfull, and the full channel height to top of bank is about 20'. Hyla adults are present in this lower portion of the creek.

SLO Creek survey completion: 1320 PST

APPENDIX J

Agency Correspondence

NATIONAL MARINE FISHERIES SERVICE

This page intentionally left blank.

U.S Department
of Transportation
Federal Aviation Administration

San Francisco Airports District Office
831 Mitten Road, Room 210
Burlingame, California 94010

13 February 2006

Anthony Spina
National Marine Fisheries Service
501 West Ocean Boulevard - Suite 4200
Long Beach, California 90802-4213

Request for Concurrence on Determination of "Not Likely to Adversely Affect" South-Central California Coast Steelhead; San Luis Obispo County Regional Airport Master Plan

Dear Mr. Spina:

The County of San Luis Obispo is proposing improvements to San Luis Obispo County Regional Airport (SBP). The primary improvement contemplated is the extension of Runway 11/29 by 800 feet. The runway extension would occur at the Runway 11 end because of terrain issues at the Runway 29 end. The runway extension is intended to accommodate the forecasted demand at SBP, which includes the demand for regional jet service.

The East Fork of San Luis Obispo Creek, which drains into San Luis Obispo Creek about three miles downstream, borders the northwestern edge of the Airport. San Luis Obispo Creek is known to support a population of the federal threatened south-central California coast (S-CCC) Evolutionarily Significant Unit (ESU) of steelhead (*Oncorhynchus mykiss*). Critical habitat for this ESU was recently designated within the mainstem of San Luis Obispo Creek as well as a number of tributary streams. However, S-CCC steelhead are not known to occur in the East Fork of San Luis Obispo Creek and critical habitat has not been designated in this subbasin.

As such, potential adverse effects on S-CCC steelhead and designated critical habitat resulting from the proposed action would be limited to potential downstream water quality-related impacts to existing steelhead habitat in the San Luis Obispo Creek, approximately three miles downstream of SBP.

Proposed Action

The following description of the proposed action focuses on project components that may have adverse effects on the water quality of the East Fork of San Luis Obispo Creek, and thus on the mainstem of San Luis Obispo Creek. A full list of the project components included in the proposed action is included as Attachment A. The location of these project components are depicted in Attachment B.

Realign Santa Fe Road (N-2)

Santa Fe Road needs to be realigned to accommodate the extension of Runway 11. As a result, the intersection with Buckley Road must be shifted to the northwest. The realigned road will be set back a minimum of 100 feet from the top of the bank along the East Fork of San Luis Obispo Creek.

Remove and Replace Westside Detention Basin (S-6)

Under the Proposed Action, increases in stormwater runoff associated with previously approved projects and Master Plan project components would be mitigated with a detention basin located northwest of the runway extension in the floodplain of the East Fork of San Luis Obispo Creek. The detention basin would be designed to reduce post-project 100-year peak flows to Baseline Condition levels. Although final detention basin design has not yet been completed, detention could potentially provide certain water quality benefits. Criteria for detention basin design are provided in the San Luis Obispo Waterway Management Plan.

Construct New Swale Parallel to East Fork for Floodwater Containment (S-7)

The relocation of Santa Fe Road and the placement of fill for the development of the extension of Runway 11 would encroach in the 100-year floodplain of the East Fork of San Luis Obispo Creek. A trapezoidal swale would be constructed between the proposed Santa Fe Road alignment and the East Fork of San Luis Obispo Creek to compensate for the conveyance lost due to encroachment in the floodplain. The swale would drain to the existing floodplain associated with the East Fork of San Luis Obispo Creek west of the Airport. The swale would be approximately 3,280 feet long and have a bottom width of 50 feet and a varying depth of approximately 3 to 8 feet. Approximately 3.8 acres would be subject to excavation and earthwork for the construction of the swale.

Other Project Components

In addition to the specific project components described above, the construction of other components (e.g., extension of Runway 11) will require extensive grading and earthwork. Furthermore, implementation of the project components would result in an increase in impervious surfaces and thus an increase in the likelihood of nonpoint source pollution to surface waters.

Potential Effects and Minimization Measures

Implementation of the Master Plan project components would result in extensive grading and earthwork on 32.5 acres, or 13.7 more acres than what would occur under the No Action Alternative.

Although the project components would be constructed in compliance with NPDES General Construction Activities permit requirements, grading and earthwork activities associated with the extension of Runway 11, the realignment of Santa Fe Road, and the excavation of the new swale could have potentially significant impacts on water quality in the East Fork of San Luis Obispo Creek. The preparation and implementation of a Stormwater Pollution Prevention Plan (SWPPP) for construction activities and a Planting Plan for post-construction activities would mitigate this impact to a less-than-significant level. The specific aspects of the SWPPP and the Planting Plan are outlined below:

SWPPP

Pursuant to NPDES requirements, the applicant shall develop a SWPPP for General Construction Activities to protect water quality during and after construction. The SWPPP shall be a comprehensive document that addresses all components of the Proposed Action.

The Contractor shall be responsible for maintenance, inspection, and repair to all erosion and sediment control measures throughout the construction period, and should ensure that all other protective devices are maintained and repaired in good and effective condition. At a minimum, the SWPPP shall include the following measures for the construction period:

(1) Grading and earthwork shall be prohibited during the wet season (October 15 through April 15) and such work shall be stopped before pending storm events.

(2) Erosion control/soil stabilization techniques such as straw mulching, erosion control matting, and hydro-seeding, shall be utilized in accordance with erosion control and stormwater quality recommendations contained in the San Luis Obispo Waterway Management Plan. Silt fences shall be installed downslope of all graded slopes. Hay bales shall be installed in the flow path of graded areas receiving concentrated flows and around storm drain inlets;

(3) No construction equipment shall be left overnight in the creek channel or swale;

(4) All refueling and/or maintenance of heavy equipment shall take place at a minimum of 100-feet away from the top of banks of the creek channel and swale;

(5) In particularly sensitive areas or areas lacking suitable access, earthwork shall be completed using hand tools to avoid significant and unnecessary footprints caused by heavy machinery in the creek channel;

(6) Cofferdams, water pumps, and/or diversion channels shall be used, as necessary, to prevent the discharge of soil and sediment to downstream waters during construction;

(7) BMPs for preventing the discharge of other construction-related NPDES pollutants beside sediment (i.e. concrete, tar, asphalt, etc) to downstream waters; and

(8) All drainage facilities shall be inspected regularly for accumulated sediment, and these drainage structures shall be cleared of debris and sediment.

Planting Plan

In accordance with the San Luis Obispo Waterway Management Plan, the project applicant shall prepare a Planting Plan for affected areas within the banks of the East Fork of San Luis Obispo Creek and excavation and earthwork associated with the construction of the swale. The Planting Plan shall include erosion protection and bank stabilization techniques to ensure the Proposed Action does not significantly increase erosion in these channels.

Bank protection may be accomplished by vegetative and/or biotechnical methods (i.e. willow wattles, willow/brush mattresses, pole planting, coconut fiber erosion control blankets). Hard structures such as rip rap, gabion baskets, and sacrete may be used, as necessary. The Planting Plan shall include replanting with appropriate native riparian plant species. Appropriate design for bank stabilization shall be based on a geomorphic and hydraulic analysis of the trapezoidal swale. Maintenance requirements will be especially important during the initial establishment of vegetation. The Airport's SWPPP for General Industrial Activities shall be updated to include stream maintenance requirements associated with the Planting Plan. The Planting Plan shall be prepared and approved by the San Luis Obispo County Department of Public Works prior to project approval.

The Master Plan project components also would result in an additional 18.9 acres of impervious surfaces, or 1.3 acres more than under the No Action Alternative. When compared to the No Action Alternative, the construction and operation of Master Plan project components would provide increased opportunities for nonpoint source pollutants and litter to enter the East Fork of San Luis Obispo Creek and the Unnamed

Tributary to the East Fork of San Luis Obispo Creek. Updates to, and continued implementation of, the SWPPP for General Industrial Activities would reduce the potential for water quality impacts to receiving surface waters. The 100-foot setback from the top of bank of the East Fork of San Luis Obispo Creek would help to protect water quality and the riparian corridor. Additionally, use of the detention basin for water quality treatment, as discussed below, would help maintain the potential for water quality impacts to receiving surface waters at less than significant levels.

Detention Basin Design

The detention basin shall be designed in accordance with all detention basin design requirements contained in the San Luis Obispo Waterway Management Plan. Furthermore, the detention basin shall be designed to maximize water quality treatment potential without compromising the stormwater storage characteristics of the basin. At a minimum, the basin outlet shall be protected with a trash rack to trap the larger gross pollutants in site runoff and minimize the amount of litter entering the East Fork of San Luis Obispo Creek. The trash rack can consist of a grate or grill and must be large enough so that partial plugging will not restrict outflow.

Conclusion and Determination

S-CCC steelhead and designated critical habitat for this ESU do not occur in the vicinity of SBP and the proposed action. However, San Luis Obispo Creek, located approximately three miles downstream of SBP, supports steelhead and has been designated as critical habitat. As such, potential construction-related impacts and increases in nonpoint source pollutants to surface waters containing threatened steelhead and designated critical habitat have been identified and will be mitigated accordingly.

Request for Concurrence on Determination of "Not Likely to Adversely Affect" South-Central California Coast Steelhead; San Luis Obispo County Regional Airport Master Plan

Therefore, The FAA believes that the proposed action may affect, but is not likely to adversely affect, S-CCC steelhead and designated critical habitat. We are requesting your concurrence on this determination as soon as possible. If you have any questions, please contact Barry Franklin at 650.876.2778 ext. 614.

Sincerely;

Andrew M. Richards
Manager, Airports District Office

Enclosure (1): Phase I Project Components to be Implemented Under the Proposed Action
(2): Proposed Action – Phase I (2010) Project Components Figure

cc: San Luis Obispo County Department of General Services, Klaasje Nairne
Environmental Science Associates, David Full

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Southwest Region
501 West Ocean Boulevard, Suite 4200
Long Beach, California 90802- 4213

MAY 9 2006

151422SWR2006PR00155:MRM

	600
	600A
	602
	603
	610
	611
	612
	613
	614
	615
dlh	620
	621
	622
	623
	624
	625
	626
	667
	676
	677
	686

Mr. Andrew Richards
U.S. Department of Transportation
Federal Aviation Administration
San Francisco Airports District Office
831 Mitten Road, Room 210
Burlingame, California 94010

Dear Mr. Richards:

NOAA's National Marine Fisheries Service (NMFS) reviewed the Federal Aviation Administration's (FAA) letter concerning the San Luis Obispo County Regional Airport Master Plan in San Luis Obispo County, California. NMFS understands this project is being implemented to accommodate for the forecasted demands at the San Luis Obispo County Regional Airport (SBP). The primary component of this project is the extension of runway 11/29 by 800 feet. Project activities include grading and paving for the extended runway, realignment of Santa Fe Road, removal and replacement of the westside detention basin, and construction of a new swale paralellel to the East Fork San Luis Obispo Creek. NMFS further understands that several precautionary measures will be incorporated into the proposed action for the purpose of reducing the likelihood that onsite effects (e.g., water-quality alterations) will extend downstream to San Luis Obispo Creek, where threatened steelhead (*Oncorhynchus mykiss*) and critical habitat for this species are present. The FAA concluded that the proposed action is not likely to adversely affect the South Central California Distinct Population Segment for federally threatened steelhead, and requested NMFS' concurrence with this determination.

NMFS concurs with the FAA's determination. The East Fork San Luis Obispo Creek, near the project site, is not known to support steelhead and is not listed as critical habitat. Work activities will take place outside the wetted channel. Lastly, the applicant's proposed precautionary measures (e.g., confining work activities outside the wet season and periods when rainfall is not forecasted, confining sedimentation and potential pollution sources from creeks by use of straw bales and silt fencing and construction of a swale and detention basin) are expected to confine any water-quality alterations onsite.

This concludes the informal section 7 consultation for this proposed action. Consultation must be reinitiated where discretionary federal agency involvement or control over the action has been

retained (or is authorized by law) and: (1) if new information becomes available revealing effects of the action on listed species in a manner or to an extent not previously considered, (2) if project plans change, (3) if the agency action is subsequently modified in a manner that causes an effect to listed species that was not considered, or (4) if a new species or critical habitat is designated that may be affected by this action. Please call Matt McGoogan at (562) 980-4026 if you have a question concerning this letter or if you require additional information.

Sincerely,

for Rodney R. McInnis
Regional Administrator

cc: John Hindley, FEMA contractor

U.S. FISH AND WILDLIFE SERVICE

This page intentionally left blank.

U.S Department of Transportation
Federal Aviation Administration

San Francisco Airports District Office
831 Mitten Road, Room 210
Burlingame, California 94010

June 13, 2006

Steve Henry
Assistant Field Supervisor
Ventura Fish and Wildlife Office
U.S. Fish and Wildlife Service
2493 Portola Road, Suite B
Ventura, California 93003

San Luis Obispo County Regional Airport Master Plan, San Luis Obispo County, California

Dear Mr. Henry:

The Federal Aviation Administration (FAA) has determined that activities resulting from our approval and funding of the subject proposed project is likely to adversely affect the vernal pool fairy shrimp (*Branchinecta lynchi*). Therefore, pursuant to Section 7 of the Endangered Species Act of 1973, as amended, the FAA hereby requests initiation of formal consultation for the proposed project. Additionally, we have determined that the subject project may affect but is not likely to adversely affect the federally-listed California red-legged frog (*Rana aurora draytonii*) and seek your concurrence with this determination.

On June 12, 2006, you agreed that information previously provided to you on this proposed project fulfills our requirement pursuant to 50 CFR Part 402.14(c). We anticipate that formal consultation will be initiated upon your receipt of this letter. If you have any questions, please contact Mr. Barry Franklin of the FAA at (650) 876-2778 extension 614.

Kindest Regards,

Andrew M. Richards
Manager, Airports District Office

cc: Klaasje Nairne, County of San Luis Obispo
David Full, ESA
Bruce Henderson, US Army COE

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Ventura Fish and Wildlife Office
2493 Portola Road, Suite B
Ventura, California 93003

IN REPLY REFER TO:
PAS 722.3155.5547

June 22, 2006

Andrew M. Richards, Manager
San Francisco Airports District Office
Federal Aviation Administration
831 Mitten Road, Room 210
Burlingame, California 94010

Subject: Biological Opinion for the San Luis Obispo County Regional Airport Master Plan (1-8-06-F-35)

Dear Mr. Richards:

This document transmits the U.S. Fish and Wildlife Service's (Service) biological opinion based on our review of the Federal Aviation Administration's (FAA) proposed funding and approval of the San Luis Obispo County Regional Airport Master Plan and its effects on the federally threatened vernal pool fairy shrimp (*Branchinecta lynchi*) in accordance with section 7(a)(2) of the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 et seq.) (Act). Your letter requesting formal consultation, dated June 13, 2006, was received on the same date.

This biological opinion is based on the draft environmental assessment/environmental impact report for the San Luis Obispo County Regional Airport Master Plan Update (DEA/EIR), dated February 2006, the habitat assessment for vernal pool branchiopods, and our files. A complete administrative record of this consultation is on file at the Ventura Fish and Wildlife Office.

Your letter included your determination that the proposed project is not likely to adversely affect the federally threatened California red-legged frog (*Rana aurora draytonii*). We concur with your determination. Although potential high-quality habitat for the California red-legged frog exists in the East Fork of San Luis Obispo Creek adjacent to the San Luis Obispo County Regional Airport (Airport), the nearest record for the species is approximately 3.8 miles to the north. Several recent surveys have been conducted for the California red-legged frog in segments of San Luis Obispo Creek and its tributaries near the Airport, California red-legged frogs were not detected on any of these surveys. Additionally, surveys on the Airport property in 2000 failed to find California red-legged frogs on the site (Morro Group 2000 and 2001).

CONSULTATION HISTORY

On November 15, 1999, we issued FAA a biological opinion (1-8-99-F-57) for the San Luis Obispo County Airport runway 29 extension project. The consultation considered the potential

effects of the action on the California red-legged frog. Surveys in the area of the project, prior to that consultation, failed to find California red-legged frogs. However, due their documented presence several miles upstream of the project area and suitable habitat on site, FAA assumed presence of this species and initiated formal consultation. The resulting biological opinion required Service-approved biologists to survey for California red-legged frogs prior to and monitor for them during the project. As stated above, no California red-legged frogs were found during this project.

BIOLOGICAL OPINION

DESCRIPTION OF THE PROPOSED ACTION

San Luis Obispo County has prepared an Airport Master Plan for San Luis Obispo County Regional Airport (SBP). Since October 2002, limited regional jet service has been provided at SBP. The Master Plan anticipates a continued transition from turboprop aircraft to regional jet aircraft and recommends a phased improvement program through the year 2023 (Phase 1 and 2) to accommodate the increase in the use of regional jets at SBP. Phase I represents the near-term (through year 2010) Master Plan improvements subject to FAA approval for project implementation. This biological opinion will only consider those aspects of the Master Plan that are subject to the FAA's approval and funding, that is Phase 1.

The Airport is located approximately 3 miles south of the downtown area of the City of San Luis Obispo, San Luis Obispo County, California. The County of San Luis Obispo (County) operates the Airport and is the project proponent. Full details of the proposed action are contained in the environmental assessment and environmental impact report DEA/EIR. The following brief description summarizes the project description in the DEA/EIR.

The FAA is proposing to fund and approve Phase 1 of the San Luis Obispo County Regional Airport Master Plan. The purpose of the proposed project is to improve the Airport for use by regional jet aircraft. The Airport comprises approximately 340 acres of land, of which 290 acres are developed. Developed areas include an airfield with two runways (11/29 and 7/25), a passenger terminal and parking facility, general aviation hangars, and associated support facilities.

The primary project included in Phase I is the proposed extension of Runway 11 by 800 feet. Most of the other projects described in the DEA/EIR for Phase 1 are functionally related to the proposed extension of Runway 11. These are: taxiways and roads; grading the land; demolishing existing structures; constructing new facilities; and constructing a new swale for floodwater containment which would empty into the East Fork of San Luis Obispo Creek. In addition, the proposed action would require the importation of approximately 320,000 cubic yards of fill material. The County would obtain the majority of this material (approximately 240,000 cubic yards) from the Flower Mound in the northeast corner of the adjacent Chevron property. The remainder of the fill material would be obtained from other sources in the vicinity of the Airport.

The County will implement protective measures to avoid and reduce adverse effects to the vernal pool fairy shrimp and its habitat; specifically, mitigation measures 5.6-1a, 5.10-4, and 5.11-1. This includes preparing a resource management plan for the vernal pool fairy shrimp and seeking concurrence from the Service that the plan adequately protects the species.

STATUS OF THE SPECIES

The Service listed the vernal pool fairy shrimp (*Branchinecta lynchi*) as threatened on September 19, 1994 (59 *Federal Register* 48136). Critical habitat was designated on August 6, 2003 (68 *Federal Register* 46684). The recovery plan for vernal pool ecosystems of California and southern Oregon (December 15, 2005) also addresses this species. The following account summarizes information contained in those documents as supplemented by information since the publication of the final rules and availability of the recovery plan.

The vernal pool fairy shrimp is a small freshwater crustacean in the family Branchinectidae of the order *Anostraca*. Adult vernal pool fairy shrimp range in size from 10.9 to 25.0 millimeters (0.4 to 1.0 inches) and are distinguished from a similar species, the Colorado fairy shrimp (*Branchinecta coloradensis*), by the males' ridge-like outgrowth on the basal segment of the antennae, and the females' shorter, pyriform brood pouch. Vernal pool fairy shrimp, like other fairy shrimp, swim on their backs throughout their adult life cycle.

Vernal pool fairy shrimp are restricted to vernal pools and vernal pool-like depressions. Vernal pools are a type of ephemeral wetland that occurs from southern Oregon through California into northern Baja California, Mexico. Vernal pools form in regions with Mediterranean climates where shallow depressions fill with water during fall and winter rains and then dry up when the water evaporates in the spring. Downward percolation of water within pools is prevented by the presence of an impervious subsurface layer consisting of claypan, hardpan, or volcanic stratum. Seasonal inundation makes vernal pools too wet for adjacent upland plant species while rapid drying during late spring makes them unsuitable for marsh or aquatic species that require a permanent source of water. The species often occurs in pools that exhibit an unpredictable and short-lived inundation pattern.

Anostracans, including the vernal pool fairy shrimp, are non-selective filter-feeders that filter suspended solids from the water column. Detritus, bacteria, algal cells, and other items between 0.3 to 100 microns may be filtered and ingested. Only rarely does the vernal pool fairy shrimp co-occur with other fairy shrimp species, and where it does, the vernal pool fairy shrimp is never the numerically dominant species. The vernal pool fairy shrimp has been observed with the versatile fairy shrimp (*Branchinecta lindahli*) and Santa Rosa Plateau fairy shrimp (*Linderiella santarosae*) as well as the federally listed Conservancy fairy shrimp (*Branchinecta conservatio*) and longhorn fairy shrimp (*Branchinecta longiantenna*). Fairy shrimp are prey for a wide variety of wildlife, including beetles, insect larvae, frogs, salamanders, toad tadpoles, shorebirds, ducks, and even other fairy shrimp. Freshwater crustaceans, including the vernal pool fairy shrimp, have a two-stage life cycle with the majority of their life cycle spent in the cyst (egg) stage. Vernal pool fairy shrimp females produce an unknown number of cysts per clutch and over their lifetime. The cysts are either dropped to the pool bottom or remain in the brood sac

until the female dies and sinks. Fairy shrimp cysts are capable of withstanding heat, cold, and prolonged desiccation and may persist in the soil for an unknown number of years until conditions are favorable for successful hatching. The cysts hatch when the vernal pools fill with rainwater. Not all cysts are likely to hatch in a season, thus providing a mechanism for survival if the inundation period is too short in a given year. This species can mature quickly, allowing it to persist in short-lived shallow pools; however the species also persists later into the spring where pool inundation persists.

Although vernal pool fairy shrimp are more widely distributed than most other fairy shrimp species, it is generally uncommon throughout its range and rarely abundant. The species currently occurs predominantly in a variety of vernal pool and ephemerally ponded habitats in the Central Valley and Coast Range of California, with a limited number of sites in the Transverse Range and on the Santa Rosa Plateau and in Hemet, Riverside County. There is also one disjunct occurrence in Jackson County, southern Oregon. California counties where extant records occur include Alameda, Butte, Contra Costa, El Dorado, Fresno, Glenn, Kings, Los Angeles, Madera, Merced, Monterey, Napa, Placer, Riverside, Sacramento, San Benito, San Joaquin, San Luis Obispo, Santa Barbara, Shasta, Solano, Stanislaus, Tehama, Tulare, Ventura, and Yuba. Elevations at which the species is typically found range from 10 meters (33 feet) to 1,220 meters (4,003 feet), although it has been found at 1,700 meters (5,600 feet) in the Los Padres National Forest.

Within vernal pool habitat on the Central Coast of California (Monterey, San Luis Obispo, and Santa Barbara counties), vernal pool fairy shrimp are known to occupy in at least 55 basins on Fort Hunter Liggett, at least 46 basins at Camp Roberts, Soda Lake at the Carrizo Plain National Monument, several areas in the vicinity of Paso Robles, at least two sites in the Los Padres National Forest, at least 60 natural or man-made features at the Unocal-Chevron tank farm and an isolated nearby area, at least two vernal pools at the Santa Maria Airport, and in at least 12 complexes on Vandenberg Air Force Base. A number of these sites were discovered after the publication of the listing and critical habitat rules.

Maintaining the integrity of surrounding upland habitat is critical to the proper ecological functioning of vernal pool habitat. Habitat loss and fragmentation is the largest threat to the survival and recovery of vernal pool fairy shrimp and other species that are restricted to vernal pool and other ephemeral wetland habitats. Habitat loss is generally a result of urbanization, agricultural conversion, and mining although loss also occurs in the form of habitat alteration and degradation as a result of changes to natural hydrology, competition from invasive species, incompatible grazing regimes (including insufficient grazing for prolonged periods), infrastructure projects (*e.g.*, roads, water storage and conveyance, utilities), recreational activities (*e.g.*, off-highway vehicles and hiking), erosion, mosquito abatement activities, climatic and environmental change, and contamination.

ENVIRONMENTAL BASELINE

The implementing regulations for section 7(a)(2) of the Act define the "action area" as all areas to be affected directly or indirectly by the Federal action and not merely the immediate area

involved in the action (50 *Code of Federal Regulations* 402.02). For the purposes of this biological opinion, we identify the action area as follows: the Airport and adjacent land south and east of the East Fork of San Luis Obispo Creek; and the area around and leading to the Flower Mound on Chevron property adjacent to the Airport, on the northwest side of the East Fork of San Luis Obispo Creek.

The general area around the City of San Luis Obispo is outside the known range of the species when it was listed and critical habitat designated. Therefore, the Airport is not within any designated critical habitat boundary. Furthermore, the Airport specifically, and the general area of the City of San Luis Obispo are not mentioned in the recovery plan as an area where vernal pool fairy shrimp occur nor as an area necessary for the recovery of the species.

Habitat on the Chevron property, adjacent to the Airport, include pools known to be inhabited by the vernal pool fairy shrimp. Recovery permittee David Wolff (2006) recorded the vernal pool fairy shrimp in 60 of the 86 pools that he sampled from 2003 to 2005. Inhabited pools ranged from 0.003 to 3.97 acres, and nine of these were greater than 1 acre. Although the Chevron property was previously a tank farm and contaminated with petroleum fuel, the vernal pool fairy shrimp is especially prevalent here. Mr. Wolff's vernal pool fairy shrimp report for the Chevron property shows no pools at the Flower Mound and no pools inhabited by the vernal pool fairy shrimp in the northeast corner of the property.

The County's consultant conducted a habitat assessment for the vernal pool fairy shrimp at the Airport and adjacent lands in April 2006. In the habitat assessment, the County's consultant concluded that the species is likely absent on the Airport property based on the absence of suitable habitat in the area. However, the habitat assessment provided photo-documentation of suitable habitat. Based on the occurrence of vernal pool fairy shrimp on the adjacent Chevron property and another nearby property that has poorer quality habitat than the Airport, yet is occupied by vernal pool fair shrimp, we could not concur with the conclusion in the County's habitat assessment.

We identified several potentially occupied habitats from the vernal pool fairy shrimp habitat assessment, including freshwater marsh, grassland, agricultural land, and ruderal habitat. We believe that the freshwater marsh in the flood detention basin near the end of Runway 11 and the freshwater marsh at the 4-H Ranch facilities may be occupied by the vernal pool fairy shrimp. In addition, the grassland and agricultural land near the end of Runway 11 and the ruderal habitat and upland grassland at the 4-H Ranch facilities appear to pond with water and may also be occupied by the species.

EFFECTS OF THE ACTION

The potential for vehicles to injure or kill free-swimming vernal pool fairy shrimp is limited by the relatively short time-span in which this life stage occurs; however, cysts may be crushed or otherwise rendered unviable (from moving them to unsuitable habitat) by vehicle operations at any time of year. Vehicle operations on or off of established dirt roads under dry conditions may crush vernal pool fairy shrimp cysts in pool basins or displace cysts to unfavorable locations that preclude their survival. Vehicle operations on or off of established roads under wet conditions may lead to the direct mortality of free-swimming juvenile or adult vernal pool fairy shrimp in pools by crushing them or displacing them to locations where they cannot survive.

Dust that is generated by vehicle movement and deposited into occupied vernal pool fairy shrimp pools may degrade pools and potentially bury vernal pool fairy shrimp cysts within the action area. Vehicle operations, grading, and earth-moving activities in and around vernal pools occupied by vernal pool fairy shrimp could alter local topography by increasing soil compaction, erosion, or altering normal hydrology, thus changing water flow patterns necessary to support vernal pool fairy shrimp.

Vernal pool fairy shrimp cysts in occupied pools could be crushed or buried by grading and fill activities associated with the runway extension and associated structures. The ground disturbance and re-contouring of the airfield, where these pools occur, would permanently eliminate vernal pool fairy shrimp habitat and likely bury the cysts to a depth at which they could not complete their life cycle.

To address the loss of vernal pool fairy shrimp habitat, the County is proposing to create or enhance vernal pool fairy shrimp habitat pursuant to mitigation measure 5.10-4 and, to a lesser degree, mitigation measure 5.11-1. The County will submit a resource management plan to the Service and request our concurrence that measures contained in the resource management plan are adequate to protect vernal pool fairy shrimp. The DEA/EIR describes the contents of the plan.

CUMULATIVE EFFECTS

Cumulative effects include the effects of future State, tribal, local or private actions that are reasonably certain to occur in the action area considered in this biological opinion. Future Federal actions that are unrelated to the proposed action are not considered in this section because they require separate consultation pursuant to section 7 of the Act.

The City of San Luis Obispo is proposing to install a sewer line (18-inch pipe) along Tank Farm Road; a public road that divides the Chevron property into north and south sections. In the vicinity of the Airport, most of the proposed installation would occur on the Chevron property and adjacent to Tank Farm Road. The city is proposing to use the information in Mr. Wolff's report in order to avoid established pools inhabited by the vernal pool fairy shrimp.

Phase 2 of the SBP Airport Master Plan is planned to occur within the action area and include additional areas of the Chevron property. At this time we do not know what, if any, effects Phase 2 would have on the vernal pool fairy shrimp or other listed species. We are not aware of any other non-federal actions that are reasonably certain to occur in the action area.

CONCLUSION

After reviewing the current status of the vernal pool fairy shrimp, the environmental baseline for the action area, the effects of the project, and the cumulative effects, it is the Service's biological opinion that the FAA's proposed funding and approval of the project is not likely to jeopardize the continued existence of the vernal pool fairy shrimp.

We have reached this conclusion because:

1. The proposed project would affect only a small portion of the range of the vernal pool fairy shrimp.

2. The action area is not within designated critical habitat for the species nor is the action area identified in the recovery plan.

3. The County will prepare a resource management plan for this species and seek concurrence from the Service that the plan provides adequate protection for vernal pool fairy shrimp.

4. Opportunities would remain for the vernal pool fairy shrimp in the vicinity of the action area to forage, shelter, and breed throughout the duration of the project and after the project is completed.

INCIDENTAL TAKE STATEMENT

Section 9 and Federal regulation pursuant to section 4(d) of the Act prohibit the take of endangered and threatened species, respectively, without special exemption. The Act defines take as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or to attempt to engage in any such conduct. The Service defines harm to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering. The Service defines harass as intentional or negligent actions that create the likelihood of injury to listed species by annoying it to such an extent as to significantly disrupt normal behavioral patterns which include, but are not limited to, breeding, feeding or sheltering. The Service defines incidental take as take that is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity. Under the terms of section 7(b)(4) and section 7(o)(2), taking that is incidental to and not intended as part of the agency action is not prohibited taking under the Act provided that such taking is in compliance with the terms and conditions of this incidental take statement.

The measures described below are non-discretionary and must be undertaken by the FAA so that they become binding conditions of its funding and approval for the exemption in section 7(o)(2) to apply. The FAA has a continuing duty to regulate the activity covered by this incidental take statement. If the FAA fails to require the County to adhere to the terms and conditions of the incidental take statement through enforceable terms that are added to the grant and approval documents, the protective coverage of section 7(o)(2) may lapse. To monitor the impact of incidental take, the FAA or the County must report the progress of the action and its impact on the species to the Service as specified in the incidental take statement [50 *Code of Federal Regulations* 402.14(i)(3)].

We anticipate the following level of take may result from the proposed activities.

> An unquantifiable number of vernal pool fairy shrimp cysts, adults and juveniles within the action area may be crushed, buried or displaced in any occupied habitat as a result of proposed project activities. Because of their small size, finding dead or injured vernal pool fairy shrimp is unlikely.

This incidental take statement does not exempt any activity from the prohibitions against take contained in section 9 of the Act that is not incidental to the action as described in this biological opinion. The vernal pool fairy shrimp may be taken only within the defined boundaries of the action area as described in the Environmental Baseline section of this biological opinion

REASONABLE AND PRUDENT MEASURES

The Service believes the following reasonable and prudent measures are necessary and appropriate to minimize the take of the vernal pool fairy shrimp.

1. The County must document occurrences of vernal pool fairy shrimp on the Airport property in order to avoid and minimize take and develop the resource management plan.

2. The County must receive the Service's written approval of the resource management plan for the vernal pool fairy shrimp on the Airport property

TERMS AND CONDITIONS

To be exempt from the prohibitions of section 9 of the Act, the FAA must ensure that the County complies with the following terms and conditions, which implement the reasonable and prudent measures described above. These terms and conditions are non-discretionary.

1. The following terms and conditions implement the reasonable and prudent measure 1.

   a. The County must conduct vernal pool fairy shrimp surveys according to our 1996 guidelines beginning this dry season.

b. Only qualified personnel authorized under the auspices of this biological opinion can survey for vernal pool fairy shrimp and implement or oversee the Service-approved resource management plan (which may include the collection and relocation of vernal pool fairy shrimp cysts). The FAA or County must request our approval of any biologist it wishes to employ to conduct these. The request must be made to the Service at least 15 days prior to any such activities being conducted.

c. The County must avoid occupied vernal pool fairy shrimp habitat to the maximum extent possible. This includes locating all staging areas at least 100 yards away from any occupied vernal pool fairy shrimp habitat.

d. If two or more occupied vernal pool fairy shrimp pools are degraded or filled during project removal activities, regardless of cause, the FAA or County must contact our office immediately so we can review the project implementation and causes of take to determine if additional protective measures are needed. Project activities may continue during this review period, provided that all the terms and conditions of this biological opinion have been and continue to be implemented.

2. The following term and condition implements the reasonable and prudent measure 2.

a. The County must obtain the Service's approval of the implementation plans for mitigation measures 5.61a, 5.10-4a, 5.10-4b, and 5.11-1 prior to commencing construction for the project. These include: the storm water pollution prevention plan; the wetland mitigation and monitoring plan; and the resource management plan for vernal pool fairy shrimp. These plans must include the entire project area.

REPORTING REQUIREMENTS

The FAA or the County must provide us with a written report regarding the findings of vernal pool fairy shrimp surveys as soon as practical and prior to developing the resource management plan. Within 90 days of completion of Phase 1 of the project, the FAA or the County must provide us with a written report describing the impacts of the proposed project to the vernal pool fairy shrimp. The report must document the effects of the proposed project to the vernal pool fairy shrimp on the property, including the number of established pools inhabited by the species that were impacted. The report should also contain a discussion of the problems encountered in implementing the terms and conditions and other protective measures, recommendations for modifying the terms and conditions to enhance the conservation of the vernal pool fairy shrimp, and any other pertinent information. The report will assist us in evaluating future measures for the protection of the vernal pool fairy shrimp during construction projects while enhancing the County's abilities to undertake its activities.

CONSERVATION RECOMMENDATIONS

Section 7(a)(1) of the Act directs Federal agencies to use their authorities to further the purposes of the Act by carrying out conservation programs for the benefit of endangered and threatened species. Conservation recommendations are discretionary agency activities to minimize or avoid adverse effects of a proposed action on listed species or critical habitat, to help implement recovery plans, or to develop information.

> We recommend that the FAA and the County work with Chevron to rehabilitate and improve the Chevron property for the benefit of the vernal pool fairy shrimp.

The Service requests notification of the implementation of any conservation recommendation so we may be kept informed of actions minimizing or avoiding adverse effects or benefiting listed species or their habitats.

REINITIATION NOTICE

This concludes formal consultation on your proposed funding and approval of the San Luis Obispo Regional Airport Master Plan. As provided in 50 *Code of Federal Regulations* 402.16, reinitiation of formal consultation is required where discretionary Federal agency involvement or control over the action has been retained (or is authorized by law) and if: (1) the amount or extent of incidental take is exceeded; (2) new information reveals effects of the agency action that may affect listed species or critical habitat in a manner or to an extent not considered in this opinion; (3) the agency action is subsequently modified in a manner that causes an effect to the listed species or critical habitat not considered in this opinion; or (4) a new species is listed or critical habitat designated that may be affected by the action. In instances where the amount or extent of incidental take is exceeded, any operations causing such take must cease pending reinitiation.

If you have any questions, please contact Chris Kofron of my staff at (805) 644-1766, extension 303.

Sincerely,

Steve Henry
Assistant Field Supervisor
San Luis Obispo/ Northern Santa Barbara Counties

REFERENCES

Morro Group. 2000. San Luis Obispo County Airport Runway Extension – Construction Monitoring and Completion Report. San Luis Obispo, California.

Morro Group. 2001. Incident Report – Soapy Discharge at the San Luis Obispo County Airport. San Luis Obispo, California.

U.S. Fish and Wildlife Service. 2005. Recovery plan for vernal pool ecosystems of California and southern Oregon. Portland, Oregon.

Wolff, D. 2006. 2005 annual report for recovery permit TE090849-0. Los Osos, California.

U.S. ARMY CORPS OF ENGINEERS

This page intentionally left blank.

ESA

225 Bush Street
Suite 1700
San Francisco, CA 94104
415.896.5900 phone
415.896.0332 fax

www.esassoc.com

April 17, 2006

Mr. Bruce Henderson
Ecologist, Senior Project Manager
U.S. Army Corps of Engineers, Regulatory Branch
Ventura Field Office
2151 Alessandro Drive, Suite 225
Ventura, CA 93001

Subject: Application for Clean Water Act 404 Authorization and Verification of Waters of the U.S.

Dear Mr. Henderson:

On behalf of our client, the San Luis Obispo County Regional Airport, Environmental Science Associates (ESA) requests authorization for fill under Section 404 of the Clean Water Act for the above referenced project. A preconstruction notification (PCN) is attached. We are also requesting verification of jurisdiction of Waters of the U.S. for the project and have included a Preliminary Delineation of Waters for the project.

Project Location

SBP is located about three miles south of downtown San Luis Obispo in unincorporated San Luis Obispo County. The Airport is owned and operated by the County of San Luis Obispo. Maps of the project area are provided in the enclosed PCN.

Project Summary

The project involves several components to extend Runway 11 associated with Phase I of the SBP Master Plan. The primary project component is the extension of Runway 11 by 800 feet. The other project components are associated with the runway expansion. The Engineered Material Arresting System (EMAS) at both ends of Runway 11 is necessary to construct the runway by 800 feet. Airfield facilities associated with the project also include the construction of Taxiway A by 800 feet and construction of the Taxiway A hold apron. A perimeter service road around the end of the extended runway also will be constructed to provide access to the extended runway and taxiway.

The project also includes aviation support facilities include grading the runway safety area (RSA) and the object fee area (OFA) at the end of Runway 11 as per FAA regulations. Construction also involves the import of fill to support the runway and taxiway extensions, RSA, OFA, and Runway 11 extension, and the construction of the perimeter service road and Santa Fe Road.

Impact Summary

The SBP Runway 11 Extension project will result in the unavoidable permanent impacts to 0.27 acres and temporary impacts to approximately 0.05 acres of jurisdictional waters of the U.S., including wetlands. Permanent impacts will result from the extension of Runway 11 and associated facilities and the place of two outfall structures within the bed and bank of the East Fork of San Luis Obispo Creek. Temporary impacts will result from the realignment of Santa Fe Road and from the installation of the two outfall structures.

ESA can be available for a field verification of the jurisdictional waters at your convenience and we may want to take that opportunity to discuss the permitting issues at the project site as well. Please contact me via email at lmiles@esassoc.com or by phone at (415) 962-8458 if you have any questions or require additional information.

Sincerely,

Lee Miles
Regulatory Compliance Specialist

Attachments: Preliminary Delineation of Jurisdictional Waters of the U.S.
Preconstruction Notification

Cc: Klaasje Nairne, SBP
Barry Franklin, FAA

DEPARTMENT OF THE ARMY
LOS ANGELES DISTRICT, CORPS OF ENGINEERS
VENTURA FIELD OFFICE
2151 ALESSANDRO DRIVE, SUITE 110
VENTURA, CALIFORNIA 93001

REPLY TO
ATTENTION OF:

July 21, 2006

Office of the Chief
Regulatory Branch

DEPARTMENT OF THE ARMY NATIONWIDE PERMIT AUTHORIZATION

Klassje Nairne
County of San Luis Obispo
Department of General Services, County Airports
903 Airport Drive, Suite 5
San Luis Obispo, California 93401-8711

Dear Ms. Nairne:

This is in reply to your application (Corps File No. 200400159-BAH) dated April 14, 2006, concerning our permit authority under Section 404 of the Clean Water Act of 1972 (33 U.S.C. 1344) over your proposal to extend Runway 11 and Taxiway A associated with Phase I of the San Luis Obispo County Regional Airport Layout Plan, located in the City and County of San Luis Obispo, California. This project would extend the runway and taxiway approximately 800 feet at the western terminus, including an Engineered Material Arresting System (EMAS), construction of the Taxiway A hold apron, construction of a perimeter service road around the western terminus to provide general access, grading the runway safety area and object fee area per FAA regulations, realign Santa Fe Road, and placement of two outfall structures within the bed and bank of the East Fork of San Luis Obispo Creek. The extension of Runway 11 and placement of two outfall structures within the bed and bank of the East Fork of San Luis Obispo Creek would result in unavoidable impacts to 0.27 acres of waters of the United States. Temporary impacts to approximately 0.05 acres of jurisdictional waters of the U.S. would result from the realignment of Santa Fe Road and placement of the two outfall structures.

The Corps of Engineers has determined your proposed activity complies with the terms and conditions of Nationwide Permit Number 14: Linear Transportation Projects and Nationwide Permit Number 7: Outfall Structures, both of which are described in enclosure 1. Furthermore, you must comply with the following non-discretionary Special Conditions:

Special Conditions:

1. The permittee shall utilize siltation control measures (e.g., silt fences, hay bales, etc.) in all areas where disturbed soils may potentially wash into the creek or adjacent

depressional wetlands via rainfall or runoff. Such measures shall remain in place until the project is complete and exposed soils are stabilized.

2. The permittee shall ensure no debris, soil, silt, sand, rubbish, cement or washings thereof, or petroleum products or washings thereof, are allowed to enter into or placed where it may be washed by rainfall or runoff into the waterway.

3. The permittee shall ensure staging and storage of equipment and project materials, and fueling and maintenance of equipment, are located in areas outside of the Corps' jurisdiction.

4. The permittee shall ensure the limits of the project's impact area are delimited by the placement of temporary construction fencing, staking or signage prior to initiation of construction, to ensure equipment and personnel do not enter environmentally sensitive areas adjacent to the project area.

5. To minimize sedimentation and other impacts to the drainages, the permittee shall stabilize any disturbed slope areas using jute netting or other appropriate means, and revegetate the disturbed portions of the work area with native vegetation before the onset of the first winter rains following construction.

6. This Corps permit does not authorize you to take any threatened or endangered species, in particular the federally threatened vernal pool fairy shrimp (*Branchinecta lynchi*). In order to legally take a listed species, you must have separate authorization under the Endangered Species Act (ESA), such as an ESA Section 10 permit or a Biological Opinion (BO) under ESA Section 7, with "incidental take" provisions with which you must comply. The enclosed U.S. Fish and Wildlife Service biological opinion (1-8-06-F-35; PAS 722.3155.5547), dated June 22 and issued to the Federal Aviation Administration, contains mandatory terms and conditions to implement the reasonable and prudent measures associated with incidental take that is also specified in the opinion. Your authorization under this Corps permit is conditional upon your compliance with all of the mandatory terms and conditions associated with incidental take of the BO, which terms and conditions are incorporated by reference in this permit. Failure to comply with the terms and conditions associated with incidental take of the BO, where a take of the listed species occurs, would constitute an unauthorized take, and it would also constitute non-compliance with your Corps permit.

7. The permittee shall provide notification to the Corps of Engineers, either written or verbal, of the anticipated beginning and ending dates of construction prior to the start of work.

8. Within 45 days of completion of the project, the permittee shall submit to the Corps of Engineers photographs taken at representative locations pertinent to the aquatic resources on site before, during and after construction.

9. The permittee shall mitigate for permanent impacts to riparian and wetland habitats by implementation of the Filipponi Ecological Area Airport Mitigation II, Seasonal Wetland Enhancement Proposal (Appendix B), dated March 15, 2006, submitted with the permit application for the San Luis Obispo County Regional Airport (SBP) Runway 11 Extension Project, dated April 14, 2006.

10. The permittee shall monitor the mitigation area for a minimum of five years. Brief and succinct monitoring reports shall be prepared annually describing observations of implemented mitigation (levee and pond construction, establishment of vegetation, assessment of habitat quality, relative cover of vegetation to bare ground, relative cover of native vegetation versus non-native vegetation, control of non-native vegetation, description of problems related to the mitigation site, proposed modifications to address problems, etc.). Said monitoring reports shall be provided to the Corps not later than July 1 following mitigation implementation, and shall include representative photographs of the site during and following construction, and each year of the monitoring period.

11. A copy of the permit shall be on the job site at all times during construction. The permittee shall provide a copy of this permit to all contractors and forepersons, and require they read this authorization in its entirety and acknowledge they understand its contents and their responsibility to ensure compliance with all general and special conditions contained herein.

This letter of verification is valid through March 19, 2007. All nationwide permits expire on March 19, 2007. If you either contract the work or begin construction on or before March 19, 2007 you will have an additional 12 months to complete the activity under the attached nationwide permit terms and conditions. If the work is not under construction or contract by March 19, 2007 the work will be subject to regulations in effect at the time when you re-apply for a permit. It is incumbent upon you to remain informed of changes to the nationwide permits. If the Corps of Engineers modifies, reissues, or revokes any nationwide permit at an earlier date, we will issue a public notice announcing the changes.

A nationwide permit does not grant any property rights or exclusive privileges. Also, it does not authorize any injury to the property or rights of others or authorize interference with any existing or proposed Federal project. Furthermore, it does not obviate the need to obtain other Federal, state, or local authorizations required by law.

Thank you for participating in our regulatory program. If you have any questions, please contact me at (805) 585-2145.

Sincerely,

Bruce A. Henderson
Senior Project Manager
North Coast Section

Enclosure

NATIONWIDE PERMITS NUMBER 7 and 14 TERMS AND CONDITIONS

1. **Nationwide Permit 7 and 14 Terms**: Your activity is authorized under Nationwide Permit Number 7 and 14 subject to the following terms:

Nationwide Permit Number 7: Outfall Structures and Maintenance. Activities related to: (i) Construction of outfall structures and associated intake structures where the effluent from the outfall is authorized, conditionally authorized, or specifically exempted, or are otherwise in compliance with regulations issued under the National Pollutant Discharge Elimination System Program (Section 402 of the CWA), and (ii) Maintenance excavation, including dredging, to remove accumulated sediments blocking or restricting outfall and intake structures, accumulated sediments from small impoundments associated with outfall and intake structures, and accumulated sediments from canals associated with outfall and intake structures, provided that the activity meets all of the following criteria:

a. The permittee notifies the District Engineer in accordance with General Condition 13;
b. The amount of excavated or dredged material must be the minimum necessary to restore the outfalls, intakes, small impoundments, and canals to original design capacities and design configurations (i.e., depth and width);
c. The excavated or dredged material is deposited and retained at an upland site, unless otherwise approved by the District Engineer under separate authorization; and
d. Proper soil erosion and sediment control measures are used to minimize reentry of sediments into waters of the US.

The construction of intake structures is not authorized by this NWP, unless they are directly associated with an authorized outfall structure. For maintenance excavation and dredging to remove accumulated sediments, the notification must include information regarding the original design capacities and configurations of the facility and the presence of special aquatic sites (e.g., vegetated shallows) in the vicinity of the proposed work. (Sections 10 and 404)

Nationwide Permit Number 14. Linear Transportation Projects. Activities required for the construction, expansion, modification, or improvement of linear transportation crossings (e.g., highways, railways, trails, airport runways, and taxiways) in waters of the US, including wetlands, if the activity meets the following criteria:

a. This NWP is subject to the following acreage limits:
   (1) For linear transportation projects in non-tidal waters, provided the discharge does not cause the loss of greater than 1/2-acre of waters of the US; or
   (2) For linear transportation projects in tidal waters, provided the discharge does not cause the loss of greater than 1/3-acre of waters of the US.
b. The permittee must notify the District Engineer in accordance with General Condition 13 if any of the following criteria are met:
   (1) The discharge causes the loss of greater than 1/10-acre of waters of the US; or
   (2) There is a discharge in a special aquatic site, including wetlands;
c. The notification must include a compensatory mitigation proposal to offset permanent losses of waters of the US to ensure that those losses result only in minimal adverse effects to the aquatic environment and a statement describing how temporary losses will be minimized to the maximum extent practicable;
d. For discharges in special aquatic sites, including wetlands, and stream riffle and pool complexes, the notification must include a delineation of the affected special aquatic sites;
e. The width of the fill is limited to the minimum necessary for the crossing;
f. This permit does not authorize stream channelization, and the authorized activities must not cause more than minimal changes to the hydraulic flow characteristics of the stream, increase flooding, or cause more than minimal degradation of water quality of any stream (see General Conditions 9 and 21);
g. This permit cannot be used to authorize non-linear features commonly associated with transportation projects, such as vehicle maintenance or storage buildings, parking lots, train stations, or aircraft hangars; and
h. The crossing is a single and complete project for crossing waters of the US. Where a road segment (i.e., the shortest segment of a road with independent utility that is part of a larger project) has multiple crossings of streams (several single and complete projects) the Corps will consider whether it should use its discretionary authority to require an Individual Permit. (Sections 10 and 404)

Note: Some discharges for the construction of farm roads, forest roads, or temporary roads for moving mining equipment may be eligible for an exemption from the need for a Section 404 permit (see 33 CFR 323.4).

2. **Nationwide Permit General Conditions:** The following general conditions must be followed in order for any authorization by an NWP to be valid:

1. *Navigation.* No activity may cause more than a minimal adverse effect on navigation.
2. *Proper Maintenance.* Any structure or fill authorized shall be properly maintained, including maintenance to ensure public safety.
3. *Soil Erosion and Sediment Controls.* Appropriate soil erosion and sediment controls must be used and maintained in effective operating condition during construction, and all exposed soil and other fills, as well as any work below the ordinary high water mark or high tide line, must be permanently stabilized at the earliest practicable date. Permittees are encouraged to perform work within waters of the United States during periods of low-flow or no-flow.
4. *Aquatic Life Movements.* No activity may substantially disrupt the necessary life-cycle movements of those species of aquatic life indigenous to the waterbody, including those species that normally migrate through the area, unless the activity's primary purpose is to impound water. Culverts placed in streams must be installed to maintain low flow conditions.
5. *Equipment.* Heavy equipment working in wetlands must be placed on mats, or other measures must be taken to minimize soil disturbance.
6. *Regional and Case-By-Case Conditions.* The activity must comply with any regional conditions that may have been added by the Division Engineer (see 33 CFR 330.4(e)). Additionally, any case specific conditions added by the Corps or by the state or tribe in its Section 401 Water Quality Certification and Coastal Zone Management Act consistency determination.
7. *Wild and Scenic Rivers.* No activity may occur in a component of the National Wild and Scenic River System; or in a river officially designated by Congress as a "study river" for possible inclusion in the system, while the river is in an official study status; unless the appropriate Federal agency, with direct management responsibility for such river, has determined in writing that the proposed activity will not adversely affect the Wild and Scenic River designation, or study status. Information on Wild and Scenic Rivers may be obtained from the appropriate Federal land management agency in the area (e.g., National Park Service, U.S. Forest Service, Bureau of Land Management, U.S. Fish and Wildlife Service).
8. *Tribal Rights.* No activity or its operation may impair reserved tribal rights, including, but not limited to, reserved water rights and treaty fishing and hunting rights.
9. *Water Quality.* (a) In certain states and tribal lands an individual 401 Water Quality Certification must be obtained or waived (See 33 CFR 330.4(c)).

   (b) For NWPs 12, 14, 17, 18, 32, 39, 40, 42, 43, and 44, where the state or tribal 401 certification (either generically or individually) does not require or approve water quality management measures, the permittee must provide water quality management measures that will ensure that the authorized work does not result in more than minimal degradation of water quality (or the Corps determines that compliance with state or local standards, where applicable, will ensure no more than minimal adverse effect on water quality). An important component of water quality management includes stormwater management that minimizes degradation of the downstream aquatic system, including water quality (refer to General Condition 21 for stormwater management requirements). Another important component of water quality management is the establishment and maintenance of vegetated buffers next to open waters, including streams (refer to General Condition 19 for vegetated buffer requirements for the NWPs).

   This condition is only applicable to projects that have the potential to affect water quality. While appropriate measures must be taken, in most cases it is not necessary to conduct detailed studies to identify such measures or to require monitoring.
10. *Coastal Zone Management.* In certain states, an individual state coastal zone management consistency concurrence must be obtained or waived (see Section 330.4(d)).
11. *Endangered Species.* (a) No activity is authorized under any NWP which is likely to jeopardize the continued existence of a threatened or endangered species or a species proposed for such designation, as identified under the Federal Endangered Species Act (ESA), or which will destroy or adversely modify the critical habitat of such species. Non-federal permittees shall notify the District Engineer if any listed species or designated critical habitat might be affected or is in the vicinity of the project, or is located in the designated critical habitat and shall not begin work on the activity until notified by the District Engineer that the requirements of the ESA have been satisfied and that the activity is authorized. For activities that may affect Federally-listed endangered or threatened species or designated critical habitat, the notification must include the name(s) of the endangered or threatened species that may be affected by the proposed work or that utilize the designated critical habitat that may be affected by the proposed work. As a result of formal or informal consultation with the FWS or NMFS the District Engineer may add species-specific regional endangered species conditions to the NWPs.

    (b) Authorization of an activity by a NWP does not authorize the "take" of a threatened or endangered species as defined under the ESA. In the absence of separate authorization (e.g., an ESA Section 10 Permit, a Biological Opinion with "incidental take" provisions, etc.) from the USFWS or the NMFS, both lethal and non-lethal "takes" of protected species are in violation of the ESA. Information on the location of threatened and endangered species and their critical habitat can be obtained directly from the offices of the USFWS and NMFS or their world wide web pages at http://www.fws.gov/r9endspp/endspp.html and http://www.nfms.gov/prot_res/esahome.html respectively.
12. *Historic Properties.* No activity which may affect historic properties listed, or eligible for listing, in the National Register of Historic Places is authorized, until the District Engineer has complied with the provisions of 33 CFR Part 325, Appendix C.

The prospective permittee must notify the District Engineer if the authorized activity may affect any historic properties listed, determined to be eligible, or which the prospective permittee has reason to believe may be eligible for listing on the National Register of Historic Places, and shall not begin the activity until notified by the District Engineer that the requirements of the National Historic Preservation Act have been satisfied and that the activity is authorized. Information on the location and existence of historic resources can be obtained from the State Historic Preservation Office and the National Register of Historic Places (see 33 CFR 330.4(g)). For activities that may affect historic properties listed in, or eligible for listing in, the National Register of Historic Places, the notification must state which historic property may be affected by the proposed work or include a vicinity map indicating the location of the historic property.

13. *Notification.*

(a) *Timing*: where required by the terms of the NWP, the prospective permittee must notify the District Engineer with a preconstruction notification (PCN) as early as possible. The District Engineer must determine if the notification is complete within 30 days of the date of receipt and can request additional information necessary to make the PCN complete only once. However, if the prospective permittee does not provide all of the requested information, then the District Engineer will notify the prospective permittee that the notification is still incomplete and the PCN review process will not commence until all of the requested information has been received by the District Engineer. The prospective permittee shall not begin the activity:

(1) Until notified in writing by the District Engineer that the activity may proceed under the NWP with any special conditions imposed by the District or Division Engineer; or

(2) If notified in writing by the District or Division Engineer that an Individual Permit is required; or

(3) Unless 45 days have passed from the District Engineer's receipt of the complete notification and the prospective permittee has not received written notice from the District or Division Engineer. Subsequently, the permittee's right to proceed under the NWP may be modified, suspended, or revoked only in accordance with the procedure set forth in 33 CFR 330.5(d)(2).

(b) *Contents of Notification*: The notification must be in writing and include the following information:

(1) Name, address and telephone numbers of the prospective permittee;

(2) Location of the proposed project;

(3) Brief description of the proposed project; the project's purpose; direct and indirect adverse environmental effects the project would cause; any other NWP(s), Regional General Permit(s), or Individual Permit(s) used or intended to be used to authorize any part of the proposed project or any related activity. Sketches should be provided when necessary to show that the activity complies with the terms of the NWP (Sketches usually clarify the project and when provided result in a quicker decision.);

(4) For NWPs 7, 12, 14, 18, 21, 34, 38, 39, 41, 42, and 43, the PCN must also include a delineation of affected special aquatic sites, including wetlands, vegetated shallows (e.g., submerged aquatic vegetation, seagrass beds), and riffle and pool complexes (see paragraph 13(f));

(5) For NWP 7 (Outfall Structures and Maintenance), the PCN must include information regarding the original design capacities and configurations of those areas of the facility where maintenance dredging or excavation is proposed;

(6) For NWP 14 (Linear Transportation Crossings), The PCN must include a compensatory mitigation proposal to offset permanent losses of waters of the US and a statement describing how temporary losses of waters of the US will be minimized to the maximum extent practicable;

(7) For NWP 21 (Surface Coal Mining Activities), the PCN must include an Office of Surface Mining (OSM) or state-approved mitigation plan, if applicable. To be authorized by this NWP, the District Engineer must determine that the activity complies with the terms and conditions of the NWP and that the adverse environmental effects are minimal both individually and cumulatively and must notify the project sponsor of this determination in writing;

(8) For NWP 27 (Stream and Wetland Restoration), the PCN must include documentation of the prior condition of the site that will be reverted by the permittee;

(9) For NWP 29 (Single-Family Housing), the PCN must also include:.

(i) Any past use of this NWP by the Individual Permittee and/or the permittee's spouse;

(ii) A statement that the single-family housing activity is for a personal residence of the permittee;

(iii) A description of the entire parcel, including its size, and a delineation of wetlands. For the purpose of this NWP, parcels of land measuring ¼-acre or less will not require a formal on-site delineation. However, the applicant shall provide an indication of where the wetlands are and the amount of wetlands that exists on the property. For parcels greater than ¼-acre in size, formal wetland delineation must be prepared in accordance with the current method required by the Corps. (See paragraph 13(f));

(iv) A written description of all land (including, if available, legal descriptions) owned by the prospective permittee and/or the prospective permittee's spouse, within a one mile radius of the parcel, in any form of ownership (including any land owned as a partner, corporation, joint tenant, co-tenant, or as

a tenant-by-the-entirety) and any land on which a purchase and sale agreement or other contract for sale or purchase has been executed;

(10) For NWP 31 (Maintenance of Existing Flood Control Projects), the prospective permittee must either notify the District Engineer with a PCN prior to each maintenance activity or submit a five year (or less) maintenance plan. In addition, the PCN must include all of the following:
  (i) Sufficient baseline information identifying the approved channel depths and configurations and existing facilities. Minor deviations are authorized, provided the approved flood control protection or drainage is not increased;
  (ii) A delineation of any affected special aquatic sites, including wetlands; and,
  (iii) Location of the dredged material disposal site;

(11) For NWP 33 (Temporary Construction, Access, and Dewatering), the PCN must also include a restoration plan of reasonable measures to avoid and minimize adverse effects to aquatic resources;

(12) For NWPs 39, 43 and 44, the PCN must also include a written statement to the District Engineer explaining how avoidance and minimization for losses of waters of the US were achieved on the project site;

(13) For NWP 39 and NWP 42, the PCN must include a compensatory mitigation proposal to offset losses of waters of the US or justification explaining why compensatory mitigation should not be required. For discharges that cause the loss of greater than 300 linear feet of an intermittent stream bed, to be authorized, the District Engineer must determine that the activity complies with the other terms and conditions of the NWP, determine adverse environmental effects are minimal both individually and cumulatively, and waive the limitation on stream impacts in writing before the permittee may proceed;

(14) For NWP 40 (Agricultural Activities), the PCN must include a compensatory mitigation proposal to offset losses of waters of the US. This NWP does not authorize the relocation of greater than 300 linear-feet of existing serviceable drainage ditches constructed in non-tidal streams unless, for drainage ditches constructed in intermittent non-tidal streams, the District Engineer waives this criterion in writing, and the District Engineer has determined that the project complies with all terms and conditions of this NWP, and that any adverse impacts of the project on the aquatic environment are minimal, both individually and cumulatively;

(15) For NWP 43 (Stormwater Management Facilities), the PCN must include, for the construction of new stormwater management facilities, a maintenance plan (in accordance with state and local requirements, if applicable) and a compensatory mitigation proposal to offset losses of waters of the US. For discharges that cause the loss of greater than 300 linear feet of an intermittent stream bed, to be authorized, the District Engineer must determine that the activity complies with the other terms and conditions of the NWP, determine adverse environmental effects are minimal both individually and cumulatively, and waive the limitation on stream impacts in writing before the permittee may proceed;

(16) For NWP 44 (Mining Activities), the PCN must include a description of all waters of the US adversely affected by the project, a description of measures taken to minimize adverse effects to waters of the US, a description of measures taken to comply with the criteria of the NWP, and a reclamation plan (for all aggregate mining activities in isolated waters and non-tidal wetlands adjacent to headwaters and any hard rock/mineral mining activities);

(17) For activities that may adversely affect Federally-listed endangered or threatened species, the PCN must include the name(s) of those endangered or threatened species that may be affected by the proposed work or utilize the designated critical habitat that may be affected by the proposed work; and

(18) For activities that may affect historic properties listed in, or eligible for listing in, the National Register of Historic Places, the PCN must state which historic property may be affected by the proposed work or include a vicinity map indicating the location of the historic property.

(c) *Form of Notification*: The standard Individual Permit application form (Form ENG 4345) may be used as the notification but must clearly indicate that it is a PCN and must include all of the information required in (b) (1)-(18) of General Condition 13. A letter containing the requisite information may also be used.

(d) *District Engineer's Decision*: In reviewing the PCN for the proposed activity, the District Engineer will determine whether the activity authorized by the NWP will result in more than minimal individual or cumulative adverse environmental effects or may be contrary to the public interest. The prospective permittee may submit a proposed mitigation plan with the PCN to expedite the process. The District Engineer will consider any proposed compensatory mitigation the applicant has included in the proposal in determining whether the net adverse environmental effects to the aquatic environment of the proposed work are minimal. If the District Engineer determines that the activity complies with the terms and conditions of the NWP and that the adverse effects on the aquatic environment are minimal, after considering mitigation, the District Engineer will notify the permittee and include any conditions the District Engineer deems necessary. The District Engineer must approve any compensatory mitigation proposal before the permittee commences work. If the prospective permittee is required to submit a compensatory mitigation proposal with the PCN, the proposal may be either conceptual or detailed. If the prospective permittee elects to submit a compensatory mitigation plan with the PCN, the District Engineer will expeditiously review the proposed compensatory mitigation plan. The District Engineer must review the plan within 45 days

of receiving a complete PCN and determine whether the conceptual or specific proposed mitigation would ensure no more than minimal adverse effects on the aquatic environment. If the net adverse effects of the project on the aquatic environment (after consideration of the compensatory mitigation proposal) are determined by the District Engineer to be minimal, the District Engineer will provide a timely written response to the applicant. The response will state that the project can proceed under the terms and conditions of the NWP.

If the District Engineer determines that the adverse effects of the proposed work are more than minimal, then the District Engineer will notify the applicant either: (1) that the project does not qualify for authorization under the NWP and instruct the applicant on the procedures to seek authorization under an Individual Permit; (2) that the project is authorized under the NWP subject to the applicant's submission of a mitigation proposal that would reduce the adverse effects on the aquatic environment to the minimal level; or (3) that the project is authorized under the NWP with specific modifications or conditions. Where the District Engineer determines that mitigation is required to ensure no more than minimal adverse effects occur to the aquatic environment, the activity will be authorized within the 45-day PCN period. The authorization will include the necessary conceptual or specific mitigation or a requirement that the applicant submit a mitigation proposal that would reduce the adverse effects on the aquatic environment to the minimal level. When conceptual mitigation is included, or a mitigation plan is required under item (2) above, no work in waters of the US will occur until the District Engineer has approved a specific mitigation plan.

(e) *Agency Coordination*: The District Engineer will consider any comments from Federal and state agencies concerning the proposed activity's compliance with the terms and conditions of the NWPs and the need for mitigation to reduce the project's adverse environmental effects to a minimal level.

For activities requiring notification to the District Engineer that result in the loss of greater than ½-acre of waters of the US, the District Engineer will provide immediately (e.g., via facsimile transmission, overnight mail, or other expeditious manner) a copy to the appropriate Federal or state offices (USFWS, state natural resource or water quality agency, EPA, State Historic Preservation Officer (SHPO), and, if appropriate, the NMFS). With the exception of NWP 37, these agencies will then have 10 calendar days from the date the material is transmitted to telephone or fax the District Engineer notice that they intend to provide substantive, site-specific comments. If so contacted by an agency, the District Engineer will wait an additional 15 calendar days before making a decision on the notification. The District Engineer will fully consider agency comments received within the specified time frame, but will provide no response to the resource agency, except as provided below. The District Engineer will indicate in the administrative record associated with each notification that the resource agencies' concerns were considered. As required by Section 305(b)(4)(B) of the Magnuson-Stevens Fishery Conservation and Management Act, the District Engineer will provide a response to NMFS within 30 days of receipt of any Essential Fish Habitat conservation recommendations. Applicants are encouraged to provide the Corps multiple copies of notifications to expedite agency notification.

(f) *Wetland Delineations*: Wetland delineations must be prepared in accordance with the current method required by the Corps (For NWP 29 see paragraph (b)(9)(iii) for parcels less than ¼-acre in size). The permittee may ask the Corps to delineate the special aquatic site. There may be some delay if the Corps does the delineation. Furthermore, the 45-day period will not start until the wetland delineation has been completed and submitted to the Corps, where appropriate.

14. *Compliance Certification*. Every permittee who has received NWP verification from the Corps will submit a signed certification regarding the completed work and any required mitigation. The certification will be forwarded by the Corps with the authorization letter and will include:

    (a) A statement that the authorized work was done in accordance with the Corps authorization, including any general or specific conditions;

    (b) A statement that any required mitigation was completed in accordance with the permit conditions; and (c) The signature of the permittee certifying the completion of the work and mitigation.

15. *Use of Multiple Nationwide Permits*. The use of more than one NWP for a single and complete project is prohibited, except when the acreage loss of waters of the US authorized by the NWPs does not exceed the acreage limit of the NWP with the highest specified acreage limit (e.g. if a road crossing over tidal waters is constructed under NWP 14, with associated bank stabilization authorized by NWP 13, the maximum acreage loss of waters of the US for the total project cannot exceed 1/3-acre).

16. *Water Supply Intakes*. No activity, including structures and work in navigable waters of the US or discharges of dredged or fill material, may occur in the proximity of a public water supply intake except where the activity is for repair of the public water supply intake structures or adjacent bank stabilization.

17. *Shellfish Beds*. No activity, including structures and work in navigable waters of the US or discharges of dredged or fill material, may occur in areas of concentrated shellfish populations, unless the activity is directly related to a shellfish harvesting activity authorized by NWP 4.

18. *Suitable Material*. No activity, including structures and work in navigable waters of the US or discharges of dredged or fill material, may consist of unsuitable material (e.g., trash, debris, car bodies, asphalt, etc.) and material used for construction or discharged must be free from toxic pollutants in toxic amounts (see Section 307 of the CWA).

19. *Mitigation*. The District Engineer will consider the factors discussed below when determining the acceptability of appropriate and practicable mitigation necessary to offset adverse effects on the aquatic environment that are more than minimal.

(a) The project must be designed and constructed to avoid and minimize adverse effects to waters of the US to the maximum extent practicable at the project site (i.e., on site).

(b) Mitigation in all its forms (avoiding, minimizing, rectifying, reducing or compensating) will be required to the extent necessary to ensure that the adverse effects to the aquatic environment are minimal.

(c) Compensatory mitigation at a minimum one-for-one ratio will be required for all wetland impacts requiring a PCN, unless the District Engineer determines in writing that some other form of mitigation would be more environmentally appropriate and provides a project-specific waiver of this requirement. Consistent with National policy, the District Engineer will establish a preference for restoration of wetlands as compensatory mitigation, with preservation used only in exceptional circumstances.

(d) Compensatory mitigation (i.e., replacement or substitution of aquatic resources for those impacted) will not be used to increase the acreage losses allowed by the acreage limits of some of the NWPs. For example, ¼-acre of wetlands cannot be created to change a ¾-acre loss of wetlands to a ½-acre loss associated with NWP 39 verification. However, ½-acre of created wetlands can be used to reduce the impacts of a ½-acre loss of wetlands to the minimum impact level in order to meet the minimal impact requirement associated with NWPs.

(e) To be practicable, the mitigation must be available and capable of being done considering costs, existing technology, and logistics in light of the overall project purposes. Examples of mitigation that may be appropriate and practicable include, but are not limited to: reducing the size of the project; establishing and maintaining wetland or upland vegetated buffers to protect open waters such as streams; and replacing losses of aquatic resource functions and values by creating, restoring, enhancing, or preserving similar functions and values, preferably in the same watershed.

(f) Compensatory mitigation plans for projects in or near streams or other open waters will normally include a requirement for the establishment, maintenance, and legal protection (e.g., easements, deed restrictions) of vegetated buffers to open waters. In many cases, vegetated buffers will be the only compensatory mitigation required. Vegetated buffers should consist of native species. The width of the vegetated buffers required will address documented water quality or aquatic habitat loss concerns. Normally, the vegetated buffer will be 25 to 50 feet wide on each side of the stream, but the District Engineers may require slightly wider vegetated buffers to address documented water quality or habitat loss concerns. Where both wetlands and open waters exist on the project site, the Corps will determine the appropriate compensatory mitigation (e.g., stream buffers or wetlands compensation) based on what is best for the aquatic environment on a watershed basis. In cases where vegetated buffers are determined to be the most appropriate form of compensatory mitigation, the District Engineer may waive or reduce the requirement to provide wetland compensatory mitigation for wetland impacts.

(g) Compensatory mitigation proposals submitted with the "notification" may be either conceptual or detailed. If conceptual plans are approved under the verification, then the Corps will condition the verification to require detailed plans be submitted and approved by the Corps prior to construction of the authorized activity in waters of the US.

(h) Permittees may propose the use of mitigation banks, in-lieu fee arrangements or separate activity-specific compensatory mitigation. In all cases that require compensatory mitigation, the mitigation provisions will specify the party responsible for accomplishing and/or complying with the mitigation plan.

20. *Spawning Areas.* Activities, including structures and work in navigable waters of the US or discharges of dredged or fill material, in spawning areas during spawning seasons must be avoided to the maximum extent practicable. Activities that result in the physical destruction (e.g., excavate, fill, or smother downstream by substantial turbidity) of an important spawning area are not authorized.
21. *Management of Water Flows.* To the maximum extent practicable, the activity must be designed to maintain preconstruction downstream flow conditions (e.g., location, capacity, and flow rates). Furthermore, the activity must not permanently restrict or impede the passage of normal or expected high flows (unless the primary purpose of the fill is to impound waters) and the structure or discharge of dredged or fill material must withstand expected high flows. The activity must, to the maximum extent practicable, provide for retaining excess flows from the site, provide for maintaining surface flow rates from the site similar to preconstruction conditions, and provide for not increasing water flows from the project site, relocating water, or redirecting water flow beyond preconstruction conditions. Stream channelizing will be reduced to the minimal amount necessary, and the activity must, to the maximum extent practicable, reduce adverse effects such as flooding or erosion downstream and upstream of the project site, unless the activity is part of a larger system designed to manage water flows. In most cases, it will not be a requirement to conduct detailed studies and monitoring of water flow.

    This condition is only applicable to projects that have the potential to affect waterflows. While appropriate measures must be taken, it is not necessary to conduct detailed studies to identify such measures or require monitoring to ensure their effectiveness. Normally, the Corps will defer to state and local authorities regarding management of water flow.
22. *Adverse Effects From Impoundments.* If the activity creates an impoundment of water, adverse effects to the aquatic system due to the acceleration of the passage of water, and/or the restricting its flow shall be minimized to the maximum extent practicable. This includes structures and work in navigable waters of the US, or discharges of dredged or fill material.
23. *Waterfowl Breeding Areas.* Activities, including structures and work in navigable waters of the US or discharges of dredged or fill material, into breeding areas for migratory waterfowl must be avoided to the maximum extent practicable.
24. *Removal of Temporary Fills.* Any temporary fills must be removed in their entirety and the affected areas returned to their preexisting elevation.

25. *Designated Critical Resource Waters.* Critical resource waters include, NOAA-designated marine sanctuaries, National Estuarine Research Reserves, National Wild and Scenic Rivers, critical habitat for Federally listed threatened and endangered species, coral reefs, state natural heritage sites, and outstanding national resource waters or other waters officially designated by a state as having particular environmental or ecological significance and identified by the District Engineer after notice and opportunity for public comment. The District Engineer may also designate additional critical resource waters after notice and opportunity for comment.

(a) Except as noted below, discharges of dredged or fill material into waters of the US are not authorized by NWPs 7, 12, 14, 16, 17, 21, 29, 31, 35, 39, 40, 42, 43, and 44 for any activity within, or directly affecting, critical resource waters, including wetlands adjacent to such waters. Discharges of dredged or fill materials into waters of the US may be authorized by the above NWPs in National Wild and Scenic Rivers if the activity complies with General Condition 7. Further, such discharges may be authorized in designated critical habitat for Federally listed threatened or endangered species if the activity complies with General Condition 11 and the USFWS or the NMFS has concurred in a determination of compliance with this condition.

(b) For NWPs 3, 8, 10, 13, 15, 18, 19, 22, 23, 25, 27, 28, 30, 33, 34, 36, 37, and 38, notification is required in accordance with General Condition 13, for any activity proposed in the designated critical resource waters including wetlands adjacent to those waters. The District Engineer may authorize activities under these NWPs only after it is determined that the impacts to the critical resource waters will be no more than minimal.

26. *Fills Within 100-Year Floodplains.* For purposes of this General Condition, 100-year floodplains will be identified through the existing Federal Emergency Management Agency's (FEMA) Flood Insurance Rate Maps or FEMA-approved local floodplain maps.

(a) *Discharges in Floodplain; Below Headwaters.* Discharges of dredged or fill material into waters of the US within the mapped 100-year floodplain, below headwaters (i.e. five cfs), resulting in permanent above-grade fills, are not authorized by NWPs 39, 40, 42, 43, and 44.

(b) *Discharges in Floodway; Above Headwaters.* Discharges of dredged or fill material into waters of the US within the FEMA or locally mapped floodway, resulting in permanent above-grade fills, are not authorized by NWPs 39, 40, 42, and 44.

(c) The permittee must comply with any applicable FEMA-approved state or local floodplain management requirements.

27. *Construction Period.* For activities that have not been verified by the Corps and the project was commenced or under contract to commence by the expiration date of the NWP (or modification or revocation date), the work must be completed within 12-months after such date (including any modification that affects the project).

For activities that have been verified and the project was commenced or under contract to commence within the verification period, the work must be completed by the date determined by the Corps.

For projects that have been verified by the Corps, an extension of a Corps approved completion date may be requested. This request must be submitted at least one month before the previously approved completion date.

3. Regional Conditions for the Los Angeles District

In accordance with General Condition Number 6, "Regional and Case-by-Case Conditions," the following Regional Conditions, as added by the Division Engineer, must be met in order for an authorization by any Nationwide to be valid:

1. For coastal watersheds from the southern reach of the Santa Monica Mountains in Los Angeles County to the San Luis Obispo County/Monterey County boundary, all road crossings must employ a bridge crossing design that ensures passage and/or spawning of steelhead (*Oncorhynchus mykiss*) is not hindered in any way. In these areas, bridge designs that span the stream or river, including designs for pier- or pile-supported spans, or designs based on use of a bottomless arch culvert simulating the natural stream bed (i.e., substrate and streamflow conditions in the culvert are similar to undisturbed stream bed channel conditions) shall be employed unless it can be demonstrated the stream or river does not support resources conducive to the recovery of federally listed *Anadromous salmonids*, including migration of adults and smolts, or rearing and spawning. This proposal also excludes approach embankments into the channel unless they are determined to have no detectable effect on steelhead.

2. For the State of Arizona and the Mojave and Sonoran (Colorado) desert regions of California in Los Angeles District (generally north and east of the San Gabriel, San Bernardino, San Jacinto, and Santa Rosa mountain ranges, and south of Little Lake, Inyo County), no nationwide permit, except Nationwide Permits 1 (Aids to Navigation), 2 (Structures in Artificial Canals), 3 (Maintenance), 4 (Fish and Wildlife Harvesting, Enhancement, and Attraction Devices and Activities), 5 (Scientific Measurement Devices), 6 (Survey Activities), 9 (Structures in Fleeting and Anchorage Areas), 10 (Mooring Buoys), 11 (Temporary Recreational Structures), 20 (Oil Spill Cleanup), 22 (Removal of Vessels), 27 (Stream and Wetland Restoration Activities), 30 (Moist Soil Management for Wildlife), 31 (Maintenance of Existing Flood Control Projects), 32 (Completed Enforcement Actions), 35 (Maintenance Dredging of Existing Basins), 37 (Emergency Watershed Protection and Rehabilitation), and 38 (Cleanup of Hazardous and Toxic Waste), or other nationwide or regional general permits that specifically authorize maintenance of previously authorized structures or fill, can be used to authorize the discharge of

dredged or fill material into a jurisdictional special aquatic site as defined at 40 CFR Part 230.40-45 (sanctuaries and refuges, wetlands, mudflats, vegetated shallows, coral reefs, and riffle-and-pool complexes).

3. For all projects proposed for authorization by nationwide or regional general permits where prior notification to the District Engineer is required, applicants must provide color photographs or color photocopies of the project area taken from representative points documented on a site map. Pre-project photographs and the site map would be provided with the permit application. Photographs should represent conditions typical or indicative of the resources before impacts.

4. Notification pursuant to general condition 13 shall be required for projects in all special aquatic sites as defined at 40 CFR Part 230.40-45 (sanctuaries and refuges, wetlands, mudflats, vegetated shallows, coral reefs, and riffle-and-pool complexes), and in all perennial watercourses or waterbodies in the State of Arizona and the Mojave and Sonoran (Colorado) desert regions of California in Los Angeles District (generally north and east of the San Gabriel, San Bernardino, San Jacinto, and Santa Rosa mountain ranges, and south of Little Lake, Inyo County), excluding the Colorado River from Davis Dam downstream to the north end of Topock and downstream of Imperial Dam.

5. Notification pursuant to general condition 13 shall be required for projects in all areas designated as Essential Fish Habitat by the Pacific Fishery Management Council (i.e., all tidally influenced areas).

6. Notification pursuant to general condition 13 shall be required for projects in all watersheds in the Santa Monica Mountains in Los Angeles and Ventura counties bounded by Calleguas Creek on the west, by Highway 101 on the north and east, and by Sunset Boulevard and Pacific Ocean on the south.

7. Individual permits shall be required for all jurisdictional vernal pools.

8. Individual permits shall be required in Murrieta Creek and Temecula Creek watersheds in Riverside County for new permanent fills in perennial and intermittent watercourses otherwise authorized under NWPs 39, 42 and 43, and in ephemeral watercourses for these NWPs for projects that impact greater than 0.1 acre.

9. Individual permits shall be required in San Luis Obispo Creek and Santa Rosa Creek in San Luis Obispo County for bank stabilization projects, and in Gaviota Creek, Mission Creek and Carpinteria Creek in Santa Barbara County for bank stabilization projects and grade control structures.

4. **Further information:**

1. Congressional Authorities: You have been authorized to undertake the activity described above pursuant to:
   ( ) Section 10 of the Rivers and Harbors Act of 1899 (33 U.S.C. 403).
   (X) Section 404 of the Clean Water Act (33 U.S.C. 1344).

2. Limits of this authorization.
   (a) This permit does not obviate the need to obtain other Federal, state, or local authorizations required by law.
   (b) This permit does not grant any property rights or exclusive privileges.
   (c) This permit does not authorize any injury to the property or rights of others.
   (d) This permit does not authorize interference with any existing or proposed Federal project.

3. Limits of Federal Liability. In issuing this permit, the Federal Government does not assume any liability for the following:
   (a) Damages to the permitted project or uses thereof as a result of other permitted or unpermitted activities or from natural causes.
   (b) Damages to the permitted project or uses thereof as a result of current or future activities undertaken by or on behalf of the United States in the public interest.
   (c) Damages to persons, property, or to other permitted or unpermitted activities or structures caused by the activity authorized by this permit.
   (d) Design or construction deficiencies associated with the permitted work.
   (e) Damage claims associated with any future modification, suspension, or revocation of this permit.

4. Reliance on Applicant's Data: The determination of this office that issuance of this permit is not contrary to the public interest was made in reliance on the information you provided.

5. Reevaluation of Permit Decision. This office may reevaluate its decision on this permit at any time the circumstances warrant. Circumstances that could require a reevaluation include, but are not limited to, the following:
   (a) You fail to comply with the terms and conditions of this permit.
   (b) The information provided by you in support of your permit application proves to have been false, incomplete, or inaccurate (See 4 above).
   (c) Significant new information surfaces which this office did not consider in reaching the original public interest decision.

   Such a reevaluation may result in a determination that it is appropriate to use the suspension, modification, and revocation procedures contained in 33 CFR 330.5 or enforcement procedures such as those contained in 33 CFR 326.4 and 326.5. The referenced enforcement procedures provide for the issuance of an administrative order requiring you to comply with the terms and conditions of your permit and for the initiation of legal action where appropriate. You will be required to pay for any corrective measure ordered by this office, and if you fail to comply with such directive, this office may in certain situations (such as those specified in 33 CFR 209.170) accomplish the corrective measures by contract or otherwise and bill you for the cost.

6. This letter of verification is valid for a period not to exceed two years unless the nationwide permit is modified, reissued, revoked, or expires before that time.

7. You must maintain the activity authorized by this permit in good condition and in conformance with the terms and conditions of this permit. You are not relieved of this requirement if you abandon the permitted activity, although you may make a good faith transfer to a third party in compliance with General Condition H below. Should you wish to cease to maintain the authorized activity or should you desire to abandon it without a good faith transfer, you must obtain a modification of this permit from this office, which may require restoration of the area.

8. You must allow representatives from this office to inspect the authorized activity at any time deemed necessary to ensure that it is being or has been accomplished with the terms and conditions of your permit.

This page intentionally left blank.

CALIFORNIA DEPARTMENT OF FISH AND GAME

For Department Use Only					
Notification Number:		Date Received		Date Completed	
Fee Enclosed?	☐ Yes $_____		☐ No		
Action Taken/Notes					

STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF FISH AND GAME

NOTIFICATION OF LAKE OR STREAMBED ALTERATION

All fields must be completed unless otherwise indicated.
(See enclosures for instructions.)

Notification Type	
☐ Timber Harvesting Plan (No._____)	☐ Water Application (No._____)
☐ Commercial Gravel Extraction (No._____)	☐ Other

Application Information			
	Name	**Address**	**Telephone/FAX**
Applicant:	San Luis Obispo County Regional Airport Klaasje Nairne, Airport Manager	903-5 Airport Drive San Luis Obispo, CA 93401	Business: (805) 781-5205 Fax: (805) 781-5985
Operator:	San Luis Obispo County Regional Airport	903-5 Airport Drive San Luis Obispo, CA 93401	Business: (805) 781-5205 Fax: (805) 781-5985
Contractor: (if known)			Business: Fax:
Contact Person: (if not applicant)			Business: Fax:
Property Owner:	San Luis Obispo County Regional Airport	903-5 Airport Drive San Luis Obispo, CA 93401	Business: (805) 781-5205 Fax: (805) 781-5985

Project Location				
Location Description:	SPB Runway 11 Extension Project			
County		**Assessor's Parcel Number**		
San Luis Obispo		N/A		
USGS Map	**Township**	**Range**	**Section**	**Latitude/Longitude**
San Luis Obispo	26S	12N	15	35 66' N 120 69' W
Name of River, Stream, or Lake:	East Fork of San Luis Obispo Creek			
Tributary To?	San Luis Obispo Creek			

NOTIFICATION OF LAKE OR STREAMBED ALTERATION (Continued)

Name of Applicant: San Luis Obispo County Regional Airport

Project Description							
Project Name:	SBP Runway 11 Extension Project						
Start Date:	August 2006	**Completion Date:**	August 2007	**Project Cost:**	**$15M**	**Number of Stream Encroachments: (Timber Harvesting Plans Only)**	
Describe project below: (Attach separate pages if necessary)							
Please see attached Preconstruction Notification (PCN) for a detailed project description, maps, and figures. ☐ Continued on separate page (s)							

Attachments/Enclosures		
Attach or enclose the required documents listed below and check the corresponding boxes.		
☒ Project Description	☒ Map showing project location, including distances and/or directions from nearest city or town	☒ Construction plans and drawings pertaining to the project
Completed CEQA documents:	☐ Notice of Exemption ☐ Negative Declaration ☐ Mitigated Negative Declaration ☒ Draft or Final Environmental Impact Report ☐ Notice of Determination	
Copies of applicable local, State, or federal permits, agreements, or other authorizations:	☐ Local. Describe:	
	☒ State. Describe: 401 Water Quality Certification	
	☒ Federal. Describe: 404 NWP 7, 14, and 39	

I hereby certify that all information contained in this notification is true and correct and that I am authorized to sign this document. I understand that in the event this information is found to be untrue or incorrect, I may be subject to civil or criminal prosecution and the Department may consider this notification to be incomplete and/or cancel any Lake or Streambed Alteration Agreement issued pursuant to this notification. I understand that this notification is valid only for the project described herein and that I may be subject to civil or criminal prosecution for undertaking a project that differs from the one described herein, unless I have notified the Department of that project in accordance with Fish and Game Code Section 1602.

I understand that a Department representative may need to inspect the property where the project described herein will take place before issuing a Lake or Streambed Alteration Agreement pursuant to this notification. In the event the Department determines that a site inspection is necessary, I hereby authorize the Department to enter the property where the project described herein will take place to inspect the property at any reasonable time and certify that I am authorized to grant the Department permission to access the property.

☐ I request the Department to first contact me at (insert telephone number) _____ to schedule a date and time to enter the property where the project described herein will take place and understand that this may delay the Department's evaluation of the project described herein.

Operator or Operator's Representative — Date: 4-13-06

Form FG2023 (Effective January 12, 2004)

Lake and Streambed Alteration Program
Project Questionnaire

Please complete the following questionnaire and submit it with your notification package. Please attach or enclose any additional information or documents that support or relate to your response.

	Yes	Maybe/ Uncertain	No	Please explain if you responded "yes" or "maybe/uncertain"
1. Will the project or activity involve work on the bank of a river, stream, or lake?	X			The project will entail installation of two outfall structures in the East Fork of San Luis Obispo Creek. One 24-inch outfall pipeline will be installed to discharge 'nuisance' water from the flood bypass swale into the creek. A 42-inch outfall pipe will be installed from the new West Side Detention Basin that will be constructed on Airport property. The 42-inch pipeline will discharge stormwater overflow from the detention basin. Temporary impacts which will be approximately 0.05 acres, will result from temporary construction and excavation for the installation of the outfall structures. Permanent impacts will be approximately 0.082 acres. Permanent impacts will result from the installation of the outfall and placement of local rock rip rap for flow attenuation on the banks of the East Fork. Relocation of Santa Fe Road and fill for the airport Object Free Area (OFA) and Runway Safety Area (RSA) will result in fill to 0.013 acres of small tributary channel.
2. If you answered "yes" to #1, will the project or activity involve any of the following:				

	Yes	Maybe/ Uncertain	No	Please explain if you responded "yes" or "maybe/uncertain"
a. Removal of any vegetation?	X			The installation of the outfall structures will require the removal of minimal riparian and upland vegetation within the 2,500-square-foot temporary construction area. All areas disturbed during installation will be restored to pre-project conditions upon the completion of construction.
b. Excavation of the bank?	X			Installation of the outfalls will require minimal bank excavation of approximately 2,000 square feet of the bank of the East Fork during the installation of the outfall structures.
c. Placement of piers?			X	
d. Placement of bank protection or stabilization structures or materials (e.g., gabions, rip-rap, concrete slurry/sacks)?	X			Approximately 110 cubic yards of local rock rip-rap will be installed for approximately 120 linear feet. At each outfall location, 30 linear feet of local rip rap will be installed to attenuate flows from the outfalls. Rip rap will be installed on both the left and right bank at the outfall locations.
3. Will the project or activity take place in, adjacent to, or near a river that has been designated as "wild and scenic" under state or federal law?			X	The East Fork of San Luis Obispo Creek is not a designated wild and scenic river.
4. Will the project or activity involve work in the bed or channel of a river, stream, or lake?	X			Installation of the outfalls will result in permanent fill to approximately 0.082 acres within the bed and bank of the East Fork
5. Will the project or activity involve the placement of any permanent or temporary structure in a river, stream, or lake?	X			One 24-inch and one 42-inch outfall pipe will be placed within the bed and bank of the East Fork of San Luis Obispo Creek.
6. Will the project involve the use of material from a streambed?			X	
7. Will the project or activity result in the disposal or deposition of debris, waste, or other material in a river, stream, or lake?			X	

	Yes	Maybe/ Uncertain	No	Please explain if you responded "yes" or "maybe/uncertain"
a. If you answered "yes" to #7, describe the material that will be disposed of or deposited in the river stream, or, lake:				
8. Will any type of equipment be used in a river, stream, or lake?			X	Heavy equipment, including, but not limited to scrapers, excavators, and back hoes will be used to install the outfall structures. No heavy equipment will be allowed within the active channel of the creek. All equipment will work from outside the top of bank of the creek. Additionally, no refueling or repairing of construction vehicles will be permitted within the bed and bank of the creek.
a. If you answered "yes" to #8, describe the type of equipment that will be used:				
9. Does the project or activity area flood or periodically become inundated with water?	X			The East Fork of San Luis Obispo Creek is a ephemeral stream that carries stormwater and headwater flows during the rainy season. Installation of the outfall structures will be conducted in late spring or early summer when the creek is expected to be dry.
10. Will water need to be diverted from a river, stream, or lake for the project or activity?			X	No dewatering is anticipated. Installation of the outfall structures will be conducted in late spring or early summer when the creek is expected to be dry.
11. If you answered "yes" to #10, please answer the following:				
a. Will this be a temporary diversion?				
b. Will water quality be affected by the deposition of silt, an increase in water temperature, a change in the pH level, or in some other way?				

	Yes	Maybe/ Uncertain	No	Please explain if you responded "yes" or "maybe/uncertain"
c. Will the water be diverted by means of a dam, reservoir, or other water impoundment structure?				
12. Will the project or activity be done pursuant to a water right application or permit?			X	
13. Has a wildlife assessment or study been completed for the area where or near where the project or activity will take place? (If "yes", please attach or enclose a copy of the assessment or study.)	X			Reconnaissance-level and protocol habitat surveys have been completed for the project. Please see the attached EA/EIR and habitat survey report for California red-legged frog.
14. Will the project or activity affect fish, amphibians, insects, or other aquatic resources?		X		Temporary impacts to common amphibian and insect species during installation of the outfall structures. However, any impact to common species is expected to be minor and the project is such that species should be able to avoid the project area during construction.
15. Will the project or activity affect terrestrial wildlife?		X		Temporary impacts to common terrestrial species during installation of the outfall structures. However, any impact to common species is expected to be minor and the project is such that species should be able to avoid the project area during construction.
16. Are any endangered or rare plant species thought or known to occur in the area where the proposed project or activity will take place?			X	Please see the attached EA/EIR for details on special status plant occurrences within the vicinity of the project.
17. Are any endangered or threatened fish, bird, or animal species thought or known to occur in the area where the proposed project or activity will take place?			X	Please see the attached EA/EIR and habitat survey report for California red-legged frog for details on special status animal species within the vicinity of the project.
18. Have you contacted any other local, State, or federal agency	X			U.S. Army Corps of Engineers

	Yes	Maybe/ Uncertain	No	Please explain if you responded "yes" or "maybe/uncertain"
a. If you answered "yes" to #18, please list the names of the agencies you have contacted:	USFWS: Chris Kofron, Senior Biologist Corps: Bruce Henderson, Senior Project Manager			
19. Have you applied for or obtained any permit, agreement, or other authorization for your project or activity from any government agency?	X			U.S. Army Corps: Section 404 NWP Central Coast Regional Water Quality Control Board
If you answered "yes" to #19, please list the names or describe the permit, agreement, or authorization you have applied for or obtained:	Clean Water Act Section 404 NWP Clean Water Act Sectin 401 Water Quality Certification			
20. Have any environmental documents pertaining to your project or activity been prepared?	X			
a. If you answered "yes" to #20, please list the environmental documents that have been prepared:	EA/EIR for the San Luis Obispo County Regional Airport Master Plan Update. SCH # 2006011020			

I hereby certify that all information contained in this form is true and correct and that I am authorized to sign this document. I understand that in the event this information is found to be untrue or incorrect, I may be subject to civil or criminal prosecution and the Department may consider my notification to be incomplete and/or cancel any Lake or Streambed Alteration Agreement issued pursuant to my notification.

Operator or Operator's Representative

4-12-06
Date

REGIONAL WATER QUALITY CONTROL BOARD

ESA

225 Bush Street
Suite 1700
San Francisco, CA 94104
415.896.5900 phone
415.896.0332 fax

www.esassoc.com

April 17, 2006

Mr. Chris Adair
Central Coast Regional Water Quality Control Board
895 Aerovista Place
San Luis Obispo, CA 93401

Subject: Request for Water Quality Certification for the San Luis Obispo County Regional Airport Runway 11 Extension Project, San Luis Obispo, CA

Dear Mr. Adair:

On behalf of our client, the San Luis Obispo County Regional Airport, Environmental Science Associates (ESA) requests a Water Quality Certification pursuant to Section 401 of the federal Clean Water Act for the above referenced project. A preconstruction notification (PCN) is enclosed.

Project Location

SBP is located about three miles south of downtown San Luis Obispo in unincorporated San Luis Obispo County. The Airport is owned and operated by the County of San Luis Obispo. Maps of the project area are provided in the enclosed PCN.

Project Summary

The project involves several components to extend Runway 11 associated with Phase I of the SBP Master Plan. The primary project component is the extension of Runway 11 by 800 feet. The other project components are associated with the runway expansion. The Engineered Material Arresting System (EMAS) at both ends of Runway 11 is necessary to construct the runway by 800 feet. Airfield facilities associated with the project also include the construction of Taxiway A by 800 feet and construction of the Taxiway A hold apron. A perimeter service road around the end of the extended runway also will be constructed to provide access to the extended runway and taxiway.

The project also includes aviation support facilities include grading the runway safety area (RSA) and the object fee area (OFA) at the end of Runway 11 as per FAA regulations. Construction also involves the import of fill to support the runway and taxiway extensions, RSA, OFA, and Runway 11 extension, and the construction of the perimeter service road and Santa Fe Road.

Impact Summary

The SBP Runway 11 Extension project will result in the unavoidable permanent impacts to 0.27 acres and temporary impacts to approximately 0.05 acres of jurisdictional waters of the U.S., including wetlands. Permanent impacts will result from the extension of Runway 11 and associated facilities and the place of two outfall structures within the bed and bank of the East Fork of San Luis Obispo Creek. Temporary impacts will result from the realignment of Santa Fe Road and from the installation of the two outfall structures.

ESA

Also enclosed is a deposit check in the amount of $500 for review of our application, a completed Central Coast 401 Water Quality Certification Application, a CD with the EA/EIR for the project, and P*reliminary Delineation of Jurisdictional Waters at the San Luis Obispo County Regional Airport, San Luis Obispo, California.* Please contact me via email at lmiles@esassoc.com or by phone at (415) 962-8458 if you have any questions or require additional information.

Sincerely,

Lee Miles
Regulatory Compliance Specialist

Attachments:

Cc: Klaasje Nairne, SBP
Barry Franklin, FAA

APPENDIX K

Drainage Study for San Luis Obispo County Regional Airport Runway 11 Extension

Final Report

Drainage Study

San Luis Obispo County Regional Airport Runway 11 Extension

Prepared for:

ESA Environmental Science Associates

Environmental Science Associates
San Francisco, California

San Luis Obispo County
San Luis Obispo, California

Prepared by:

MEAD & HUNT

Offices Nationwide
www.meadhunt.com
March 2005

Table of Contents

List of Tables

List of Figures

List of Appendices

Appendix

San Luis Obispo County
Regional Airport Runway 11 Extension
Drainage Study

Executive Summary

Mead & Hunt performed this drainage study to evaluate drainage issues related to the future development at the San Luis Obispo County Regional Airport. As a result of proposed development, there are two drainage related issues that need to be addressed:

- Increased runoff from the airport due to additional pavement associated with the airport improvements; and
- The encroachment into the 100-year floodplain of the East Branch of San Luis Obispo (SLO) Creek resulting form the Runway 11 extension and associated relocation of Santa Fe Road.

This drainage study is based on the hydrologic and hydraulic models and guidelines of the City of San Luis Obispo Department of Public Works and County of San Luis Obispo Flood Control District – Zone 9 *Waterway Management Plan for San Luis Obispo Creek* (commonly referred to as the *Zone 9 study*).

The increased runoff from the development is proposed to be mitigated with two detention ponds and drainage changes and improvements as listed below:

- Northwest Detention Basin – A new detention basin pond will be located on the airport to the north of the proposed extension of the eastern end of Runway 11.
- The drainage on the eastern portion of the airport is proposed to be reconfigured to route drainage from the new apron and hangar areas to the new northwest detention basin.
- A new storm drain line extending from the new northeast apron and hangar area that will run parallel to and to the north of Runway 11. These storm drain line will terminate at the new northwest detention basin. This storm drain will convey runoff from the eastern portion of the airport, Collet drainage, a portion of Runway 7, a portion of the business park, and Runway 11.
- Land to the south of the Runway 11 extension will drain under the Santa Fe Road into the East Branch SLO bypass channel. The detention basin currently located to the south of the Runway 11 extension will eventually be filled, as with re-routing of the runoff between the two runways into the new detention pond, there will no longer be a need for this existing detention pond.
- A portion of the Collet drainage on the northeastern portion of the airport is proposed to be reconfigured to route drainage to the new northwest detention pond.
- Drainage in the center portion of the airport between the two runways is proposed to be routed to the northwest detention pond.
- Northeast Detention Basin – The northeast detention basin is located off the airport proper to the north Highway 227 at the eastern end of the airport. A depression in the area of the hangar and

apron additions will be removed, which results in additional water detention upstream of Highway 227. Future development of the lands to the north of Highway 227 (by others) will result in the need to provide additional detention to the north.

- The remaining drainage from eastern portion of the airport (excluding the new apron and hangar area) and the inflow from the north of Highway 227 that currently passes through the airport will continue to drain under Buckley Road. The culvert under Buckley Road is to be constricted to reduce peak flows to the south.

Three alternatives are evaluated in this study to mitigate for the 100-year floodplain encroachment of the East Branch of SLO Creek as follows:

- Alternative Plan 1 – Increase the conveyance of the left overbank by providing an excavated channel. Conceptual level cost = $588,000.
- Alternative Plan 2 – Divert flow into the existing old channel of the East Branch of SLO Creek. Conceptual level cost = $236,000.
- Alternative Plan 3 – Divert flow through four 8-foot diameter reinforced concrete pipes under the runway extension. Conceptual level cost = $10,545,000.

Alternative Plan 1 above is the recommended action to mitigate for the floodplain encroachment.

San Luis Obispo County
Regional Airport Runway 11 Extension
Drainage Study

1. Introduction

Mead & Hunt prepared this drainage study to evaluate drainage issues related to the future improvements on the San Luis County Regional Airport. The location of the airport is shown in Figure 1. The proposed airport development is shown in Figure 2. As a result of the proposed airport improvements, there are two distinctly separate drainage related issues that need to be addressed:

- The additional pavement will increase runoff from the airport. That additional runoff will need to be detained to reduce the peak runoff from the airport to the existing conditions. This report presents hydrologic and hydraulic evaluations to determine the additional runoff from the runway extension and other improvements and provide the conceptual design for detention to mitigate for the additional runoff.
- In order to accommodate the Runway 11 extension, Santa Fe Road, located to the west of the airport, will need to be relocated further to the west. The runway extension and new alignment of Santa Fe Road will encroach in the 100-year floodplain of the East Branch of San Luis Obispo (SLO) Creek, thereby raising the 100-year water surface elevation in the East Branch of SLO Creek outside of the airport. Three conceptual-level alternatives are evaluated to mitigate the adverse impacts of the encroachment (i.e. to lower the post-development water surface elevations to within 64 millimeters (2.5 inches)[1] of the pre-development levels). The cost of each alternative plan was also estimated and is included in this study.

The City of San Luis Obispo Department of Public Works and County of San Luis Obispo Flood Control District – Zone 9 prepared the *Waterway Management Plan for San Luis Obispo Creek* (commonly referred to as the *Zone 9 study*). This drainage study is based on the regulations and drainage criteria of the *Waterway Management Plan for San Luis Obispo Creek Watershed*. The Zone 9 study included the development of an HEC-HMS hydrologic model and an HEC-RAS hydraulic model for East Branch of SLO Creek. These models were used as the basis for this study, and modified accordingly to evaluate the additional runoff from the proposed development as well as the encroachment on the East Branch SLO Creek.

The HMS model prepared for the Zone 9 study does not provide adequate detail for the design of internal drainage features associated with the airport. A SWMM model was, therefore, prepared to address the airport internal drainage issues. The SWMM model was used to determine the total amount of detention

1 Dimensions and elevations in this report are presented in both SI and English units. Previous drainage studies for the area, which are the basis for this study, were performed in SI units. Since many other studies associated with this project are in English units, both are provided throughout this report.

required to accommodate the proposed future improvements at the SLO Regional Airport, and to size the conveyance features (storm sewer and open channels as appropriate).

All elevations used in this drainage study are referenced from the North American Vertical Datum of 1988 (NAVD88). Left and right are referred to throughout this report looking downstream.

2. Project Description

The projects under consideration for this drainage study include:

- Extension of the northwest end of Runway 11 with the associated taxiways and perimeter road.
- Relocation of Santa Fe Road further to the west to accommodate the Runway 11 extension. The Santa Fe Road relocation will extend around the perimeter of the airport and basically run parallel to the East Branch of SLO Creek, rejoining Buckley Road approximately 366 meters (1200 feet) to the west of the existing intersection
- Apron and hangar addition to the north of the eastern end of Runway 11.
- Future extension of the east end of Runway 7.
- Future potential airport related development of the lands to the south of the northeast end of Runway 11.
- Other miscellaneous paved areas associated with taxiways.

The airport layout showing future improvements assumed in this drainage study is presented in Figure 2.

3. Hydrologic Analysis

There are two components to the hydrologic analysis for this study – the first is the hydrologic analyses to determine the flows in the East Branch of SLO Creek for the floodplain encroachment, and the second is to evaluate the increased runoff from the airport due to the proposed project development.

A. Hydrologic Analysis Associated with the East Branch SLO Creek

The hydrologic analysis to determine flows for the floodplain encroachment includes the modified flows from subbasin EB112a and EB112b (the two sub-basing incorporating the airport from the Zone 9 study); however, the post-project flows from EB112a and EB112b are attenuated to the pre-project peak flows. As a result, the 100-year peak flow in the East Branch of SLO Creek is not significantly changed from that presented in the Zone 9 study, thus making the floodplain encroachment analysis primarily a hydraulic analysis. The discussions presented herein regarding the hydrologic analysis apply to the increased runoff from the airport due to the proposed development.

The hydrologic analyses were performed using the HEC-HMS model prepared for the Zone 9 study. The airport lies in the East Branch basins of the San Luis Obispo Creek Watershed, as shown in Figure C-1 of Appendix A. Figure C-2 in Appendix A shows the sub-basin delineation for the East Branch of SLO Creek. The project is located in subbasin EB112, as shown in Figure C-2 of Appendix A. The sub-basins numbered in the 300's along with several numbered in the 100's drain into the reach of the East Branch

of SLO Creek under consideration for this study. The subbasins numbered in the 200's drain into the East Branch of SLO Creek approximately 2.4 kilometers (1.5 miles) downstream of the study area, and therefore do not affect this study.

Subbasin EB112 was modified for this study in order to estimate the increase in the storm runoff for the 2-, 10-, 25-, and 100-year return period storms resulting from the Runway 11 extension. Subbasin EB112 was rather large and did not properly model the future runoff as modeled in the Zone 9 study. Therefore, the subbasin was further subdivided into subbasins EB112a and EB112b. As shown in Figure 6, the project area lies in subbasin EB112a.

A detention basin is proposed to attenuate the increased peak flow for a 100-year flood event down to the pre-project conditions. The existing HEC-HMS model of the SLO Creek provided by the City of San Luis Obispo Department of Public Works was used for the preliminary sizing of the detention; however, a SWMM model was prepared for the actual design and sizing of the internal drainage features, including the detention basin, as discussed later in this section of the report.

(1) HEC-HMS Model Modifications East Branch of SLO Creek

Questa Engineering developed the HEC-HMS hydrologic model of the SLO Creek. Boyle Engineering Corporation performed the initial hydrologic study of the East Branch of SLO Creek in January 1999. Questa Engineering incorporated the Boyle Engineering study in the HEC-HMS model. However, the subbasin Curve Numbers used in the SCS hydrograph analyses in the HEC-HMS model were based on calibration and, therefore, differed from the curve numbers used by Boyle Engineering. The composite curve numbers used in the existing condition HEC-HMS model reflected the effect of all the developments in the basin.

The proposed improvements at the airport were limited to the subbasin EB112 of the East Branch basins. The 1.083 square Kilometers subbasin EB112 was divided into two subbasins 112a and 112b. The areas of subbasins 112a and 112b were 0.51 and 0.573 km^2, respectively. The subbasin 112a contained the most improvements, as shown in Figure 6. The area, curve number, lag time, and base flow basin parameters were estimated for subbasins 112a and 112b for the proposed conditions:

(a) Curve Number (CN)

A table of runoff curve numbers for selected agricultural, suburban, and urban land uses is presented in Appendix C. The HEC-HMS model used the existing conditions composite CN of 76 for subbasin 112. The CN of 95 was used for the proposed development. The composite CN of 81.0 and 76.5 was estimated for subbasins 112a and 112b, respectively.

(b) Lag Time

The lag time was estimated using Equation C-2 in Appendix C of the SLO County drainage plan. The lag exponent of 0.38 used in the East Branch basins was estimated using the data included in Table 2-2 of the City of San Luis Obispo Storm Drain Master Plan, Final Report, January 1999, prepared by Boyle Engineering Corporation. This exponent was used to compute future condition

lag times in subbasins 112a and 112b. Table 2-2 is given in Appendix A.

The lag time equation required the use of a basin roughness "n". The runoff from the subbasin 112a was proposed to enter a detention pond located in subbasin 112a. The runoff was considered to travel in a shallow channel and a concrete pipe. The velocities of flow were computed using Manning's equation to estimate the travel times in these segments. The composite roughness for the basin was estimated by weighing the roughness in each segment by the time of travel. The weighted roughness for subbasin 112a was estimated to be 0.026. The roughness of 0.037 for subbasin 112b did not change.

The maximum flow length and the length to the centroid were 1,006 m (3,300 feet) and 457 m (1558 feet), respectively for subbasin 112a. The maximum flow length of 1,672 m (5,484 feet) for subbasin 112b was equal to the maximum flow length of subbasin 112 in the existing model. The length to the centroid of 869 m (2,850 feet) was estimated for subbasin 112b.

The estimated average absolute channel slope for subbasin 112a was 0.016. The average absolute slope for subbasin 112b was equal to 0.0031.

With reference to Table 1, the lag times of 8.4 and 25 minutes were estimated for subbasins 112a and 112b, respectively. The basin lag computations are provided in Table 1.

Table 1. Lag Times for the Future Condition

Drainage Subbasin	L		L_{ca}		Slope (m/m, ft/ft)	Basin Roughness	Exponent	Lag Time (hours)
	(m)	(ft)	(m)	(ft)				
EB112a	1006	3301	457	1499	0.016	0.026	0.38	0.139
EB112b	1672	5486	869	2851	0.0031	0.037	0.38	0.419

(c) Base Flow

The base flow per unit area was equal to the existing conditions model base flow per unit area. The estimated base flows for subbasins 112a and 112b were 0.034 and 0.039 cubic meter per second (cms) (1.20 and 1.34 cubic feet per second (cfs)) for subbasins 112a and 112b, respectively.

(d) Initial Abstractions

The equation used to compute the initial abstractions was the same one used by Questa Engineering to develop the existing condition model. The initial abstraction values of 5.94 mm (0.23 in) and 7.79 mm (0.31 in) were estimated for subbasin EB112a and EB112b, respectively.

(e) Rainfall

The storm size, total rainfall, and rainfall distribution did not change in the proposed conditions model.

A comparison of the peak flows for the existing and proposed conditions for return periods of 2-, 10-, 25-, and 100-year is provided in Table 3.

B. XPSWMM Model for Internal Drainage

A combination of detention and drainage improvements are proposed to attenuate the increased peak flow for a 100-year flood event down to the existing conditions. In order to design the drainage features and determine the final sizing for the detention basin, XPSWMM models were prepared for the airport internal drainage. With the proposed drainage improvements and detention there are six exit points for internal drainage to leave the airport. There is one point where external drainage enters the airport – from the area to the north of the eastern end of the airport, northeast of Highway 227. These entrance and exit points are shown on Figures 11 and 12. Subdivision of the drainage subbasins are also shown on Figures 11 and 12 for the existing conditions and future conditions.

Total discharge into and exiting from the airport are shown in Table 2 below and demonstrate a net reduction in the peak flow from the airport:

Table 2. Pre and Post Project Internal Drainage From the Airport

Location	Existing Conditions		Future (with Drainage Improvements)	
	Inflow (cfs)	Outflow (cfs)	Inflow (cfs)	Outflow (cfs)
Northeast offsite inflow	90.4		42.6	
East Drainage		90.4		42.6
KL Drainage		89.1		89.5
Collet Drain		76.0		57.4
Northwest Detention Pond		31.6		103.3
I2 Drainage		56.3		39.3
JM/West		95.9		96.6
Total		**439.3**		**428.7**

(1) Detention Basin

A detention basin, that is named the northwest detention basin, is proposed to attenuate the flow hydrograph from the internal drainage. The outflow structure consists of a 42-inch pipe with a

restrictor plate to 39-inches. The outflow from the detention pond varies with the submergence of the outflow pipe. Additional detention will be necessary to the northeast of Highway 227 to lower the water surface in that area to the pre-project levels as a result of the northeast apron and hangar area improvements. Currently, there are no buildings that would be affected by the increased storage upstream of Highway 227 resulting from this project and the filling of an existing area on the airport that provides detention.

Table 3 provides the stage-volume curve for the proposed detention ponds.

Table 3. Stage-Volume Data Detention

Northwest Detention Basin					
Elevation NAVD 88		**Area**		**Volume**	
Meter	**Feet**	**m^2**	**Ft^2**	**$1000m^3$**	**Acre-ft**
42.98	141.0	5059	54450	0	0
44.50	146.0	6293	67736	8.6	7.0
46.02	151.0	7527	81022	19.2	15.6
Off-Site Detention					
61.64	202.24	161.8	1742	0	0
62.25	204.24	566.5	3098	0.22	.18
62.56	205.24	768.9	8276	0.42	.34
62.86	206.24	971	10454	0.90	.73
63.17	207.24	1173.6	12632	1.86	1.51
63.47	208.24	1375.9	14810	3.79	3.07

4. Hydraulic Analysis

A. Internal Drainage

Hydraulic design of the internal drainage features – pipe sizes, detention pond sizing, and other conveyance features – were evaluated and designed for the improvements using the XPSWMM Model. The increased runoff from the development is proposed to be mitigated with two detention ponds and drainage changes and improvements as listed below:

- Northwest Detention Basin – A new detention basin pond will be located on the airport to the north of the proposed extension of the eastern end of Runway 11.
- The drainage on the eastern portion of the airport is proposed to be reconfigured to route

drainage from the new apron and hangar areas to the new northwest detention basin.

- A new storm drain line extending from the new northeast apron and hangar area that will run parallel to and to the north of Runway 11. These storm drain line will terminate at the new northwest detention basin. This storm drain will convey runoff from the eastern portion of the airport, Collet drainage, a portion of Runway 7, a portion of the business park, and Runway 11.
- Land to the south of the Runway 11 extension will drain under the Santa Fe Road into the East Branch SLO bypass channel. The detention basin currently located to the south of the Runway 11 extension will eventually be filled, as with re-routing of the runoff between the two runways into the new detention pond, there will no longer be a need for this existing detention pond.
- A portion of the Collet drainage on the northeastern portion of the airport is proposed to be reconfigured to route drainage to the new northwest detention pond.
- Drainage in the center portion of the airport between the two runways is proposed to be routed to the northwest detention pond.
- Northeast Detention Basin – The northeast detention basin is located off the airport proper to the north Highway 227 at the eastern end of the airport. A depression in the area of the hangar and apron additions will be removed, which results in additional water detention upstream of Highway 227. Future development of the lands to the north of Highway 227 (by others) will result in the need to provide additional detention to the north.
- The remaining drainage from eastern portion of the airport (excluding the new apron and hangar area) and the inflow from the north of Highway 227 that currently passes through the airport will continue to drain under Buckley Road. The culvert under Buckley Road is to be constricted to reduce peak flows to the south.

B. East Branch SLO Creek

An existing conditions HEC-RAS hydraulic model was provided by the City of San Luis Obispo Department of Public Works for use in this drainage study. This HEC-RAS model was modified by Mead & Hunt to evaluate the floodplain encroachment for the proposed post-project Alternative Plans 1, 2, and 3. Stations for the HEC-RAS cross-sections through the proposed project area are shown in Figure 3.

(1) Existing Conditions HEC-RAS Model

The existing HEC-RAS model is a generalized mathematical computer model that was developed for the whole watershed of the SLO Creek, as shown in Figure C-1 of Appendix A. It is a one-dimensional hydraulic model used to predict flood water surface elevations along SLO Creek watershed.

The upstream end of the project area is on the East Branch of SLO Creek at the confluence of Acacia Creek, Orcutt Creek, and the upstream reach of East Branch of SLO Creek. A computer run was performed for the existing condition (without the proposed floodplain encroachment) to determine the baseline 100-year floodplain limits (from HEC-RAS River Station 5970.908 to Station 4781.163) within the project area.

A plot of the existing 100-year floodplain is shown in Figure 7 with the proposed development superimposed over the existing floodplain. The width of the 100-year floodplain contracts to approximately 70 meters (230 feet) at HEC-RAS River Station 5295.824. The width of the floodplain again expands downstream from this section. The existing conditions model as provided by the City of San Luis Obispo does not take into account gradual contraction (narrowing of the channel as the water approaches the bridge) and expansion (widening of the channel as the water travels downstream of the bridge) upstream and downstream of HEC-RAS Station 5295.824 where the stream passes under Santa Fe Road. Therefore, the effective flow area was redelineated to account for the expansion and contraction of the flows. The left overbank elevations near the channel and left bank contours upstream of the Santa Fe Bridge indicate that the effective flow area in the left overbank is close to the channel. The existing conditions model was modified by Mead & Hunt from HEC-RAS River Station 5970.908 to Station 4967.967 to include the ineffective flow areas in the channel cross-sections. This revised model was then used as the existing conditions model for comparison of the alternative mitigation measures.

(2) HEC-RAS Modeling and Floodplain Mitigation

The proposed Santa Fe Road and Runway 11 Extension would encroach in the floodplain resulting in an increase in the 100-year water surface elevations in the East Branch of SLO Creek. The proposed conditions HEC-RAS model was developed by modifying the existing conditions HEC-RAS model to include the encroachment by the proposed Santa Fe Road. The HEC-RAS model that was developed for the proposed post-project conditions was used to estimate the increase in the 100-year water surface elevation due to the encroachment of the Santa Fe Road to the existing 100-year floodplain.

(3) Proposed Conditions HEC-RAS Models

The new alignment of Santa Fe Road and Runway 11 Extension would encroach in the floodplain. The encroachments increased the existing 100-year water surface elevations and, therefore, require mitigation to reduce the increase in water surface elevations to the permissible limit given in the drainage manual. A comparison of the 2-, 10-, 25-, and 100-year water surface elevations for the existing and encroached conditions is provided in Tables 4 through 7.

Table 4. Effect of Santa Fe Road Encroachment on 2-Year Water Surface Elevations

Reach	River Sta	Profile	Existing				Encroachments					
			Q Total		W.S. Elev		Q Total		W.S. Elev		Difference	
			(cms)	(cfs)	(m)	(ft)	(cms)	(cfs)	(m)	(ft)	(m)	(ft)
East Branch Above	6683.765	Q2	29.2	1031.19	48.07	157.71	29.2	1031.19	48.07	157.71	0	0.00
East Branch Above	6553.027	Q2	29.2	1031.19	47.51	155.87	29.2	1031.19	47.51	155.87	0	0.00
East Branch Above	6440.974	Q2	29.2	1031.19	46.89	153.84	29.2	1031.19	46.89	153.84	0	0.00
East Branch Above	6297.497	Q2	29.2	1031.19	46.06	151.12	29.2	1031.19	46.06	151.12	0	0.00
East Branch Above	6188.502	Q2	29.2	1031.19	45.40	148.95	29.2	1031.19	45.40	148.95	0	0.00
East Branch Above	6085.603	Q2	29.2	1031.19	44.53	146.10	29.2	1031.19	44.53	146.10	0	0.00
East Branch Above	5997.066	Q2	29.2	1031.19	43.44	142.52	29.2	1031.19	43.44	142.52	0	0.00
East Branch Above	5992		Bridge				Bridge			0.00	0	0.00
East Branch Above	5985.753	Q2	29.2	1031.19	43.43	142.49	29.2	1031.19	43.43	142.49	0	0.00
East Branch Below	5970.908	Q2	40.1	1416.12	43.31	142.09	40.1	1416.12	43.31	142.09	0	0.00
East Branch Below	5897.261	Q2	40.1	1416.12	42.99	141.04	40.1	1416.12	42.99	141.04	0	0.00
East Branch Below	5804.015	Q2	40.1	1416.12	42.50	139.44	40.1	1416.12	42.50	139.44	0	0.00
East Branch Below	5656.604	Q2	40.1	1416.12	42.09	138.09	40.1	1416.12	42.09	138.09	0	0.00
East Branch Below	5567.014	Q2	40.1	1416.12	41.84	137.27	40.1	1416.12	41.85	137.30	0.01	0.03
East Branch Below	5430.013	Q2	40.1	1416.12	41.39	135.79	40.1	1416.12	41.39	135.79	0	0.00
East Branch Below	5295.824	Q2	40.1	1416.12	40.92	134.25	40.1	1416.12	40.92	134.25	0	0.00
East Branch Below	5184.043	Q2	40.1	1416.12	40.71	133.56	40.1	1416.12	40.71	133.56	0	0.00
East Branch Below	5139.005	Q2	40.1	1416.12	40.61	133.23	40.1	1416.12	40.61	133.23	0	0.00
East Branch Below	5046.211	Q2	40.1	1416.12	40.30	132.22	40.1	1416.12	40.30	132.22	0	0.00
East Branch Below	4967.967	Q2	40.1	1416.12	39.74	130.38	40.1	1416.12	39.74	130.38	0	0.00
East Branch Below	4875.326	Q2	40.1	1416.12	39.24	128.74	40.1	1416.12	39.24	128.74	0	0.00
East Branch Below	4781.163	Q2	40.1	1416.12	38.93	127.72	40.1	1416.12	38.93	127.72	0	0.00
East Branch Below	4694.651	Q2	40.1	1416.12	38.59	126.61	40.1	1416.12	38.59	126.61	0	0.00
East Branch Below	4604.479	Q2	40.1	1416.12	38.32	125.72	40.1	1416.12	38.32	125.72	0	0.00
East Branch Below	4445.673	Q2	40.1	1416.12	37.40	122.70	40.1	1416.12	37.40	122.70	0	0.00
East Branch Below	4317.142	Q2	40.1	1416.12	37.00	121.39	40.1	1416.12	37.00	121.39	0	0.00

Table 5. Effect of Santa Fe Road Encroachment on 10-Year Water Surface Elevations

Reach	River Sta	Profile	Existing				Encroachments					
			Q Total		W.S. Elev		Q Total		W.S. Elev		Difference	
			(cms)	(cfs)	(m)	(ft)	(cms)	(cfs)	(m)	(ft)	(m)	(ft)
East Branch Above	6683.765	Q10	60.6	2140.07	48.82	160.17	60.6	2140.07	48.82	160.17	0	0.00
East Branch Above	6553.027	Q10	60.6	2140.07	48.31	158.50	60.6	2140.07	48.31	158.50	0	0.00
East Branch Above	6440.974	Q10	60.6	2140.07	47.60	156.17	60.6	2140.07	47.60	156.17	0	0.00
East Branch Above	6297.497	Q10	60.6	2140.07	46.69	153.18	60.6	2140.07	46.70	153.21	0.01	0.03
East Branch Above	6188.502	Q10	60.6	2140.07	46.36	152.10	60.6	2140.07	46.38	152.16	0.02	0.07
East Branch Above	6085.603	Q10	60.6	2140.07	45.71	149.97	60.6	2140.07	45.76	150.13	0.05	0.16
East Branch Above	5997.066	Q10	60.6	2140.07	45.01	147.67	60.6	2140.07	45.05	147.80	0.04	0.13
East Branch Above	5992		Bridge				Bridge				0	0.00
East Branch Above	5985.753	Q10	60.6	2140.07	44.47	145.90	60.6	2140.07	44.53	146.10	0.06	0.20
East Branch Below	5970.908	Q10	82.6	2916.99	44.37	145.57	82.6	2916.99	44.45	145.83	0.08	0.26
East Branch Below	5897.261	Q10	82.6	2916.99	44.05	144.52	82.6	2916.99	44.24	145.14	0.19	0.62
East Branch Below	5804.015	Q10	82.6	2916.99	43.49	142.68	82.6	2916.99	43.70	143.37	0.21	0.69
East Branch Below	5656.604	Q10	82.6	2916.99	42.91	140.78	82.6	2916.99	43.20	141.73	0.29	0.95
East Branch Below	5567.014	Q10	82.6	2916.99	42.61	139.80	82.6	2916.99	42.86	140.62	0.25	0.82
East Branch Below	5430.013	Q10	82.6	2916.99	42.17	138.35	82.6	2916.99	42.29	138.75	0.12	0.39
East Branch Below	5295.824	Q10	82.6	2916.99	41.61	136.52	82.6	2916.99	41.73	136.91	0.12	0.39
East Branch Below	5184.043	Q10	82.6	2916.99	41.33	135.60	82.6	2916.99	41.51	136.19	0.18	0.59
East Branch Below	5139.005	Q10	82.6	2916.99	41.27	135.40	82.6	2916.99	41.42	135.89	0.15	0.49
East Branch Below	5046.211	Q10	82.6	2916.99	41.07	134.74	82.6	2916.99	41.19	135.14	0.12	0.39
East Branch Below	4967.967	Q10	82.6	2916.99	40.70	133.53	82.6	2916.99	40.70	133.53	0	0.00
East Branch Below	4875.326	Q10	82.6	2916.99	40.36	132.41	82.6	2916.99	40.36	132.41	0	0.00
East Branch Below	4781.163	Q10	82.6	2916.99	40.08	131.50	82.6	2916.99	40.08	131.50	0	0.00
East Branch Below	4694.651	Q10	82.6	2916.99	39.74	130.38	82.6	2916.99	39.74	130.38	0	0.00
East Branch Below	4604.479	Q10	82.6	2916.99	39.42	129.33	82.6	2916.99	39.42	129.33	0	0.00
East Branch Below	4445.673	Q10	82.6	2916.99	38.05	124.84	82.6	2916.99	38.05	124.84	0	0.00
East Branch Below	4317.142	Q10	82.6	2916.99	37.72	123.75	82.6	2916.99	37.72	123.75	0	0.00

Table 6. Effect of Santa Fe Road Encroachment on 25-Year Water Surface Elevations

Reach	River Sta	Profile	Existing				Encroachments				Difference	
			Q Total		W.S. Elev		Q Total		W.S. Elev			
			(cms)	(cfs)	(m)	(ft)	(cms)	(cfs)	(m)	(ft)	(m)	(ft)
East Branch Above	6683.765	Q25	83.1	2934.65	49.07	160.99	83.1	2934.65	49.07	160.99	0	0.00
East Branch Above	6553.027	Q25	83.1	2934.65	48.60	159.45	83.1	2934.65	48.60	159.45	0	0.00
East Branch Above	6440.974	Q25	83.1	2934.65	47.91	157.18	83.1	2934.65	47.91	157.18	0	0.00
East Branch Above	6297.497	Q25	83.1	2934.65	47.07	154.43	83.1	2934.65	47.07	154.43	0	0.00
East Branch Above	6188.502	Q25	83.1	2934.65	46.78	153.48	83.1	2934.65	46.78	153.48	0	0.00
East Branch Above	6085.603	Q25	83.1	2934.65	46.17	151.48	83.1	2934.65	46.16	151.44	-0.01	-0.03
East Branch Above	5997.066	Q25	83.1	2934.65	45.40	148.95	83.1	2934.65	45.48	149.21	0.08	0.26
East Branch Above	5992		Bridge				Bridge				0.00	0.00
East Branch Above	5985.753	Q25	83.1	2934.65	44.70	146.65	83.1	2934.65	44.84	147.11	0.14	0.46
East Branch Below	5970.908	Q25	112.2	3962.31	44.60	146.33	112.2	3962.31	44.79	146.95	0.19	0.62
East Branch Below	5897.261	Q25	112.2	3962.31	44.24	145.14	112.2	3962.31	44.65	146.49	0.41	1.35
East Branch Below	5804.015	Q25	112.2	3962.31	43.76	143.57	112.2	3962.31	44.23	145.11	0.47	1.54
East Branch Below	5656.604	Q25	112.2	3962.31	43.14	141.54	112.2	3962.31	43.67	143.27	0.53	1.74
East Branch Below	5567.014	Q25	112.2	3962.31	42.80	140.42	112.2	3962.31	43.20	141.73	0.40	1.31
East Branch Below	5430.013	Q25	112.2	3962.31	42.46	139.30	112.2	3962.31	42.61	139.80	0.15	0.49
East Branch Below	5295.824	Q25	112.2	3962.31	41.81	137.17	112.2	3962.31	41.97	137.70	0.16	0.52
East Branch Below	5184.043	Q25	112.2	3962.31	41.46	136.02	112.2	3962.31	41.71	136.84	0.25	0.82
East Branch Below	5139.005	Q25	112.2	3962.31	41.37	135.73	112.2	3962.31	41.59	136.45	0.22	0.72
East Branch Below	5046.211	Q25	112.2	3962.31	41.12	134.91	112.2	3962.31	41.30	135.50	0.18	0.59
East Branch Below	4967.967	Q25	112.2	3962.31	40.88	134.12	112.2	3962.31	40.94	134.32	0.06	0.20
East Branch Below	4875.326	Q25	112.2	3962.31	40.57	133.10	112.2	3962.31	40.59	133.17	0.02	0.07
East Branch Below	4781.163	Q25	112.2	3962.31	40.19	131.86	112.2	3962.31	40.20	131.89	0.01	0.03
East Branch Below	4694.651	Q25	112.2	3962.31	39.94	131.04	112.2	3962.31	39.94	131.04	0	0.00
East Branch Below	4604.479	Q25	112.2	3962.31	39.66	130.12	112.2	3962.31	39.66	130.12	0	0.00
East Branch Below	4445.673	Q25	112.2	3962.31	38.42	126.05	112.2	3962.31	38.42	126.05	0	0.00
East Branch Below	4317.142	Q25	112.2	3962.31	37.82	124.08	112.2	3962.31	37.82	124.08	0	0.00

Table 7. Effect of Santa Fe Road Encroachment on 100-Year Water Surface Elevations

Reach	River Sta	Profile	Existing				Encroachment				Difference	
			Q Total		W.S. Elev		Q Total		W.S. Elev			
			(cms)	(cfs)	(m)	(ft)	(cms)	(cfs)	(m)	(ft)	(m)	(ft)
East Branch Above	6683.765	Q100	114.6	4047.06	49.31	161.78	114.6	4047.06	49.31	161.78	0	0.00
East Branch Above	6553.027	Q100	114.6	4047.06	48.90	160.43	114.6	4047.06	48.91	160.47	0.01	0.03
East Branch Above	6440.974	Q100	114.6	4047.06	48.14	157.94	114.6	4047.06	48.14	157.94	0	0.00
East Branch Above	6297.497	Q100	114.6	4047.06	47.38	155.45	114.6	4047.06	47.38	155.45	0	0.00
East Branch Above	6188.502	Q100	114.6	4047.06	47.06	154.40	114.6	4047.06	47.06	154.40	0	0.00
East Branch Above	6085.603	Q100	114.6	4047.06	46.49	152.53	114.6	4047.06	46.5	152.56	0.01	0.03
East Branch Above	5997.066	Q100	114.6	4047.06	45.89	150.56	114.6	4047.06	45.94	150.72	0.05	0.16
East Branch Above	5992		Bridge				Bridge			0.00	0.00	0.00
East Branch Above	5985.753	Q100	114.6	4047.06	45.21	148.33	114.6	4047.06	45.32	148.69	0.11	0.36
East Branch Below	5970.908	Q100	153.8	5431.40	44.84	147.11	153.8	5431.40	45.11	148.00	0.27	0.89
East Branch Below	5897.261	Q100	153.8	5431.40	44.44	145.80	153.8	5431.40	44.98	147.57	0.54	1.77
East Branch Below	5804.015	Q100	153.8	5431.40	43.96	144.23	153.8	5431.40	44.52	146.06	0.56	1.84
East Branch Below	5656.604	Q100	153.8	5431.40	43.35	142.22	153.8	5431.40	43.97	144.26	0.62	2.03
East Branch Below	5567.014	Q100	153.8	5431.40	42.97	140.98	153.8	5431.40	43.44	142.52	0.47	1.54
East Branch Below	5430.013	Q100	153.8	5431.40	42.68	140.03	153.8	5431.40	42.87	140.65	0.19	0.62
East Branch Below	5295.824	Q100	153.8	5431.40	42.04	137.93	153.8	5431.40	42.26	138.65	0.22	0.72
East Branch Below	5184.043	Q100	153.8	5431.40	41.61	136.52	153.8	5431.40	41.96	137.66	0.35	1.15
East Branch Below	5139.005	Q100	153.8	5431.40	41.50	136.15	153.8	5431.40	41.8	137.14	0.30	0.98
East Branch Below	5046.211	Q100	153.8	5431.40	41.22	135.24	153.8	5431.40	41.46	136.02	0.24	0.79
East Branch Below	4967.967	Q100	153.8	5431.40	40.97	134.42	153.8	5431.40	41.09	134.81	0.12	0.39
East Branch Below	4875.326	Q100	153.8	5431.40	40.68	133.46	153.8	5431.40	40.75	133.69	0.07	0.23
East Branch Below	4781.163	Q100	153.8	5431.40	40.26	132.09	153.8	5431.40	40.28	132.15	0.02	0.07
East Branch Below	4694.651	Q100	153.8	5431.40	40.06	131.43	153.8	5431.40	40.06	131.43	0	0.00
East Branch Below	4604.479	Q100	153.8	5431.40	39.69	130.22	153.8	5431.40	39.69	130.22	0	0.00
East Branch Below	4445.673	Q100	153.8	5431.40	38.71	127.00	153.8	5431.40	38.71	127.00	0	0.00
East Branch Below	4317.142	Q100	153.8	5431.40	37.94	124.47	153.8	5431.40	37.94	124.47	0	0.00

(4) Floodplain Mitigation

The floodplain encroachment resulting from the Santa Fe Road relocation due to the proposed extension of Runway 11 will increase the 100-year water surface elevations in the East Branch of SLO Creek. Since flow in this region is subcritical, the result of the encroachment will be a backwater effect, increasing the water surface elevations at and upstream of the proposed encroachment. Therefore, alternative mitigation measures are evaluated in this report to alleviate the increased flooding on the East Branch of SLO Creek resulting from the floodplain encroachment.

The concept of the proposed mitigation is to provide flow conveyance area either in the remaining floodplain or by bypassing the remaining floodplain to replenish the lost flow conveyance capacity due to the floodplain encroachment. The criteria for mitigation are based on the Special Floodplain Management Zone Regulations presented in the Drainage Design Manual of the *Waterway Management Plan*, which states that floodplain encroachments not cause an increase in the 100-year flood water surface elevation greater than 64 mm (2.5 inches). The following three alternatives are proposed to reduce the water surface elevation increases to less than the allowable limit of 64 mm (2.5 inches).

- Increase conveyance of the left overbank
- Divert the flow in the old East Branch of SLO Creek channel
- Divert the flow using reinforced concrete pipe (RCP)

Since all three of these alternatives are providing flood conveyance essentially equal to that removed by the conveyance, the downstream impacts are expected to be minimal. Those minimal impacts are expected to include a small degree of lost attenuation from the non-conveyance floodplain area removed by the encroachment. However, since this occurs over a relatively short reach of the channel, the effects are considered negligible.

(a) Left Overbank Conveyance for Alternative Plan 1

A trapezoidal channel improvement with a bottom width of 15 m (50 feet), 3H:1V side slopes and longitudinal slope of 0.003 is proposed on the left overbank between the proposed Santa Fe Road alignment and the East Branch of SLO Creek between cross-sections 5897.261 and 4875.326. The bottom elevation at the most upstream cross-section at Station 5897.261 was maintained at 41.5 m (136.1 feet) NAVD88. The depth of the channel would vary with the left overbank ground elevations at each cross-section as given in Table 8.

Table 8. Channel Improvement Data for Alternative Plan 1

Alternative 1									
Reach	River Sta	Top Elev.	Bottom Elev.	Depth of Channel Improvement	Bottom Width	Topwidth	Depth of Channel Improvement	Bottom Width	Topwidth
		(m)	(m)	(m)	(m)	(m)	(ft)	(ft)	(ft)
East Branch Below	5897.261	43.85	41.48	2.37	15.00	29.22	7.77	49.20	**95.84**
East Branch Below	5804.015	43.54	41.22	2.32	15.00	28.92	7.61	49.20	**94.86**
East Branch Below	5656.604	43.11	40.78	2.33	15.00	28.98	7.64	49.20	**95.05**
East Branch Below	5567.014	42.88	40.51	2.37	15.00	29.22	7.77	49.20	**95.84**
East Branch Below	5430.013	42.10	40.10	2.00	15.00	27.00	6.56	49.20	**88.56**
East Branch Below	5295.824	41.74	39.70	2.04	15.00	27.24	6.69	49.20	**89.35**
East Branch Below	5184.043	41.13	39.36	1.77	15.00	25.62	5.81	49.20	**84.03**
East Branch Below	5139.005	41.40	39.22	2.18	15.00	28.08	7.15	49.20	**92.10**
East Branch Below	5046.211	39.81	38.95	0.86	15.00	20.16	2.82	49.20	**66.12**
East Branch Below	4967.967	40.36	38.71	1.65	15.00	24.90	5.41	49.20	**81.67**
East Branch Below	4875.326	40.22	38.43	1.79	15.00	25.74	5.87	49.20	**84.43**

Reach	River Sta	Station of Min. Channel Elev. of SLO Creek	Centerline Sta. of Channel Improvement	Distance between Sta. of Min. Channel Elev. of SLO Creek and Centerline Sta. of Channel Improvement	
		(m)	(m)	(m)	(ft)
East Branch Below	5897.261	389.89	353.00	36.89	121.00
East Branch Below	5804.015	269.42	244.00	25.42	83.38
East Branch Below	5656.604	289.62	238.00	51.62	169.31
East Branch Below	5567.014	307.78	274.00	33.78	110.80
East Branch Below	5430.013	343.45	314.00	29.45	96.60
East Branch Below	5295.824	285.25	244.00	41.25	135.30
East Branch Below	5184.043	188.26	158.00	30.26	99.25
East Branch Below	5139.005	202.53	167.00	35.53	116.54
East Branch Below	5046.211	411.01	344.00	67.01	219.79
East Branch Below	4967.967	462.61	378.00	84.61	277.52
East Branch Below	4875.326	511.75	399.00	112.75	369.82

Note: The above values given are only intended for the Conceptual Level of Design for Alternative Plan 1

The total length of the channel is approximately 1,000 meters (3,280 feet). The left bank channel improvement, which starts just downstream of Station 5897.261, is mainly to increase the conveyance of the existing East Branch of SLO Creek to compensate for the loss of conveyance that is caused by the encroachment of Santa Fe Road in the floodplain. This alternative measure will maintain the 100-year water surface elevations within existing conditions or within the allowable increase of water surface of 64 mm (2.5 inches). The trapezoidal channel improvement would compensate for the conveyance lost due to the encroachment in the floodplain and would be connected to the East Branch of SLO Creek at the downstream end to drain it completely after the flooding of the left overbank has receded. The left overbank channel improvement in the model was developed using the channel modification routine in HEC-RAS. The Manning's "n" roughness coefficient in the left overbank, including the left bank channel, was not changed.
As a result of the HEC-RAS computer model runs, a comparison of the existing conditions 2-, 10-, 25-, and 100-year water surface elevations and the proposed conditions for Alternative Plan 1 is given in Tables 9 to 12.

Table 9. Comparison of 2-Year Peak Flow and Water Surface Profile for Alternative Plan 1

Reach	River Sta	Profile	Existing				Alternative 1					
			Q Total		W.S. Elev		Q Total		W.S. Elev		Difference	
			(cms)	(cfs)	(m)	(ft)	(cms)	(cfs)	(m)	(ft)	(m)	(ft)
East Branch Above	6683.765	Q2	29.2	1031.19	48.07	157.71	29.2	1031.19	48.07	157.71	0	0.00
East Branch Above	6553.027	Q2	29.2	1031.19	47.51	155.87	29.2	1031.19	47.51	155.87	0	0.00
East Branch Above	6440.974	Q2	29.2	1031.19	46.89	153.84	29.2	1031.19	46.89	153.84	0	0.00
East Branch Above	6297.497	Q2	29.2	1031.19	46.06	151.12	29.2	1031.19	46.06	151.12	0	0.00
East Branch Above	6188.502	Q2	29.2	1031.19	45.40	148.95	29.2	1031.19	45.40	148.95	0	0.00
East Branch Above	6085.603	Q2	29.2	1031.19	44.53	146.10	29.2	1031.19	44.51	146.03	-0.02	-0.07
East Branch Above	5997.066	Q2	29.2	1031.19	43.44	142.52	29.2	1031.19	43.63	143.14	0.19	0.62
East Branch Above	5992		Bridge				Bridge				0.00	0.00
East Branch Above	5985.753	Q2	29.2	1031.19	43.43	142.49	29.2	1031.19	43.05	141.24	-0.38	-1.25
East Branch Below	5970.908	Q2	40.1	1416.12	43.31	142.09	40.1	1416.12	42.49	139.40	-0.82	-2.69
East Branch Below	5897.261	Q2	40.1	1416.12	42.99	141.04	40.1	1416.12	42.30	138.78	-0.69	-2.26
East Branch Below	5804.015	Q2	40.1	1416.12	42.50	139.44	40.1	1416.12	41.87	137.37	-0.63	-2.07
East Branch Below	5656.604	Q2	40.1	1416.12	42.09	138.09	40.1	1416.12	41.48	136.09	-0.61	-2.00
East Branch Below	5567.014	Q2	40.1	1416.12	41.84	137.27	40.1	1416.12	41.24	135.30	-0.60	-1.97
East Branch Below	5430.013	Q2	40.1	1416.12	41.39	135.79	40.1	1416.12	40.86	134.05	-0.53	-1.74
East Branch Below	5295.824	Q2	40.1	1416.12	40.92	134.25	40.1	1416.12	40.43	132.64	-0.49	-1.61
East Branch Below	5184.043	Q2	40.1	1416.12	40.71	133.56	40.1	1416.12	40.24	132.02	-0.47	-1.54
East Branch Below	5139.005	Q2	40.1	1416.12	40.61	133.23	40.1	1416.12	40.15	131.73	-0.46	-1.51
East Branch Below	5046.211	Q2	40.1	1416.12	40.30	132.22	40.1	1416.12	39.89	130.87	-0.41	-1.35
East Branch Below	4967.967	Q2	40.1	1416.12	39.74	130.38	40.1	1416.12	39.43	129.36	-0.31	-1.02
East Branch Below	4875.326	Q2	40.1	1416.12	39.24	128.74	40.1	1416.12	39.17	128.51	-0.07	-0.23
East Branch Below	4781.163	Q2	40.1	1416.12	38.93	127.72	40.1	1416.12	38.93	127.72	0	0.00
East Branch Below	4694.651	Q2	40.1	1416.12	38.59	126.61	40.1	1416.12	38.59	126.61	0	0.00
East Branch Below	4604.479	Q2	40.1	1416.12	38.32	125.72	40.1	1416.12	38.32	125.72	0	0.00
East Branch Below	4445.673	Q2	40.1	1416.12	37.40	122.70	40.1	1416.12	37.40	122.70	0	0.00
East Branch Below	4317.142	Q2	40.1	1416.12	37.00	121.39	40.1	1416.12	37.00	121.39	0	0.00

Table 10. Comparison of 10-Year Peak Flow and Water Surface Profile for Alternative Plan 1

Reach	River Sta	Profile	Existing				Alternative 1				Difference	
			Q Total		W.S. Elev		Q Total		W.S. Elev			
			(cms)	(cfs)	(m)	(ft)	(cms)	(cfs)	(m)	(ft)	(m)	(ft)
East Branch Above	6683.77	Q10	60.60	2140.07	48.82	160.17	60.60	2140.07	48.82	160.17	0.00	0.00
East Branch Above	6553.03	Q10	60.60	2140.07	48.31	158.50	60.60	2140.07	48.32	158.53	0.01	0.03
East Branch Above	6440.97	Q10	60.60	2140.07	47.60	156.17	60.60	2140.07	47.61	156.20	0.01	0.03
East Branch Above	6297.50	Q10	60.60	2140.07	46.69	153.18	60.60	2140.07	46.68	153.15	-0.01	-0.03
East Branch Above	6188.50	Q10	60.60	2140.07	46.36	152.10	60.60	2140.07	46.33	152.00	-0.03	-0.10
East Branch Above	6085.60	Q10	60.60	2140.07	45.71	149.97	60.60	2140.07	45.61	149.64	-0.10	-0.33
East Branch Above	5997.07	Q10	60.60	2140.07	45.01	147.67	60.60	2140.07	44.01	144.39	-1.00	-3.28
East Branch Above	5992.00		Bridge				Bridge				0.00	0.00
East Branch Above	5985.75	Q10	60.60	2140.07	44.47	145.90	60.60	2140.07	43.95	144.19	-0.52	-1.71
East Branch Below	5970.91	Q10	82.60	2916.99	44.37	145.57	82.60	2916.99	43.08	141.34	-1.29	-4.23
East Branch Below	5897.26	Q10	82.60	2916.99	44.05	144.52	82.60	2916.99	42.87	140.65	-1.18	-3.87
East Branch Below	5804.02	Q10	82.60	2916.99	43.49	142.68	82.60	2916.99	42.44	139.24	-1.05	-3.44
East Branch Below	5656.60	Q10	82.60	2916.99	42.91	140.78	82.60	2916.99	42.10	138.12	-0.81	-2.66
East Branch Below	5567.01	Q10	82.60	2916.99	42.61	139.80	82.60	2916.99	41.82	137.20	-0.79	-2.59
East Branch Below	5430.01	Q10	82.60	2916.99	42.17	138.35	82.60	2916.99	41.45	135.99	-0.72	-2.36
East Branch Below	5295.82	Q10	82.60	2916.99	41.61	136.52	82.60	2916.99	41.08	134.78	-0.53	-1.74
East Branch Below	5184.04	Q10	82.60	2916.99	41.33	135.60	82.60	2916.99	40.90	134.19	-0.43	-1.41
East Branch Below	5139.01	Q10	82.60	2916.99	41.27	135.40	82.60	2916.99	40.80	133.86	-0.47	-1.54
East Branch Below	5046.21	Q10	82.60	2916.99	41.07	134.74	82.60	2916.99	40.60	133.20	-0.47	-1.54
East Branch Below	4967.97	Q10	82.60	2916.99	40.70	133.53	82.60	2916.99	40.35	132.38	-0.35	-1.15
East Branch Below	4875.33	Q10	82.60	2916.99	40.36	132.41	82.60	2916.99	40.26	132.09	-0.10	-0.33
East Branch Below	4781.16	Q10	82.60	2916.99	40.08	131.50	82.60	2916.99	40.08	131.50	0.00	0.00
East Branch Below	4694.65	Q10	82.60	2916.99	39.74	130.38	82.60	2916.99	39.74	130.38	0.00	0.00
East Branch Below	4604.48	Q10	82.60	2916.99	39.42	129.33	82.60	2916.99	39.42	129.33	0.00	0.00
East Branch Below	4445.67	Q10	82.60	2916.99	38.05	124.84	82.60	2916.99	38.05	124.84	0.00	0.00
East Branch Below	4317.14	Q10	82.60	2916.99	37.72	123.75	82.60	2916.99	37.72	123.75	0.00	0.00

Table 11. Comparison of 25-Year Peak Flow and Water Surface Profile for Alternative Plan 1

Reach	River Sta	Profile	Existing				Alternative 1				Difference	
			Q Total		W.S. Elev		Q Total		W.S. Elev			
			(cms)	(cfs)	(m)	(ft)	(cms)	(cfs)	(m)	(ft)	(m)	(ft)
East Branch Above	6683.765	Q25	83.1	2934.80	49.07	160.99	83.1	2934.80	49.07	160.99	0.00	0.00
East Branch Above	6553.027	Q25	83.1	2934.80	48.60	159.45	83.1	2934.80	48.60	159.45	0.00	0.00
East Branch Above	6440.974	Q25	83.1	2934.80	47.91	157.18	83.1	2934.80	47.91	157.18	0.00	0.00
East Branch Above	6297.497	Q25	83.1	2934.80	47.07	154.43	83.1	2934.80	47.08	154.46	0.01	0.03
East Branch Above	6188.502	Q25	83.1	2934.80	46.78	153.48	83.1	2934.80	46.78	153.48	0.00	0.00
East Branch Above	6085.603	Q25	83.1	2934.80	46.17	151.48	83.1	2934.80	46.21	151.61	0.04	0.13
East Branch Above	5997.066	Q25	83.1	2934.80	45.40	148.95	83.1	2934.80	45.20	148.29	-0.20	-0.66
East Branch Above	5992		Bridge				Bridge				0.00	0.00
East Branch Below	5970.908	Q25	112.2	3962.51	44.60	146.33	112.2	3962.51	43.48	142.65	-1.12	-3.67
East Branch Below	5897.261	Q25	112.2	3962.51	44.24	145.14	112.2	3962.51	43.18	141.67	-1.06	-3.48
East Branch Below	5804.015	Q25	112.2	3962.51	43.76	143.57	112.2	3962.51	42.75	140.26	-1.01	-3.31
East Branch Below	5656.604	Q25	112.2	3962.51	43.14	141.54	112.2	3962.51	42.42	139.17	-0.72	-2.36
East Branch Below	5567.014	Q25	112.2	3962.51	42.80	140.42	112.2	3962.51	42.12	138.19	-0.68	-2.23
East Branch Below	5430.013	Q25	112.2	3962.51	42.46	139.30	112.2	3962.51	41.77	137.04	-0.69	-2.26
East Branch Below	5295.824	Q25	112.2	3962.51	41.81	137.17	112.2	3962.51	41.46	136.02	-0.35	-1.15
East Branch Below	5184.043	Q25	112.2	3962.51	41.46	136.02	112.2	3962.51	41.29	135.47	-0.17	-0.56
East Branch Below	5139.005	Q25	112.2	3962.51	41.37	135.73	112.2	3962.51	41.18	135.10	-0.19	-0.62
East Branch Below	5046.211	Q25	112.2	3962.51	41.12	134.91	112.2	3962.51	41.01	134.55	-0.11	-0.36
East Branch Below	4967.967	Q25	112.2	3962.51	40.88	134.12	112.2	3962.51	40.77	133.76	-0.11	-0.36
East Branch Below	4875.326	Q25	112.2	3962.51	40.57	133.10	112.2	3962.51	40.55	133.04	-0.02	-0.07
East Branch Below	4781.163	Q25	112.2	3962.51	40.19	131.86	112.2	3962.51	40.20	131.89	0.01	0.03
East Branch Below	4694.651	Q25	112.2	3962.51	39.94	131.04	112.2	3962.51	39.94	131.04	0.00	0.00
East Branch Below	4604.479	Q25	112.2	3962.51	39.66	130.12	112.2	3962.51	39.66	130.12	0.00	0.00
East Branch Below	4445.673	Q25	112.2	3962.51	38.42	126.05	112.2	3962.51	38.42	126.05	0.00	0.00
East Branch Below	4317.142	Q25	112.2	3962.51	37.82	124.08	112.2	3962.51	37.82	124.08	0.00	0.00

Table 12. Comparison of 100-Year Peak Flow and Water Surface Profile for Alternative Plan 1

Reach	River Sta	Profile	Existing				Alternative 1				Difference	
			Q Total		W.S. Elev		Q Total		W.S. Elev			
			(cms)	(cfs)	(m)	(ft)	(cms)	(cfs)	(m)	(ft)	(m)	(ft)
East Branch Above	6683.765	Q100	114.6	4047.06	49.31	161.78	114.6	4047.06	49.31	161.78	0	0.00
East Branch Above	6553.027	Q100	114.6	4047.06	48.90	160.43	114.6	4047.06	48.90	160.43	0	0.00
East Branch Above	6440.974	Q100	114.6	4047.06	48.14	157.94	114.6	4047.06	48.14	157.94	0	0.00
East Branch Above	6297.497	Q100	114.6	4047.06	47.38	155.45	114.6	4047.06	47.38	155.45	0	0.00
East Branch Above	6188.502	Q100	114.6	4047.06	47.06	154.40	114.6	4047.06	47.06	154.40	0	0.00
East Branch Above	6085.603	Q100	114.6	4047.06	46.49	152.53	114.6	4047.06	46.48	152.49	-0.01	-0.03
East Branch Above	5997.066	Q100	114.6	4047.06	45.89	150.56	114.6	4047.06	45.78	150.20	-0.11	-0.36
East Branch Above	5992		Bridge				Bridge				0.00	0.00
East Branch Above	5985.753	Q100	114.6	4047.06	45.21	148.33	114.6	4047.06	44.95	147.47	-0.26	-0.85
East Branch Below	5970.908	Q100	153.8	5431.40	44.84	147.11	153.8	5431.40	43.96	144.23	-0.88	-2.89
East Branch Below	5897.261	Q100	153.8	5431.40	44.44	145.80	153.8	5431.40	43.54	142.85	-0.90	-2.95
East Branch Below	5804.015	Q100	153.8	5431.40	43.96	144.23	153.8	5431.40	43.11	141.44	-0.85	-2.79
East Branch Below	5656.604	Q100	153.8	5431.40	43.35	142.22	153.8	5431.40	42.79	140.39	-0.56	-1.84
East Branch Below	5567.014	Q100	153.8	5431.40	42.97	140.98	153.8	5431.40	42.47	139.34	-0.50	-1.64
East Branch Below	5430.013	Q100	153.8	5431.40	42.68	140.03	153.8	5431.40	42.10	138.12	-0.58	-1.90
East Branch Below	5295.824	Q100	153.8	5431.40	42.04	137.93	153.8	5431.40	41.74	136.94	-0.30	-0.98
East Branch Below	5184.043	Q100	153.8	5431.40	41.61	136.52	153.8	5431.40	41.54	136.29	-0.07	-0.23
East Branch Below	5139.005	Q100	153.8	5431.40	41.50	136.15	153.8	5431.40	41.40	135.83	-0.10	-0.33
East Branch Below	5046.211	Q100	153.8	5431.40	41.22	135.24	153.8	5431.40	41.18	135.10	-0.04	-0.13
East Branch Below	4967.967	Q100	153.8	5431.40	40.97	134.42	153.8	5431.40	40.91	134.22	-0.06	-0.20
East Branch Below	4875.326	Q100	153.8	5431.40	40.68	133.46	153.8	5431.40	40.70	133.53	0.02	0.07
East Branch Below	4781.163	Q100	153.8	5431.40	40.26	132.09	153.8	5431.40	40.28	132.15	0.02	0.07
East Branch Below	4694.651	Q100	153.8	5431.40	40.06	131.43	153.8	5431.40	40.06	131.43	0	0.00
East Branch Below	4604.479	Q100	153.8	5431.40	39.69	130.22	153.8	5431.40	39.69	130.22	0	0.00
East Branch Below	4445.673	Q100	153.8	5431.40	38.71	127.00	153.8	5431.40	38.71	127.00	0	0.00
East Branch Below	4317.142	Q100	153.8	5431.40	37.94	124.47	153.8	5431.40	37.94	124.47	0	0.00

A typical section of the channel improvement is shown in Figure 8 and Table 8 gives the channel improvement data for Alternative Plan 1. Figure 10 presents a detailed plan view for Alternative 1.

(b) Diversion to Old East Branch of SLO Creek Channel for Alternative Plan 2

An abandoned meandering old channel is located adjacent and parallel to the existing East Branch of SLO Creek. This channel, of about 1,300 meters (4,264 feet) in length, may be utilized to convey a portion of the 100-year flow in the existing channel. The old channel would be connected so as to create a junction at the upstream reach, downstream of Santa Fe Road Bridge, between HEC-RAS Station 5970.908 and Station 5897.261 of the existing East Branch of SLO Creek. This old channel will be also connected to form a junction at the downstream reach, between HEC-RAS Station 4875.326 and Station 4781.163, of the existing East Branch of SLO Creek.

The proposed conditions HEC-RAS model was modified to include the old channel. The old channel cross-section data was available as the right overbank cross-section of the existing HEC-RAS model of the East Branch of SLO Creek. The existing East Branch of SLO Creek and the old creek will create a loop in the HEC-RAS model. The computational capability of the HEC-RAS model allocated the divided flow in the East Branch of SLO Creek and old channel using optimization routine. Based on the computed 100-year divided flood flows at the upstream junction (between HEC-RAS Station 5970.908 and Station 5897.261of the existing East Branch of SLO Creek), the old channel and East Branch of SLO Creek has a computed discharge of 84 cms while the East Branch of SLO Creek has a computed discharge of 70 cms.

As a result of the HEC-RAS computer model runs, a comparison of the existing conditions 2-, 10-, 25-, and 100-year water surface elevations under the existing conditions and proposed conditions for Alternative Plan 2 is given in Tables 13 to 16.

Table 13. Comparison of 2-Year Peak Flow and Water Surface Profile for Alternative Plan 2

Reach	River Sta	Profile	Existing				Alternative 2				Difference	
			Q Total		W.S. Elev		Q Total		W.S. Elev			
			(cms)	(cfs)	(m)	(ft)	(cms)	(cfs)	(m)	(ft)	(m)	(ft)
East Branch Above	6683.765	Q2	29.2	1031.19	48.07	157.71	29.2	1031.19	48.07	157.71	0	0.00
East Branch Above	6553.027	Q2	29.2	1031.19	47.51	155.87	29.2	1031.19	47.51	155.87	0	0.00
East Branch Above	6440.974	Q2	29.2	1031.19	46.89	153.84	29.2	1031.19	46.89	153.84	0	0.00
East Branch Above	6297.497	Q2	29.2	1031.19	46.06	151.12	29.2	1031.19	46.06	151.12	0	0.00
East Branch Above	6188.502	Q2	29.2	1031.19	45.40	148.95	29.2	1031.19	45.40	148.95	0	0.00
East Branch Above	6085.603	Q2	29.2	1031.19	44.53	146.10	29.2	1031.19	44.51	146.03	-0.02	-0.07
East Branch Above	5997.066	Q2	29.2	1031.19	43.44	142.52	29.2	1031.19	43.66	143.24	0.22	0.72
East Branch Above	5992		Bridge				Bridge				0.00	0.00
East Branch Above	5985.753	Q2	29.2	1031.19	43.43	142.49	29.2	1031.19	43.08	141.34	-0.35	-1.15
East Branch Below	5970.908	Q2	40.1	1416.12	43.31	142.09	40.1	1416.12	42.76	140.29	-0.55	-1.80
East Branch MID	5897.261	Q2	40.1	1416.12	42.99	141.04	30.3	1069.33	42.62	139.83	-0.37	-1.21
East Branch MID	5804.015	Q2	40.1	1416.12	42.50	139.44	30.3	1069.33	42.12	138.19	-0.38	-1.25
East Branch MID	5656.604	Q2	40.1	1416.12	42.09	138.09	30.3	1069.33	41.73	136.91	-0.36	-1.18
East Branch MID	5567.014	Q2	40.1	1416.12	41.84	137.27	30.3	1069.33	41.51	136.19	-0.33	-1.08
East Branch MID	5430.013	Q2	40.1	1416.12	41.39	135.79	30.3	1069.33	41.07	134.74	-0.32	-1.05
East Branch MID	5295.824	Q2	40.1	1416.12	40.92	134.25	30.3	1069.33	40.59	133.17	-0.33	-1.08
East Branch MID	5184.043	Q2	40.1	1416.12	40.71	133.56	30.3	1069.33	40.39	132.51	-0.32	-1.05
East Branch MID	5139.005	Q2	40.1	1416.12	40.61	133.23	30.3	1069.33	40.29	132.18	-0.32	-1.05
East Branch MID	5046.211	Q2	40.1	1416.12	40.30	132.22	30.3	1069.33	40.00	131.23	-0.30	-0.98
East Branch MID	4967.967	Q2	40.1	1416.12	39.74	130.38	30.3	1069.33	39.51	129.63	-0.23	-0.75
East Branch MID	4875.326	Q2	40.1	1416.12	39.24	128.74	30.3	1069.33	39.14	128.41	-0.10	-0.33
East Branch Low	4781.163	Q2	40.1	1416.12	38.93	127.72	40.1	1416.12	38.93	127.72	0	0.00
East Branch Low	4694.651	Q2	40.1	1416.12	38.59	126.61	40.1	1416.12	38.59	126.61	0	0.00
East Branch Low	4604.479	Q2	40.1	1416.12	38.32	125.72	40.1	1416.12	38.32	125.72	0	0.00
East Branch Low	4445.673	Q2	40.1	1416.12	37.40	122.70	40.1	1416.12	37.40	122.70	0	0.00
East Branch Low	4317.142	Q2	40.1	1416.12	37.00	121.39	40.1	1416.12	37.00	121.39	0	0.00

Table 14. Comparison of 10-Year Peak Flow and Water Surface Profile for Alternative Plan 2

Reach	River Sta	Profile	Existing				Alternative 2				Difference	
			Q Total		W.S. Elev		Q Total		W.S. Elev			
			(cms)	(cfs)	(m)	(ft)	(cms)	(cfs)	(m)	(ft)	(m)	(ft)
East Branch Above	6683.765	Q10	60.6	2140.07	48.82	160.17	60.6	2140.07	48.82	160.17	0	0.00
East Branch Above	6553.027	Q10	60.6	2140.07	48.31	158.50	60.6	2140.07	48.32	158.53	0.01	0.03
East Branch Above	6440.974	Q10	60.6	2140.07	47.60	156.17	60.6	2140.07	47.61	156.20	0.01	0.03
East Branch Above	6297.497	Q10	60.6	2140.07	46.69	153.18	60.6	2140.07	46.69	153.18	0.00	0.00
East Branch Above	6188.502	Q10	60.6	2140.07	46.36	152.10	60.6	2140.07	46.33	152.00	-0.03	-0.10
East Branch Above	6085.603	Q10	60.6	2140.07	45.71	149.97	60.6	2140.07	45.62	149.67	-0.09	-0.30
East Branch Above	5997.066	Q10	60.6	2140.07	45.01	147.67	60.6	2140.07	43.98	144.29	-1.03	-3.38
East Branch Above	5992		Bridge				Bridge			0.00	0.00	0.00
East Branch Above	5985.753	Q10	60.6	2140.07	44.47	145.90	60.6	2140.07	43.91	144.06	-0.56	-1.84
East Branch Below	5970.908	Q10	82.6	2916.99	44.37	145.57	82.6	2916.99	43.31	142.09	-1.06	-3.48
East Branch MID	5897.261	Q10	82.6	2916.99	44.05	144.52	48.0	1695.10	43.26	141.93	-0.79	-2.59
East Branch MID	5804.015	Q10	82.6	2916.99	43.49	142.68	48.0	1695.10	42.76	140.29	-0.73	-2.40
East Branch MID	5656.604	Q10	82.6	2916.99	42.91	140.78	48.0	1695.10	42.34	138.91	-0.57	-1.87
East Branch MID	5567.014	Q10	82.6	2916.99	42.61	139.80	48.0	1695.10	42.08	138.06	-0.53	-1.74
East Branch MID	5430.013	Q10	82.6	2916.99	42.17	138.35	48.0	1695.10	41.63	136.58	-0.54	-1.77
East Branch MID	5295.824	Q10	82.6	2916.99	41.61	136.52	48.0	1695.10	41.24	135.30	-0.37	-1.21
East Branch MID	5184.043	Q10	82.6	2916.99	41.33	135.60	48.0	1695.10	41.06	134.71	-0.27	-0.89
East Branch MID	5139.005	Q10	82.6	2916.99	41.27	135.40	48.0	1695.10	40.98	134.45	-0.29	-0.95
East Branch MID	5046.211	Q10	82.6	2916.99	41.07	134.74	48.0	1695.10	40.73	133.63	-0.34	-1.12
East Branch MID	4967.967	Q10	82.6	2916.99	40.70	133.53	48.0	1695.10	40.40	132.55	-0.30	-0.98
East Branch MID	4875.326	Q10	82.6	2916.99	40.36	132.41	48.0	1695.10	40.27	132.12	-0.09	-0.30
East Branch Low	4781.163	Q10	82.6	2916.99	40.08	131.50	82.6	2916.99	40.08	131.50	0	0.00
East Branch Low	4694.651	Q10	82.6	2916.99	39.74	130.38	82.6	2916.99	39.74	130.38	0	0.00
East Branch Low	4604.479	Q10	82.6	2916.99	39.42	129.33	82.6	2916.99	39.42	129.33	0	0.00
East Branch Low	4445.673	Q10	82.6	2916.99	38.05	124.84	82.6	2916.99	38.05	124.84	0	0.00
East Branch Low	4317.142	Q10	82.6	2916.99	37.72	123.75	82.6	2916.99	37.72	123.75	0	0.00

Table 15. Comparison of 25-Year Peak Flow and Water Surface Profile for Alternative Plan 2

Reach	River Sta	Profile	Existing				Alternative 2				Difference	
			Q Total		W.S. Elev		Q Total		W.S. Elev			
			(cms)	(cfs)	(m)	(ft)	(cms)	(cfs)	(m)	(ft)	(m)	(ft)
East Branch Above	6683.765	Q25	83.1	2934.65	49.07	160.99	83.1	2934.65	49.07	160.99	0	0.00
East Branch Above	6553.027	Q25	83.1	2934.65	48.60	159.45	83.1	2934.65	48.60	159.45	0	0.00
East Branch Above	6440.974	Q25	83.1	2934.65	47.91	157.18	83.1	2934.65	47.91	157.18	0	0.00
East Branch Above	6297.497	Q25	83.1	2934.65	47.07	154.43	83.1	2934.65	47.08	154.46	0.01	0.03
East Branch Above	6188.502	Q25	83.1	2934.65	46.78	153.48	83.1	2934.65	46.78	153.48	0.00	0.00
East Branch Above	6085.603	Q25	83.1	2934.65	46.17	151.48	83.1	2934.65	46.21	151.61	0.04	0.13
East Branch Above	5997.066	Q25	83.1	2934.65	45.40	148.95	83.1	2934.65	45.20	148.29	-0.20	-0.66
East Branch Above	5992		Bridge				Bridge			0.00	0.00	0.00
East Branch Above	5985.753	Q25	83.1	2934.65	44.70	146.65	83.1	2934.65	44.40	145.67	-0.30	-0.98
East Branch Below	5970.908	Q25	112.2	3962.31	44.60	146.33	112.2	3962.31	43.48	142.65	-1.12	-3.67
East Branch MID	5897.261	Q25	112.2	3962.31	44.24	145.14	57.9	2046.13	43.56	142.91	-0.68	-2.23
East Branch MID	5804.015	Q25	112.2	3962.31	43.76	143.57	57.9	2046.13	43.05	141.24	-0.71	-2.33
East Branch MID	5656.604	Q25	112.2	3962.31	43.14	141.54	57.9	2046.13	42.61	139.80	-0.53	-1.74
East Branch MID	5567.014	Q25	112.2	3962.31	42.80	140.42	57.9	2046.13	42.31	138.81	-0.49	-1.61
East Branch MID	5430.013	Q25	112.2	3962.31	42.46	139.30	57.9	2046.13	41.84	137.27	-0.62	-2.03
East Branch MID	5295.824	Q25	112.2	3962.31	41.81	137.17	57.9	2046.13	41.44	135.96	-0.37	-1.21
East Branch MID	5184.043	Q25	112.2	3962.31	41.46	136.02	57.9	2046.13	41.27	135.40	-0.19	-0.62
East Branch MID	5139.005	Q25	112.2	3962.31	41.37	135.73	57.9	2046.13	41.19	135.14	-0.18	-0.59
East Branch MID	5046.211	Q25	112.2	3962.31	41.12	134.91	57.9	2046.13	40.96	134.38	-0.16	-0.52
East Branch MID	4967.967	Q25	112.2	3962.31	40.88	134.12	57.9	2046.13	40.57	133.10	-0.31	-1.02
East Branch MID	4875.326	Q25	112.2	3962.31	40.57	133.10	57.9	2046.13	40.43	132.64	-0.14	-0.46
East Branch Low	4781.163	Q25	112.2	3962.31	40.19	131.86	112.2	3962.31	40.20	131.89	0.01	0.03
East Branch Low	4694.651	Q25	112.2	3962.31	39.94	131.04	112.2	3962.31	39.94	131.04	0	0.00
East Branch Low	4604.479	Q25	112.2	3962.31	39.66	130.12	112.2	3962.31	39.66	130.12	0	0.00
East Branch Low	4445.673	Q25	112.2	3962.31	38.42	126.05	112.2	3962.31	38.42	126.05	0	0.00
East Branch Low	4317.142	Q25	112.2	3962.31	37.82	124.08	112.2	3962.31	37.82	124.08	0	0.00

Table 16. Comparison of 100-Year Peak Flow and Water Surface Profile for Alternative Plan 2

Reach	River Sta	Profile	Existing				Alternative 2				Difference	
			Q Total		W.S. Elev		Q Total		W.S. Elev			
			(cms)	(cfs)	(m)	(ft)	(cms)	(cfs)	(m)	(ft)	(m)	(ft)
East Branch Above	6683.765	Q100	114.6	4047.06	49.31	161.78	114.6	4047.06	49.31	161.78	0	0.00
East Branch Above	6553.027	Q100	114.6	4047.06	48.90	160.43	114.6	4047.06	48.90	160.43	0	0.00
East Branch Above	6440.974	Q100	114.6	4047.06	48.14	157.94	114.6	4047.06	48.14	157.94	0	0.00
East Branch Above	6297.497	Q100	114.6	4047.06	47.38	155.45	114.6	4047.06	47.38	155.45	0	0.00
East Branch Above	6188.502	Q100	114.6	4047.06	47.06	154.40	114.6	4047.06	47.06	154.40	0	0.00
East Branch Above	6085.603	Q100	114.6	4047.06	46.49	152.53	114.6	4047.06	46.48	152.49	-0.01	-0.03
East Branch Above	5997.066	Q100	114.6	4047.06	45.89	150.56	114.6	4047.06	45.78	150.20	-0.11	-0.36
East Branch Above	5992		Bridge			0.00	Bridge			0.00	0.00	0.00
East Branch Above	5985.753	Q100	114.6	4047.06	45.21	148.33	114.6	4047.06	44.95	147.47	-0.26	-0.85
East Branch Below	5970.908	Q100	153.8	5431.40	44.84	147.11	153.8	5431.40	43.96	144.23	-0.88	-2.89
East Branch MID	5897.261	Q100	153.8	5431.40	44.44	145.80	70.2	2478.03	43.93	144.13	-0.51	-1.67
East Branch MID	5804.015	Q100	153.8	5431.40	43.96	144.23	70.2	2478.03	43.37	142.29	-0.59	-1.94
East Branch MID	5656.604	Q100	153.8	5431.40	43.35	142.22	70.2	2478.03	42.89	140.71	-0.46	-1.51
East Branch MID	5567.014	Q100	153.8	5431.40	42.97	140.98	70.2	2478.03	42.55	139.60	-0.42	-1.38
East Branch MID	5430.013	Q100	153.8	5431.40	42.68	140.03	70.2	2478.03	42.04	137.93	-0.64	-2.10
East Branch MID	5295.824	Q100	153.8	5431.40	42.04	137.93	70.2	2478.03	41.60	136.48	-0.44	-1.44
East Branch MID	5184.043	Q100	153.8	5431.40	41.61	136.52	70.2	2478.03	41.40	135.83	-0.21	-0.69
East Branch MID	5139.005	Q100	153.8	5431.40	41.50	136.15	70.2	2478.03	41.31	135.53	-0.19	-0.62
East Branch MID	5046.211	Q100	153.8	5431.40	41.22	135.24	70.2	2478.03	41.08	134.78	-0.14	-0.46
East Branch MID	4967.967	Q100	153.8	5431.40	40.97	134.42	70.2	2478.03	40.72	133.60	-0.25	-0.82
East Branch MID	4875.326	Q100	153.8	5431.40	40.68	133.46	70.2	2478.03	40.54	133.00	-0.14	-0.46
East Branch Low	4781.163	Q100	153.8	5431.40	40.26	132.09	153.8	5431.40	40.28	132.15	0.02	0.07
East Branch Low	4694.651	Q100	153.8	5431.40	40.06	131.43	153.8	5431.40	40.06	131.43	0	0.00
East Branch Low	4604.479	Q100	153.8	5431.40	39.69	130.22	153.8	5431.40	39.69	130.22	0	0.00
East Branch Low	4445.673	Q100	153.8	5431.40	38.71	127.00	153.8	5431.40	38.71	127.00	0	0.00
East Branch Low	4317.142	Q100	153.8	5431.40	37.94	124.47	153.8	5431.40	37.94	124.47	0	0.00

Based on the present cross-section information of the East Branch of SLO Creek, the computed 100- year water surface elevations in the old channel are lower than the adjacent top of bank elevations; therefore, the 100-year flow would not spill in the adjacent hazardous waste area.

(c) Reinforced Concrete Pipe Diversion for Alternative Plan 3

The purpose of the diversion is to reduce the flow in the East Branch of SLO Creek reach that is affected by the floodplain encroachment. A trial and error method of assigning flow discharge values was made in the computation of the water surface elevations in the East Branch of SLO Creek using the existing conditions HEC-RAS model with the floodplain encroachment of Santa Fe Road relocation for several different flows. These computed water surface elevations with encroachments were compared with the existing 100-year water surface elevations. With the proposed Santa Fe Road in place, the allocated 90 cms flow in the East Branch of SLO Creek would not exceed the allowable increase of 64 mm (2.5 inches). The total 100-year flow in the East Branch of SLO Creek is 153.8 cms. Therefore, about 63.8 cms could be diverted into the concrete diversion pipes at HEC-RAS River Station 5897.261 without increasing the 100-year water surface elevation to the allowable limit of 64 mm (2.5 inches). The diverted flow of 63.8 cms would then return back to the East Branch of SLO Creek downstream at HEC-RAS River Station 4781.163.

As a result of the HEC-RAS computer model runs, a comparison of the existing conditions for the 100-year water surface elevations under the existing conditions and proposed conditions for Alternative Plan 3 is given in Table 17.

Table 17. Comparison of 100-Year Peak Flow and Water Surface Profile for Alternative Plan 3

Reach	River Sta	Profile	Existing				Alternative 3				Difference	
			Q Total		W.S. Elev		Q Total		W.S. Elev			
			(cms)	(cfs)	(m)	(ft)	(cms)	(cfs)	(m)	(ft)	(m)	(ft)
East Branch Above	6683.765	Q100	114.6	4047.06	49.31	161.78	114.6	4047.06	49.31	161.78	0	0.00
East Branch Above	6553.027	Q100	114.6	4047.06	48.90	160.43	114.6	4047.06	48.90	160.43	0	0.00
East Branch Above	6440.974	Q100	114.6	4047.06	48.14	157.94	114.6	4047.06	48.14	157.94	0	0.00
East Branch Above	6297.497	Q100	114.6	4047.06	47.38	155.45	114.6	4047.06	47.38	155.45	0	0.00
East Branch Above	6188.502	Q100	114.6	4047.06	47.06	154.40	114.6	4047.06	47.06	154.40	0	0.00
East Branch Above	6085.603	Q100	114.6	4047.06	46.49	152.53	114.6	4047.06	46.47	152.46	-0.02	-0.07
East Branch Above	5997.066	Q100	114.6	4047.06	45.89	150.56	114.6	4047.06	45.72	150.00	-0.17	-0.56
East Branch Above	5992		Bridge				Bridge				0.00	0.00
East Branch Above	5985.753	Q100	114.6	4047.06	45.21	148.33	114.6	4047.06	44.80	146.98	-0.41	-1.35
East Branch Below	5970.908	Q100	153.8	5431.40	44.84	147.11	153.8	5431.40	44.52	146.06	-0.32	-1.05
East Branch Below	5897.261	Q100	153.8	5431.40	44.44	145.80	90.0	3178.32	44.36	145.54	-0.08	-0.26
East Branch Below	5804.015	Q100	153.8	5431.40	43.96	144.23	90.0	3178.32	43.85	143.86	-0.11	-0.36
East Branch Below	5656.604	Q100	153.8	5431.40	43.35	142.22	90.0	3178.32	43.36	142.26	0.01	0.03
East Branch Below	5567.014	Q100	153.8	5431.40	42.97	140.98	90.0	3178.32	43.01	141.11	0.04	0.13
East Branch Below	5430.013	Q100	153.8	5431.40	42.68	140.03	90.0	3178.32	42.42	139.17	-0.26	-0.85
East Branch Below	5295.824	Q100	153.8	5431.40	42.04	137.93	90.0	3178.32	41.79	137.11	-0.25	-0.82
East Branch Below	5184.043	Q100	153.8	5431.40	41.61	136.52	90.0	3178.32	41.56	136.35	-0.05	-0.16
East Branch Below	5139.005	Q100	153.8	5431.40	41.50	136.15	90.0	3178.32	41.46	136.02	-0.04	-0.13
East Branch Below	5046.211	Q100	153.8	5431.40	41.22	135.24	90.0	3178.32	41.19	135.14	-0.03	-0.10
East Branch Below	4967.967	Q100	153.8	5431.40	40.97	134.42	90.0	3178.32	40.87	134.09	-0.10	-0.33
East Branch Below	4875.326	Q100	153.8	5431.40	40.68	133.46	90.0	3178.32	40.70	133.53	0.02	0.07
East Branch Below	4781.163	Q100	153.8	5431.40	40.26	132.09	153.8	5431.40	40.28	132.15	0.02	0.07
East Branch Below	4694.651	Q100	153.8	5431.40	40.06	131.43	153.8	5431.40	40.06	131.43	0	0.00
East Branch Below	4604.479	Q100	153.8	5431.40	39.69	130.22	153.8	5431.40	39.69	130.22	0	0.00
East Branch Below	4445.673	Q100	153.8	5431.40	38.71	127.00	153.8	5431.40	38.71	127.00	0	0.00
East Branch Below	4317.142	Q100	153.8	5431.40	37.94	124.47	153.8	5431.40	37.94	124.47	0	0.00

Note: 63.8 m3/s flow is diverted into the four 8-foot diameter RCP

Approximately 1,130 m (3,700 feet) length of the pipe would be needed. The pipes would be connected to the East Branch of SLO Creek at the upstream and the downstream ends. The pipe sizes were estimated for flowing full condition. The energy grade slope for the pipes was computed by dividing the difference in the energy grade at the upstream and downstream ends where the pipes are to be connected to the East Branch of SLO Creek. A Manning's "n" of 0.013 was assumed in the pipe. The pipe size was determined for a diverted flow of 63.8 cms. The pipe size computations are provided in Table 18.

Four 8 feet diameter RCP (approximately 2.5 meter (8 feet) in diameter) pipes would be needed to divert the flow such that the post-project 100-year water surface elevations are reduced to existing conditions in the East Branch of SLO Creek.

Table 18. Pipe Size Computations for Alternative Plan 3

Number of Pipes	U/S Energy Grade		D/S Energy Grade		Approx. Entrance & Exit Losses		Length		Energy Slope	Flow in Each Pipe		Manning n	Diameter		Velocity		Velocity Head	
	(m)	(ft)	(m)	(ft)	(m)	(ft)	(m)	(ft)		(cms)	(cfs)		(m)	(ft)	(cms)	(cfs)	(m)	(ft)
1	44.45	145.83	40.45	132.71	0.95	3.12	1080	3543.30	0.002824	63.8	209.32	0.013	4.34	14.24	4.32	14.17	0.94918	3.11
2	44.45	145.83	40.45	132.71	0.71	2.33	1080	3543.30	0.003046	31.9	104.66	0.013	3.3	10.83	3.73	12.24	0.710404	2.33
3	44.45	145.83	40.45	132.71	0.59	1.94	1080	3543.30	0.003157	21.27	69.78	0.013	2.81	9.22	3.42	11.22	0.595839	1.95
4	44.45	145.83	40.45	132.71	0.52	1.71	1080	3543.30	0.003222	15.95	52.33	0.013	2.52	8.27	3.21	10.53	0.523936	1.72
5	44.45	145.83	40.45	132.71	0.47	1.54	1080	3543.30	0.003269	12.76	41.86	0.013	2.31	7.58	3.05	10.01	0.473663	1.55

5. Cost Estimates

Preliminary cost estimates were developed for the evaluation and comparison of each drainage plan alternative to mitigate for the floodplain encroachment. The cost estimates include costs for construction, engineering design, construction inspection and supervision, legal and administration fees, and a contingency. No costs were estimated for environmental review or mitigation nor was there an attempt to quantify the environmental benefits of the three alternatives for this study. Cost of acquisition of easement and right-of-way is also not included in the estimates, but may become a factor with Alternative 2.

For excavation costs it was assumed that the excavated material will be spoiled in the general area that the excavation occurs. In case the excavated material cannot be disposed in the general, hauling cost would significantly increase costs.

Tables B-2, B-3, and B-4 in Appendix B show the detailed cost estimates for the Alternative Plans 1, 2, and 3, respectively.

6. Evaluation of Alternatives

Three drainage plan alternatives are evaluated in this study for the floodplain encroachment. The results of hydrologic and hydraulic models that were established in this drainage study showed that the three Alternative Plans 1, 2, and 3 mitigated the adverse impacts of the floodplain encroachment by limiting the 100-year water surface elevation increase in the East Branch of SLO Creek (HEC-RAS River Station 6683.765 to Station 4317.142) to less than 64 mm (2.5 inches). The cost of the three floodplain encroachment alternatives is as follows:

- Alternative 1 – $588,000
- Alternative 2 – $236,000
- Alternative 3 – $10,545,000

In addition, a detention basin will be required to mitigate for the increased rainfall runoff resulting from the addition pavement associated with the Runway 11 Extension.

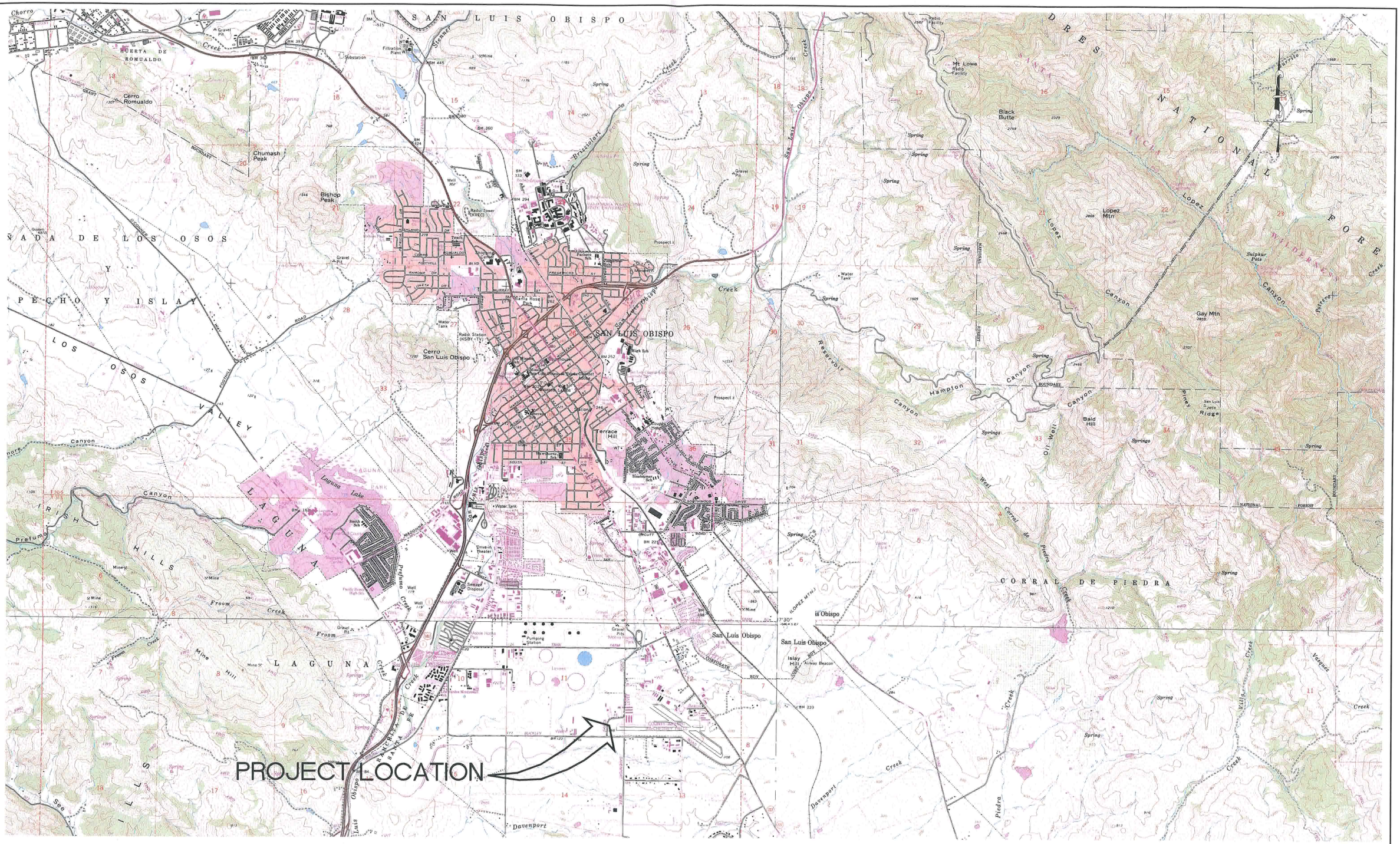
7. References

Waterway Management Plan, San Luis Obispo Creek, Volume I, 2003
City of San Luis Obispo, Department of Public Works, County of San Luis Obispo, Flood Control District Zone 9, San Luis Obispo, California

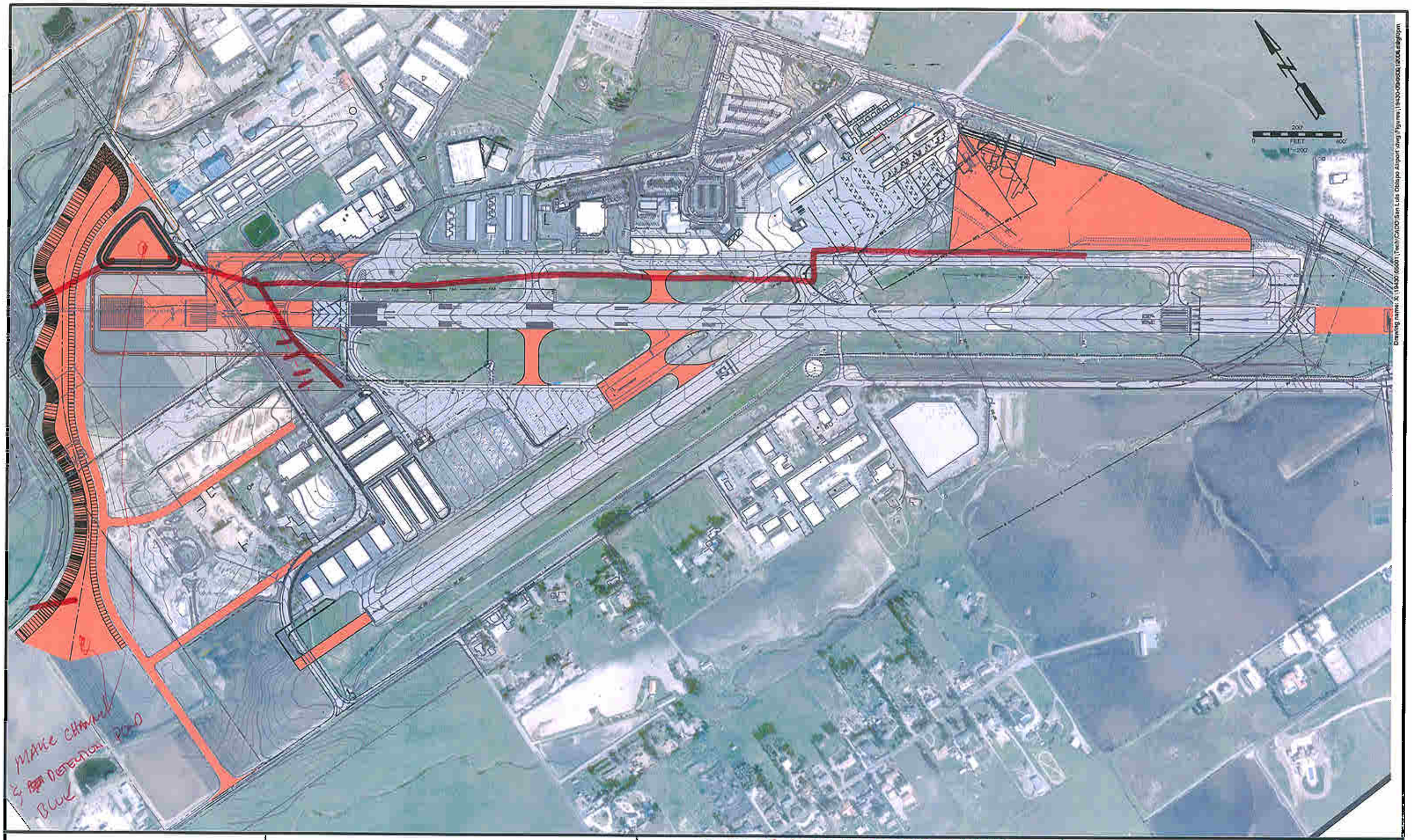
Waterway Management Plan, San Luis Obispo Creek, Volume III, Drainage Design Manual, 2003
City of San Luis Obispo, Department of Public Works, County of San Luis Obispo, Flood Control District Zone 9, San Luis Obispo, California

Storm Drain Master Plan, City of San Luis Obispo, Final Report, January 1999 (Revised 2000),
Boyle Engineering Corporation, San Luis Obispo, California

Figures



MEAD & HUNT ENGINEERS ARCHITECTS SCIENTISTS PLANNERS 3327 Longview Drive North Highlands, California 95660 Phone: (916) 971-3961 Fax: (916) 971-0578	SAN LUIS OBISPO COUNTY	SCALE OF ORIGINAL: 1"=2000'
10/7/04 SUBMITTED / APPROVED	REGIONAL AIRPORT RUNWAY II EXTENSION DRAINAGE STUDY LOCATION MAP	FIGURE 1



PRELIMINARY

SAN LUIS OBISPO COUNTY REGIONAL AIRPORT

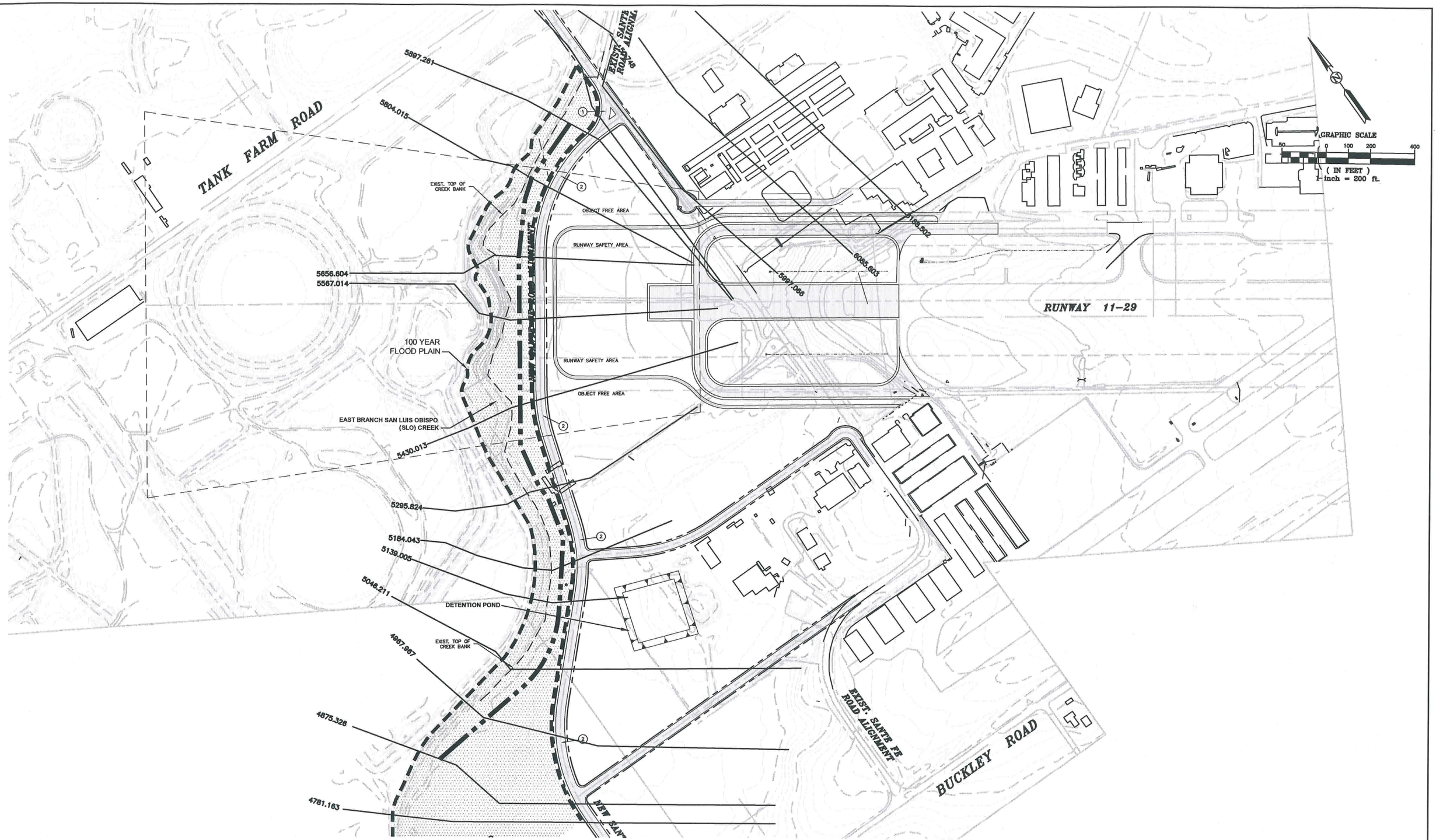
SAN LUIS OBISPO, CA.

PLAN OF PROPOSED FUTURE AIRPORT IMPROVEMENTS

~~OVERALL AIRPORT SITE MAP~~

MEAD & HUNT
ENGINEERS ARCHITECTS SCIENTISTS PLANNERS
707 Aviation Blvd., Santa Rosa, California 95403
(707) 526-5010 FAX (707) 526-9721

Designed by:	Drawn by:	Checked by:	Approved by:	Scale:	Date:	Job No.:	Sheet
MAS/DWS	RAS	MAS		1" = 200'	Feb. 2006	19430-00-04001	1 Of 1



LEGEND

ALTERNATIVE PLAN 1 - LEFT BANK TRAPEZOIDAL CHANNEL IMPROVEMENT
15' BOTTOM WIDTH
3H:1V SIDE SLOPES

MEAD & HUNT ENGINEERS ARCHITECTS SCIENTISTS PLANNERS
3327 Longview Drive North Highlands, California 95660
Phone: (916) 971-3961 Fax: (916) 971-0578

10/7/04 SUBMITTED

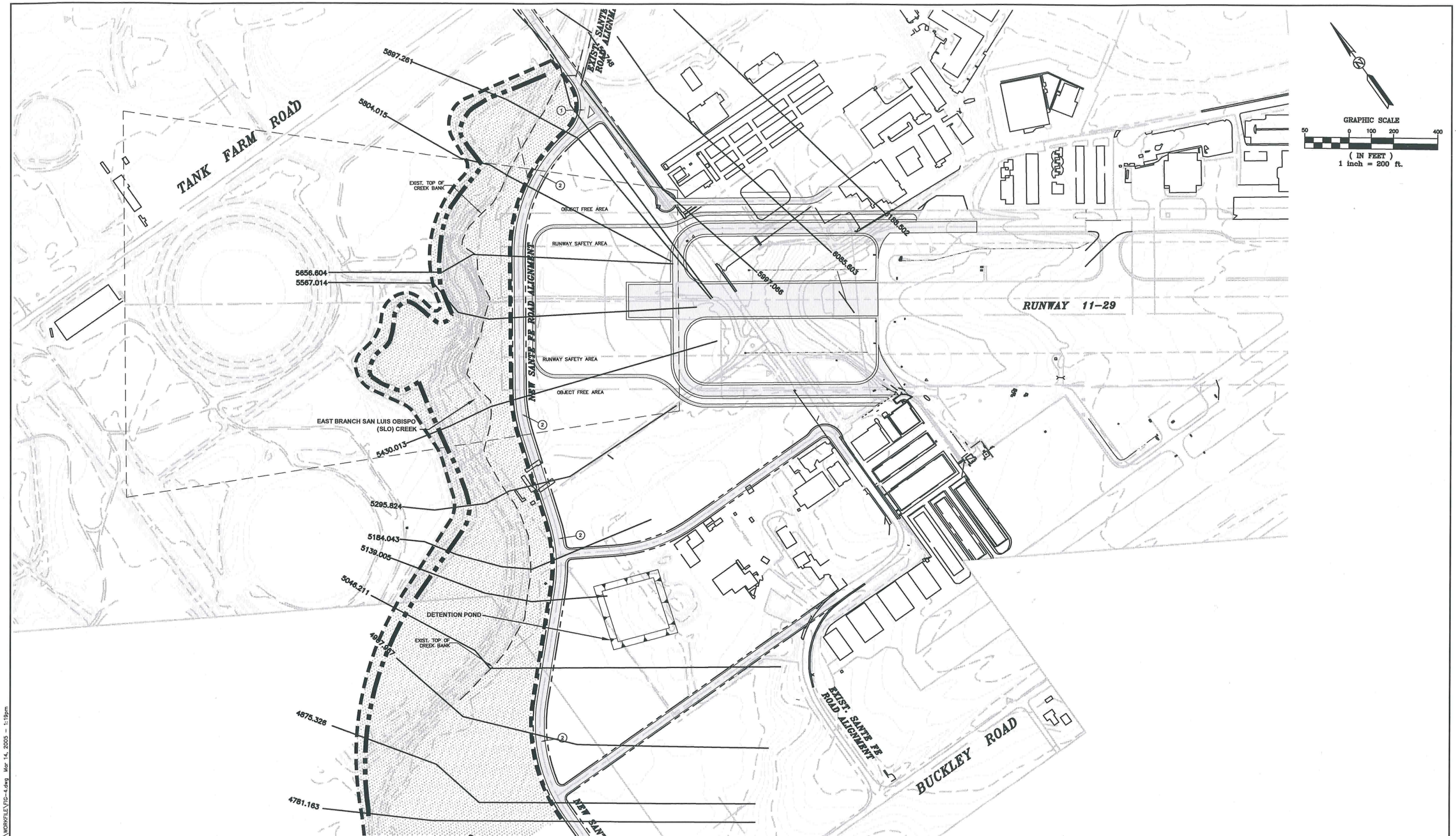
APPROVED

SAN LUIS OBISPO COUNTY

REGIONAL AIRPORT RUNWAY II EXTENSION DRAINAGE STUDY
ALTERNATIVE PLAN 1

SCALE OF ORIGINAL: 1"=200'

FIGURE 3



LEGEND

ALTERNATIVE PLAN 2 - OLD CHANNEL OF EAST BRANCH SAN LUIS OBISPO CREEK

MEAD & HUNT ENGINEERS ARCHITECTS SCIENTISTS PLANNERS
3327 Longview Drive North Highlands, California 95660
Phone: (916) 971-3961 Fax: (916) 971-0578

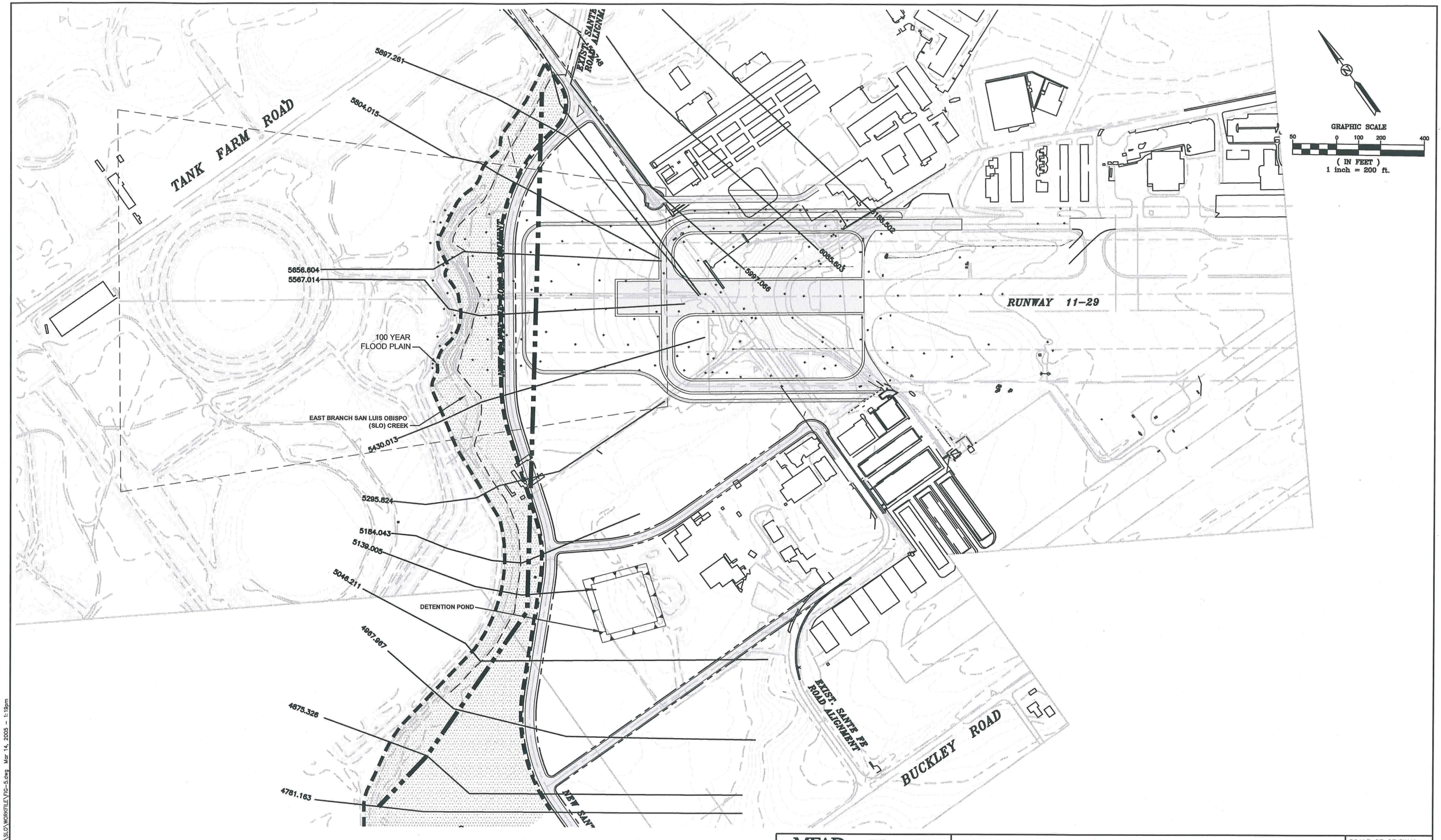
10/7/04 SUBMITTED | APPROVED

SAN LUIS OBISPO COUNTY

REGIONAL AIRPORT RUNWAY II EXTENSION DRAINAGE STUDY
ALTERNATIVE PLAN 2

SCALE OF ORIGINAL: 1"=200'

FIGURE 4



X:\05155\04001\Tech\CADD\SLO\WORKFILE\FIG-5.dwg Mar 14, 2005 - 1:19pm

LEGEND

ALTERNATIVE PLAN 3 - (4) - 8'ϕ RCP PIPES (APPROXIMATELY 3500 LF)

MEAD & HUNT ENGINEERS ARCHITECTS SCIENTISTS PLANNERS
3327 Longview Drive North Highlands, California 95660
Phone: (916) 971-3961 Fax: (916) 971-0578

10/7/04 SUBMITTED

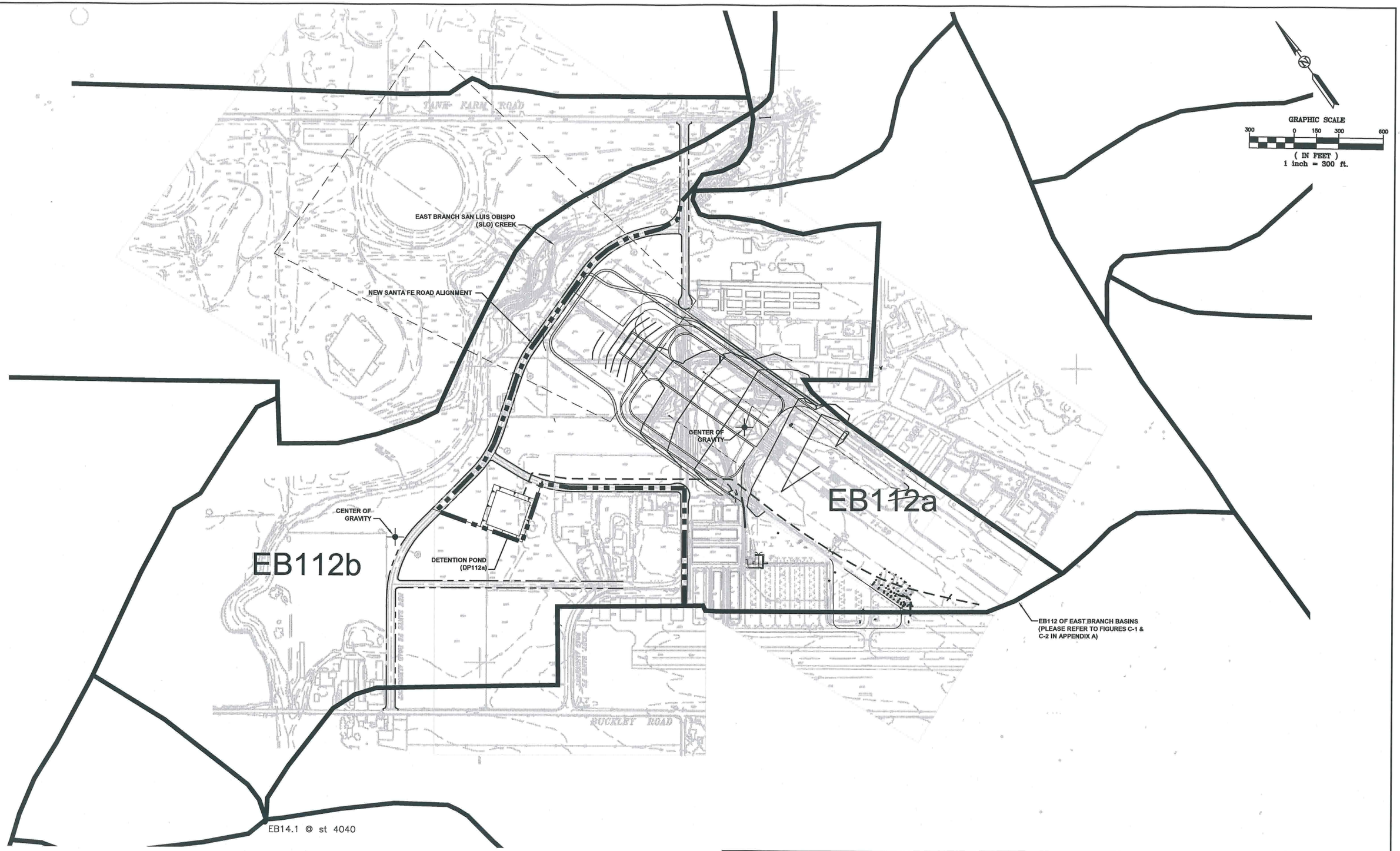
APPROVED

SAN LUIS OBISPO COUNTY

REGIONAL AIRPORT RUNWAY II EXTENSION DRAINAGE STUDY
ALTERNATIVE PLAN 3

SCALE OF ORIGINAL: 1"=200'

FIGURE 5



MEAD & HUNT ENGINEERS ARCHITECTS SCIENTISTS PLANNERS
3327 Longview Drive North Highlands, California 95660
Phone: (916) 971-3961 Fax: (916) 971-0578

10/7/04 SUBMITTED

APPROVED

SAN LUIS OBISPO COUNTY

REGIONAL AIRPORT RUNWAY II EXTENSION DRAINAGE STUDY
WATERSHED MAP FOR SUBBASINS EB112a AND EB112b

SCALE OF ORIGINAL: 1"=300'

FIGURE 6

X:\05155\04001\Tech\CADD\SLO\WORKFILE\FIG-6.dwg Mar 14, 2005 - 1:09pm

TANK FARM ROAD

LEGEND

EXISTING 100-YEAR FLOODPLAIN BOUNDARY

GRAPHIC SCALE

50 0 100 200 400

(IN FEET)

1 inch = 200 ft.

EAST BRANCH SAN LUIS OBISPO (SLO) CREEK

NEW SANTA FE ROAD ALIGNMENT

EXIST. SANTA FE ROAD ALIGNMENT

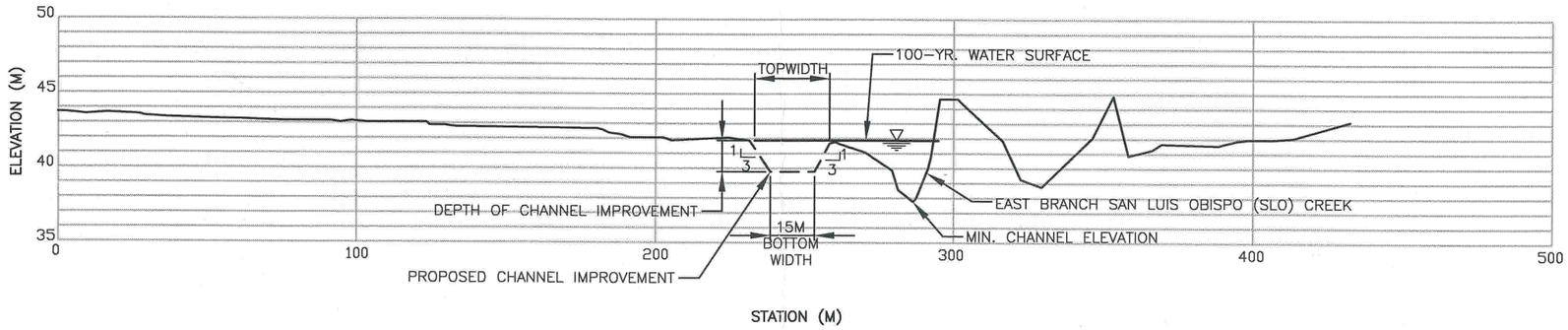
SANTA FE ROAD

RUNWAY 11-29

5970.908
59.026
155.139
5987.281
5804.015
162.398
5856.604
5567.014
5430.013
5295.824
5184.043
5139.005
5048.211
4967.967
4575.328
4781.163
4694.651
4804.479
5997.066
6065.803
5156.502

MEAD & HUNT ENGINEERS ARCHITECTS SCIENTISTS PLANNERS 3327 Longview Drive North Highlands, California 95660 Phone: (916) 971-3961 Fax: (916) 971-0578	SAN LUIS OBISPO COUNTY
10/7/04 SUBMITTED / APPROVED	REGIONAL AIRPORT RUNWAY II EXTENSION DRAINAGE STUDY EXISTING 100-YEAR FLOODPLAIN
	SCALE OF ORIGINAL: 1"=200'
	FIGURE 7

X:\05195\04001\Tech\CADD\SLO\WORKFILE\FIG-7.dwg Mar 14, 2005 - 1:14pm



NOTES:

1. PLEASE REFER TO TABLE 18 FOR THE PROPOSED CONCEPTUAL DIMENSIONS OF THE CHANNEL IMPROVEMENT FROM STA. 5897.261 TO STA. 4875.326 FOR ALTERNATIVE PLAN 1.

2. WORK THIS FIGURE 8 IN CONJUNCTION WITH FIGURE 3.

3. ALL ELEVATIONS ARE BASED ON NAVD88.

4. REPRESENTATIVE TYPICAL SECTION OF CHANNEL IMPROVEMENT IS TAKEN AT STA. 5295.824.

MEAD & HUNT ENGINEERS ARCHITECTS SCIENTISTS PLANNERS
3327 Longview Drive North Highlands, California 95660
Phone: (916) 971-3961 Fax: (916) 971-0578

11/29/04
SUBMITTED

APPROVED

SAN LUIS OBISPO COUNTY

REGIONAL AIRPORT RUNWAY II EXTENSION DRAINAGE STUDY
TYPICAL SECTION OF CHANNEL IMPROVEMENT FOR ALTERNATIVE PLAN 1

SCALE OF ORIGINAL:

FIGURE 8

X:\05155\04001\Tech\CADD\SLO\WORKFILE\FIG-8.dwg 11/30/2004 9:03:27 AM PST

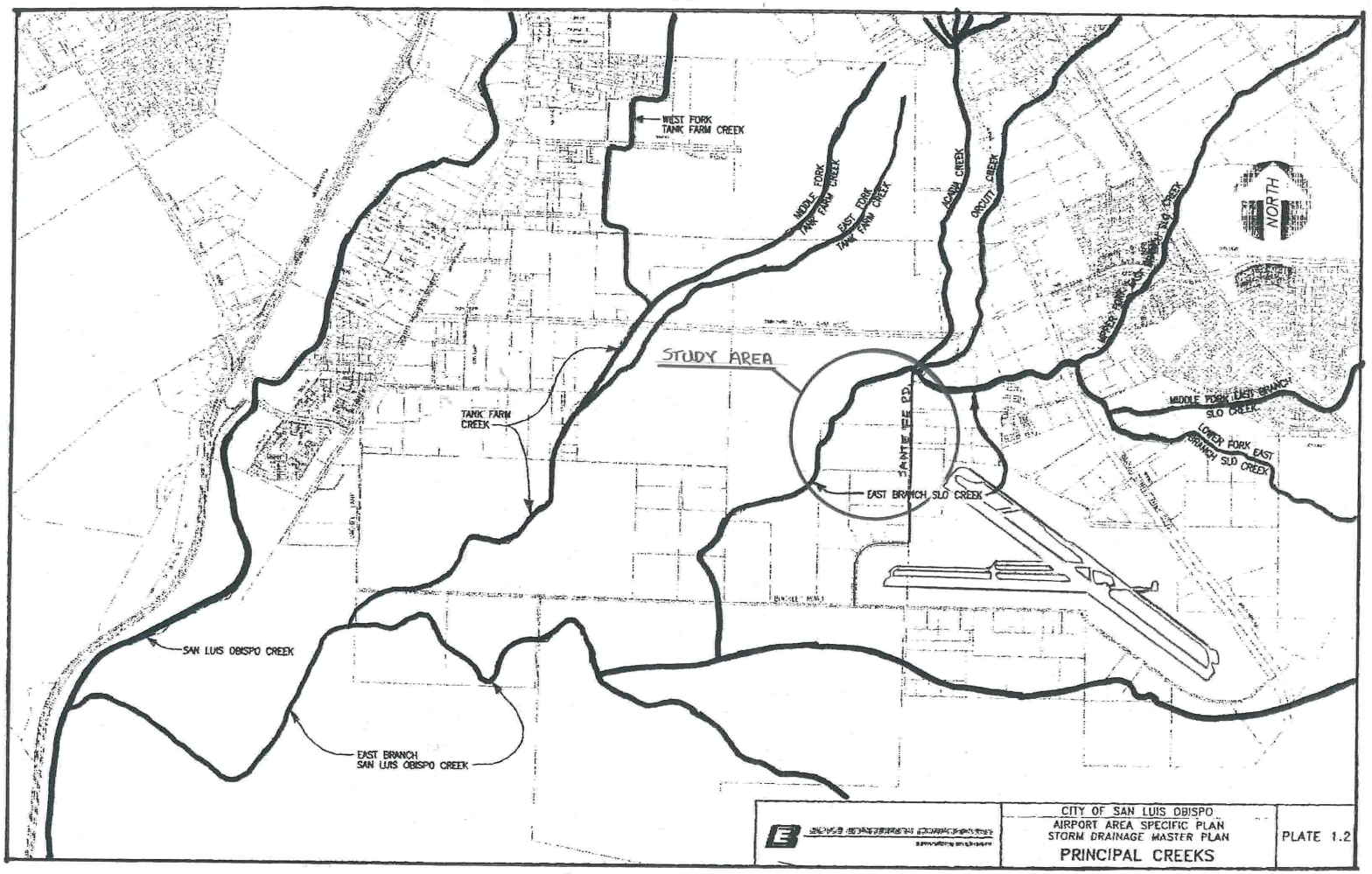
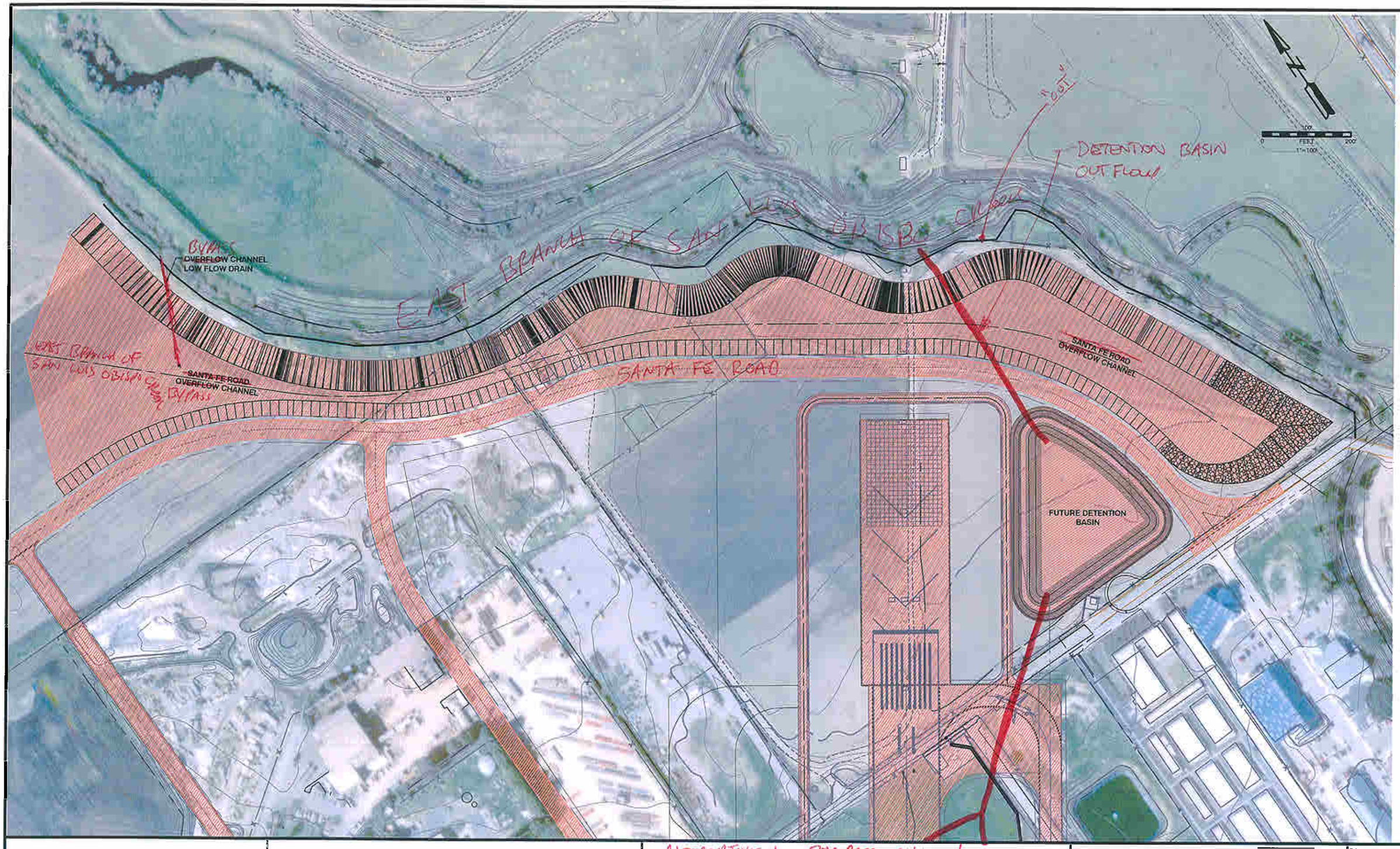


FIGURE 9

CREEKS AROUND SAN LUIS OBISPO AIRPORT AREA



PRELIMINARY

SAN LUIS OBISPO COUNTY REGIONAL AIRPORT

SAN LUIS OBISPO, CA.

ALTERNATIVE 1 – BYPASS CHANNEL

SANTE FE ROAD OVERFLOW CHANNEL

SITE MAP

MEAD & HUNT
ENGINEERS
ARCHITECTS
SCIENTISTS
PLANNERS
707 Aviation Blvd., Santa Rosa, California 95403
(707) 526-5010 FAX (707) 526-9721

Designed by:	Drawn by:	Checked by:	Approved by:	Scale:	Date:	Job No.:	Sheet
MAS/DWS	RAS	MAS		1" = 200'	Feb. 2006	19430-00-04001	1 OF 1

N

250 125 0 250 500
Feet

Existing Retention Basin

Existing Detention Basin near Santa Fe Road

Highway 227 Broad Street

Santa Fe Road

Buckley Road

Existing East Detention Basin

I1
I2
C
D
N
J
H
E1
E2
E3
A1
A2
BN1
BN
BS1
BS2
F
K
L
M

Legend

- East Drainage Area
- Northwest Drainage Area
- Collet Drainage Area
- I2 Drainage Area
- West Drainage Area
- KL Drainage Area
- East Drainage Pipes
- Northwest Drainage Pipe
- Collet Drainage Pipe
- Area I2 Pipe
- Drainage Ditch near Santa Fe Road
- Existing Detention Basin Drainage Pipe
- Area KL Pipe

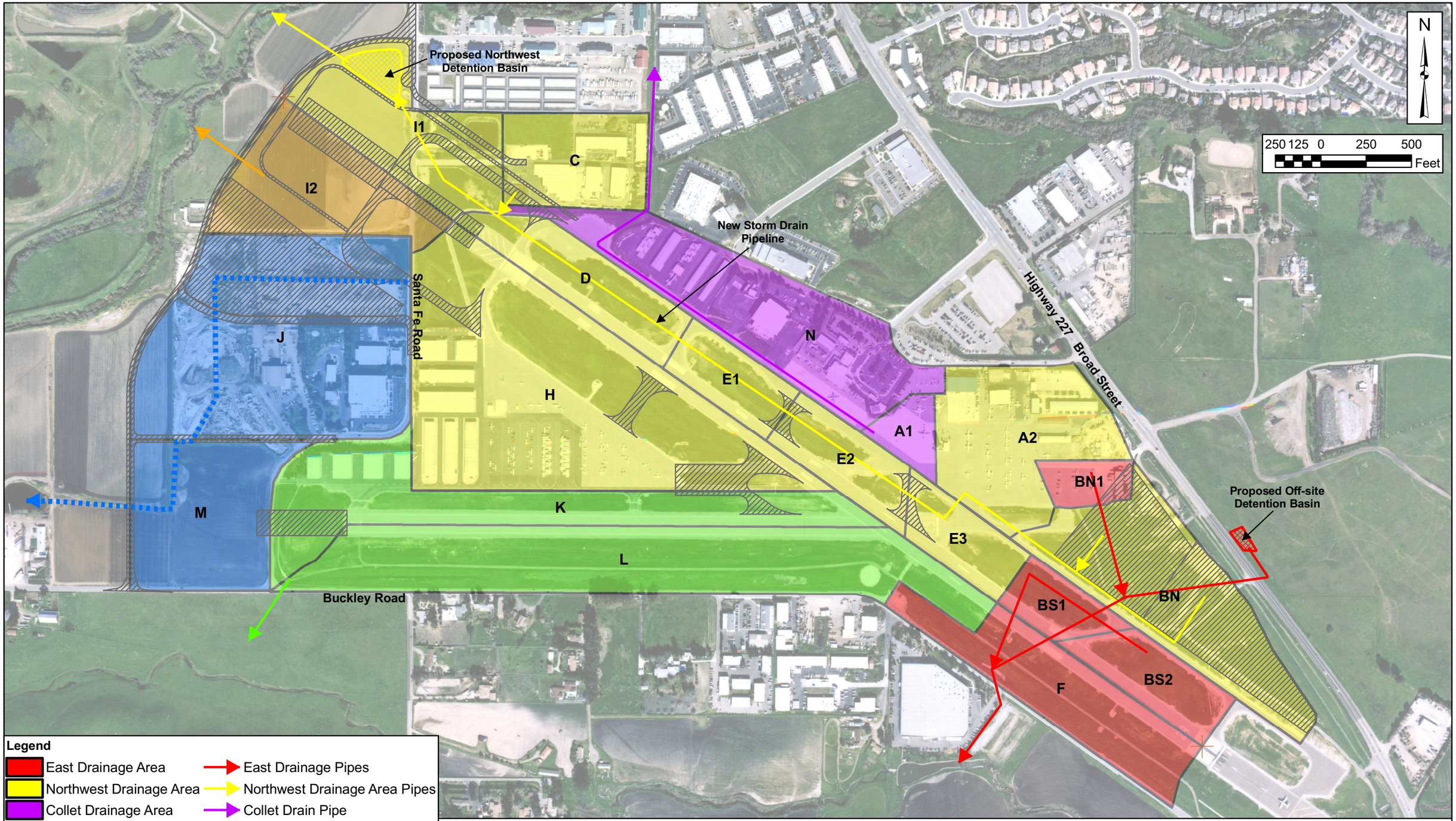
SAN LUIS OBISPO COUNTY AIRPORT

DRAINAGE - EXISTING
FIGURE 11

MEAD & HUNT

February 2006

X:\19430\05001\Tech\GIS\Existing.mxd



SAN LUIS OBISPO COUNTY AIRPORT

DRAINAGE - FUTURE
FIGURE 12

MEAD & HUNT

February 2006

X:\19430\05001\Tech\GIS\Future.mxd

Appendix A

Table 2-2 Subbasin Hydrologic Parameters for Existing and Future Conditions

Figure C-1 Watershed Subbasin Boundaries

Figure C-2 Subbasin Delineation Along the East Branch of San Luis Obispo Creek

Table 2.2
Subbasin Hydrologic Parameters for Existing and Future Conditions

Subbasin Number #	Drainage Area sq km (sq mi)	Channel Length meter (feet)	Length to Basin Centroid meter (feet)	Channel Slope	Existing Basin Roughness "n"	Existing Runoff Parameter CN	Existing Basin Lag hours	Future Basin Roughness "n"	Future Runoff Parameter CN	Future Basin Lag hours
102	2.290 (0.884)	3447 (11305)	1937 (6353)	0.12269	0.050	62.6	0.503	0.050	62.6	0.402
103	4.193 (1.619)	3320 (10888)	1869 (6129)	0.07752	0.050	62.8	0.533	0.050	62.8	0.427
104	0.912 (0.352)	733 (2403)	420 (1379)	0.00707	0.050	62.6	0.268	0.050	62.6	0.215
105	0.837 (0.323)	1888 (6191)	1163 (3815)	0.01211	0.047	66.6	0.476	0.045	67.7	0.381
106	3.577 (1.381)	3640 (11940)	1841 (6040)	0.11851	0.048	65.3	0.487	0.047	66.7	0.385
107	0.282 (0.109)	1022 (3352)	594 (1947)	0.01730	0.027	83.3	0.157	0.026	84.1	0.150
108	0.127 (0.049)	352 (1154)	291 (956)	0.00347	0.025	84.0	0.101	0.025	84.0	0.094
109	2.968 (1.146)	3038 (9964)	1579 (5179)	0.13769	0.047	68.0	0.406	0.041	73.2	0.306
110	0.518 (0.200)	890 (2920)	574 (1884)	0.01507	0.022	87.4	0.126	0.022	87.7	0.120
111	0.458 (0.177)	730 (2396)	606 (1988)	0.00584	0.025	87.6	0.159	0.019	93.4	0.124
112	1.083 (0.418)	1672 (5484)	793 (2601)	0.00310	0.037	78.7	0.402	0.034	78.9	0.309
113	0.909 (0.351)	1157 (3795)	406 (1331)	0.01739	0.050	67.1	0.264	0.050	67.1	0.212
114	0.041 (0.016)	246 (808)	70 (228)	0.00495	0.050	62.9	0.096	0.050	62.9	0.077
115	1.031 (0.398)	2499 (8196)	1148 (3764)	0.01501	0.048	71.2	0.521	0.048	71.2	0.412
116	0.078 (0.030)	539 (1769)	265 (869)	0.00678	0.050	62.9	0.202	0.050	62.9	0.162
117	0.671 (0.259)	1613 (5292)	874 (2867)	0.00170	0.050	64.9	0.628	0.050	64.9	0.502
118	1.054 (0.407)	1796 (5890)	1035 (3396)	0.00475	0.050	66.5	0.573	0.050	66.5	0.459
119	0.860 (0.332)	2671 (8760)	1502 (4927)	0.00948	0.037	80.0	0.501	0.037	80.2	0.397
202	0.860 (0.332)	1281 (4203)	693 (2274)	0.05164	0.039	75.1	0.216	0.029	82.9	0.161
203	0.448 (0.173)	1552 (5091)	733 (2404)	0.07995	0.050	67.2	0.277	0.030	83.0	0.183
205	0.606 (0.234)	1670 (5476)	889 (2917)	0.06849	0.050	66.6	0.314	0.028	80.0	0.196

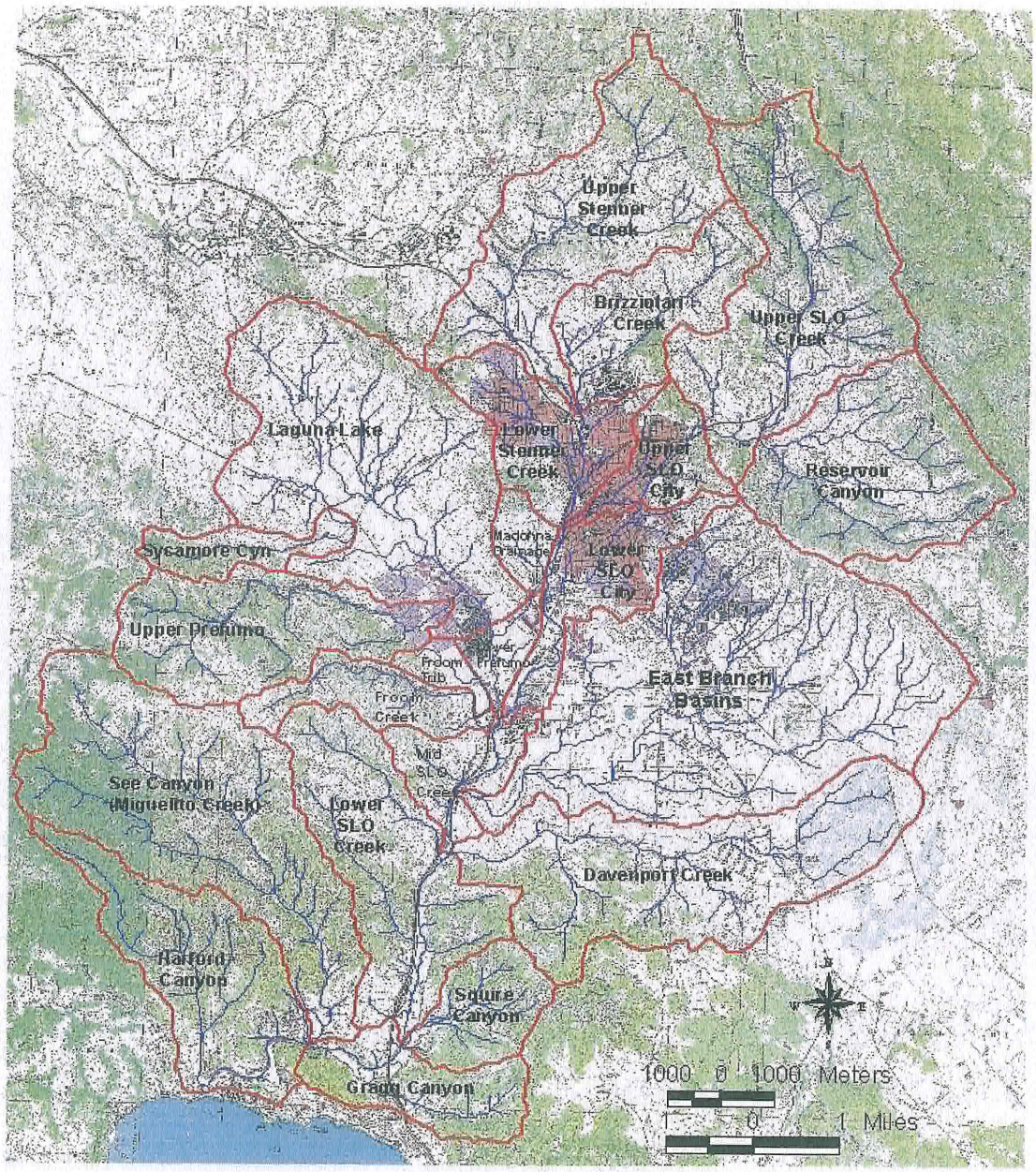


Figure C-1. Watershed Sub-Basin Boundaries

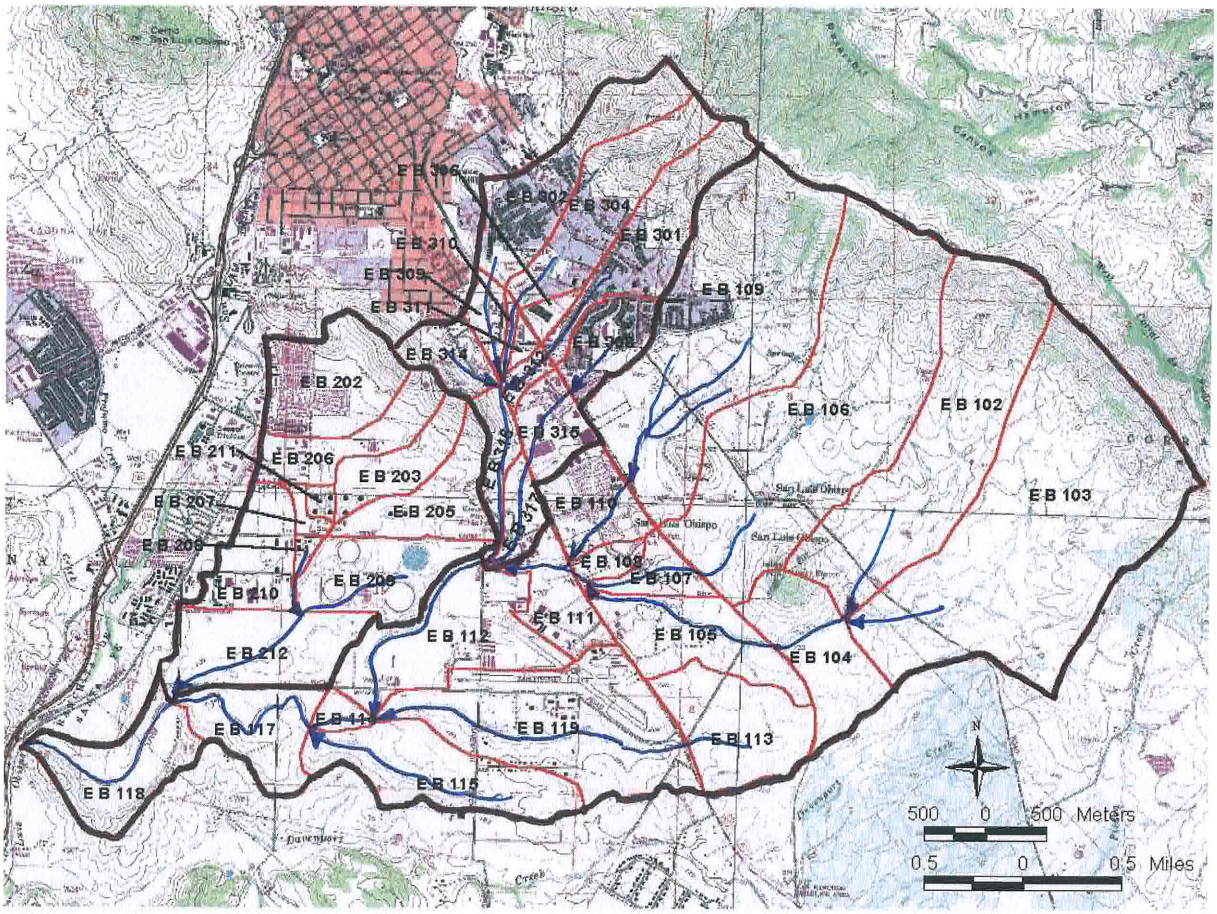


Figure C-2. Sub-basin delineation along the East Branch of San Luis Obispo Creek follows the *City of San Luis Obispo Storm Drain Master Plan* (Boyle Engineering Corporation, 1999).

C-1.2 Watershed Model

The watershed model was formed by splitting the watershed into 61 individual sub-basins (**Figure C-1**). To maintain consistency with the recently published *San Luis Obispo Storm Drainage Master Plan* (Boyle Engineering Corporation, 1999), basin boundaries within the watershed of the East Fork of San Luis Obispo Creek were taken from that report. The SCS loss-rate and the SCS unit hydrograph methods were used to determine runoff hydrographs from each of the sub-basins, based on a set of 24-hour design storms.

Map Key: Major drainage sub-basins of the East Branch San Luis Obispo Creek are delineated by the thick black lines.

There are three main sub-basins, 100, 200, and 300. Basin 300 includes Acacia Creek and Orcutt Creek, which join the East Branch of San Luis Obispo Creek just upstream of the proposed runway extension.

Appendix B

Cost Estimate

Table B-1

Summary of Costs for Drainage Plan Alternatives

Alternative Plan	Estimated Total Cost
1	$588,250
2	$235,625
3	$10,545,000

Table B-2

Cost Estimate for Alternative Plan 1 - Increase Left Overbank Conveyance

No.	Item Description	Unit	Unit Cost	Estimated Quantity	Total Cost
1	**Excavating Left Overbank Channel**				
1.1	Excavation and average 2 miles haul	CY	$6.00	57,878	$347,270
1.2	Hydroseeding	SF	$0.05	297,460	$14,873
				Subtotal (Direct Construction Costs)	$362,000
				Engineering Design (10%)	$36,200
				Construction Supervision (10%)	$36,200
				Legal & Administration (5%)	$18,100
				Environmental Mitigation	*see note 1*
				Subtotal	$452,500
				Contingency (30%)	$135,750
	Total Estimated Project Cost				**$588,250**

Notes: 1. Costs for environmental mitigation not included

Table B-3

Cost Estimate for Alternative Plan 2 - Diversion to Old Channel

No.	Item Description	Unit	Unit Cost	Estimated Quantity	Total Cost
1	**Connecting Main and Old Channels**				
1.1	Excavation and average 2 miles haul	CY	$6.00	19,115	$114,688
1.2	Hydroseeding	SF	$0.05	47,086	$2,354
2	Clearing				
2.1	Clear and grub medium	Acre	$7,000.00	4	$28,000
				Subtotal (Direct Construction Costs)	$145,000
				Engineering Design (10%)	$14,500
				Construction Supervision (10%)	$14,500
				Legal & Administration (5%)	$7,250
				Environmental Mitigation	*see note 1*
				Subtotal	$181,250
				Contingency (30%)	$54,375
	Total Estimated Project Costs				**$235,625**

Notes: 1. Costs for environmental mitigation not included

Table B-4

Cost Estimate for Alternative Plan 3 - Diversion Pipes

No.	Item Description	Unit	Unit Cost	Estimated Quantity	Total Cost
1	**Laying RCP**				
1.1	4X2.5m RCP	LF	$500.00	14,000	$7,000,000
1.2	Headwall	SF	$15,000.00	2	$30,000
				Subtotal (Direct Construction Costs)	$7,030,000
				Engineering Design (10%)	$703,000
				Construction Supervision (10%)	$703,000
				Legal & Administration (5%)	$351,500
				Environmental Mitigation	*see note 1*
				Subtotal	$8,787,500
				Contingency (20%)	$1,757,500
	Total Estimated Project Costs				**$10,545,000**

Notes: 1. Costs for environmental mitigation not included

Appendix C

Runoff Curve Numbers for Selected Land Uses

TABLE 5.5.2
Runoff curve numbers for selected agricultural, suburban, and urban land uses (antecedent moisture condition II, $I_a = 0.2S$)

Land Use Description		Hydrologic Soil Group			
		A	B	C	D
Cultivated land[1]: without conservation treatment		72	81	88	91
with conservation treatment		62	71	78	81
Pasture or range land: poor condition		68	79	86	89
good condition		39	61	74	80
Meadow: good condition		30	58	71	78
Wood or forest land: thin stand, poor cover, no mulch		45	66	77	83
good cover[2]		25	55	70	77
Open Spaces, lawns, parks, golf courses, cemeteries, etc.					
good condition: grass cover on 75% or more of the area		39	61	74	80
fair condition: grass cover on 50% to 75% of the area		49	69	79	84
Commercial and business areas (85% impervious)		89	92	94	95
Industrial districts (72% impervious)		81	88	91	93
Residential[3]:					
Average lot size	Average % impervious[4]				
1/8 acre or less	65	77	85	90	92
1/4 acre	38	61	75	83	87
1/3 acre	30	57	72	81	86
1/2 acre	25	54	70	80	85
1 acre	20	51	68	79	84
Paved parking lots, roofs, driveways, etc.[5]		98	98	98	98
Streets and roads:					
paved with curbs and storm sewers[5]		98	98	98	98
gravel		76	85	89	91
dirt		72	82	87	89

[1]For a more detailed description of agricultural land use curve numbers, refer to Soil Conservation Service, 1972, Chap. 9

[2]Good cover is protected from grazing and litter and brush cover soil.

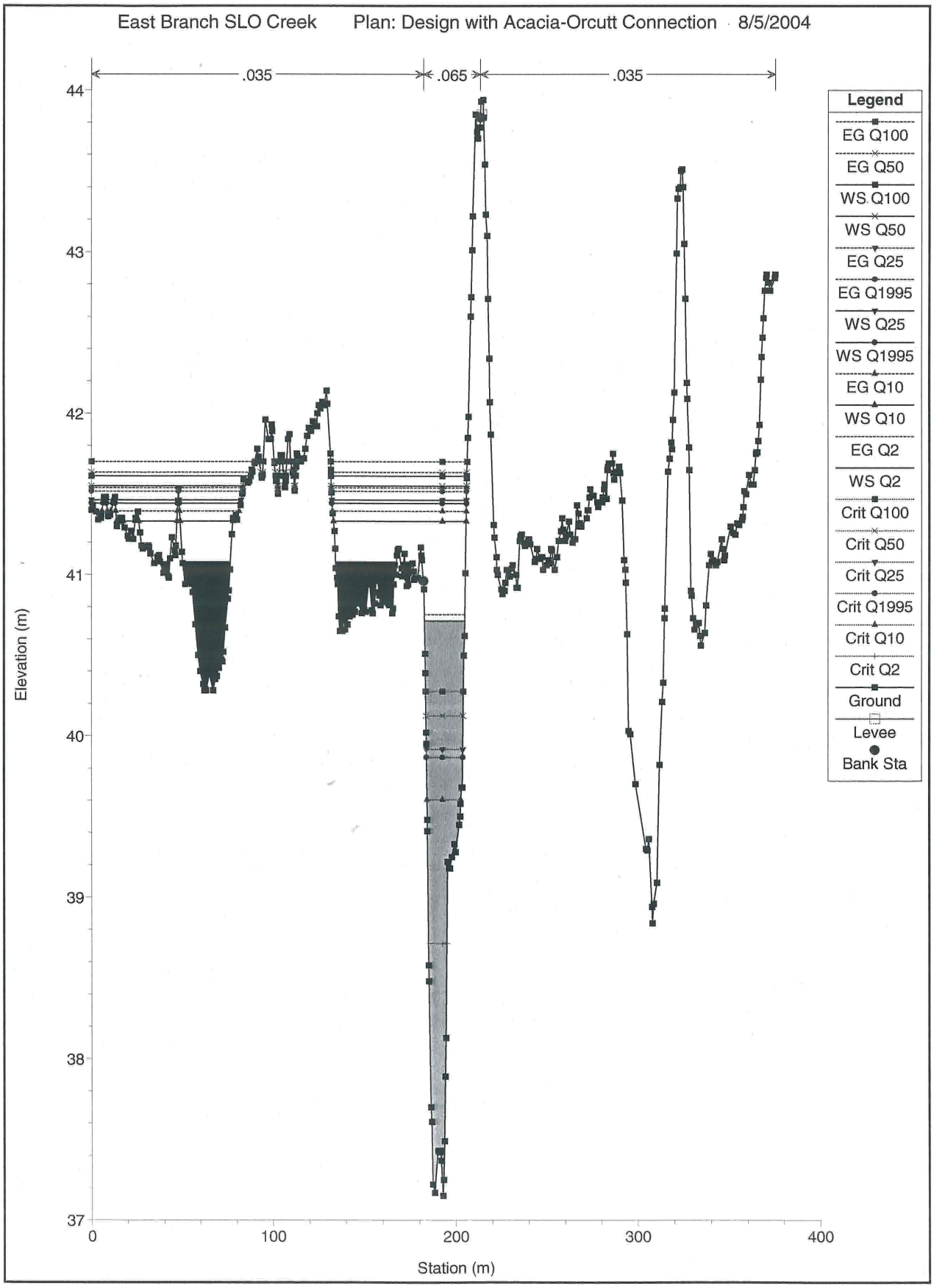
[3]Curve numbers are computed assuming the runoff from the house and driveway is directed towards the street with a minimum of roof water directed to lawns where additional infiltration could occur.

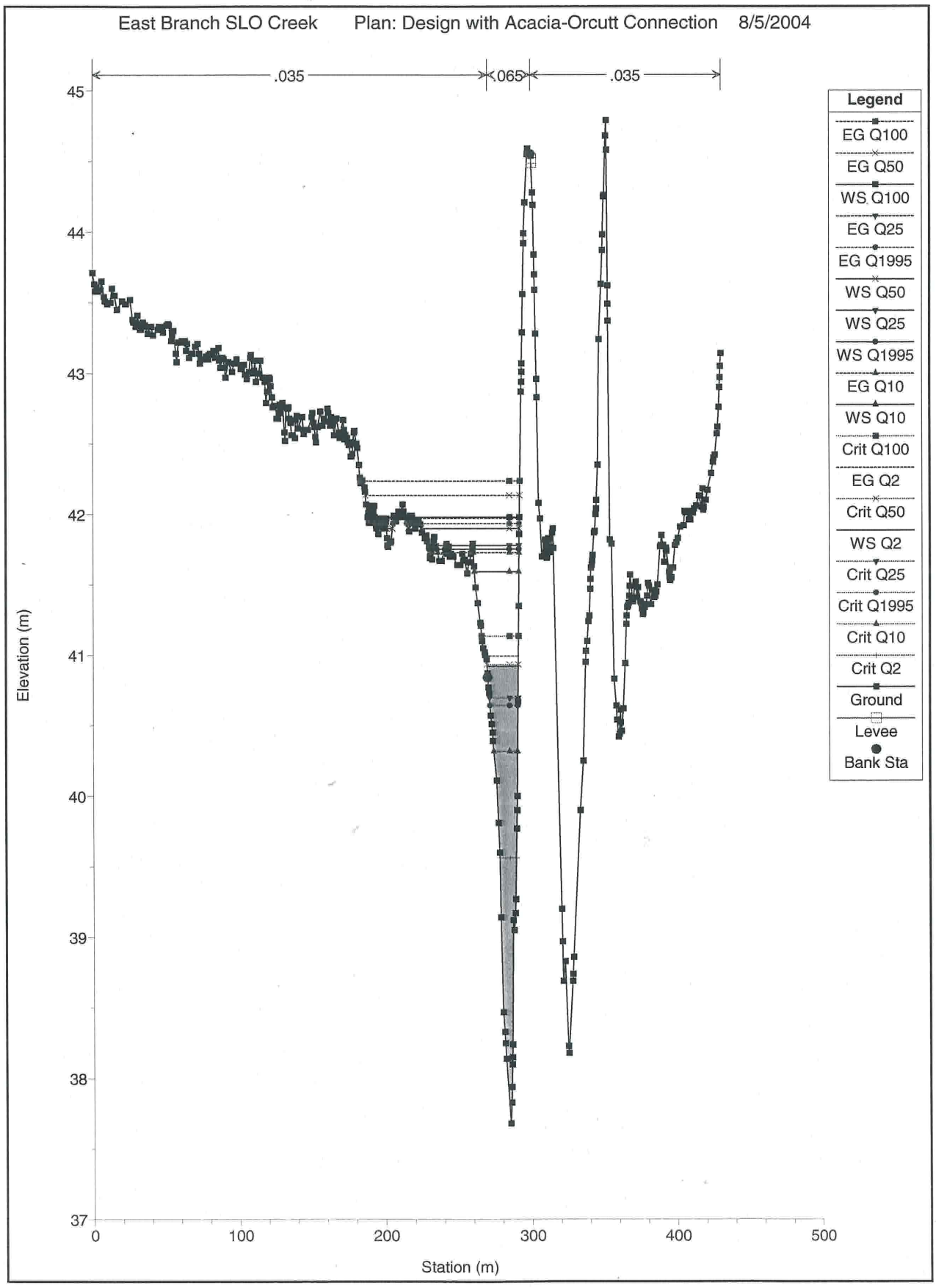
[4]The remaining pervious areas (lawn) are considered to be in good pasture condition for these curve numbers.

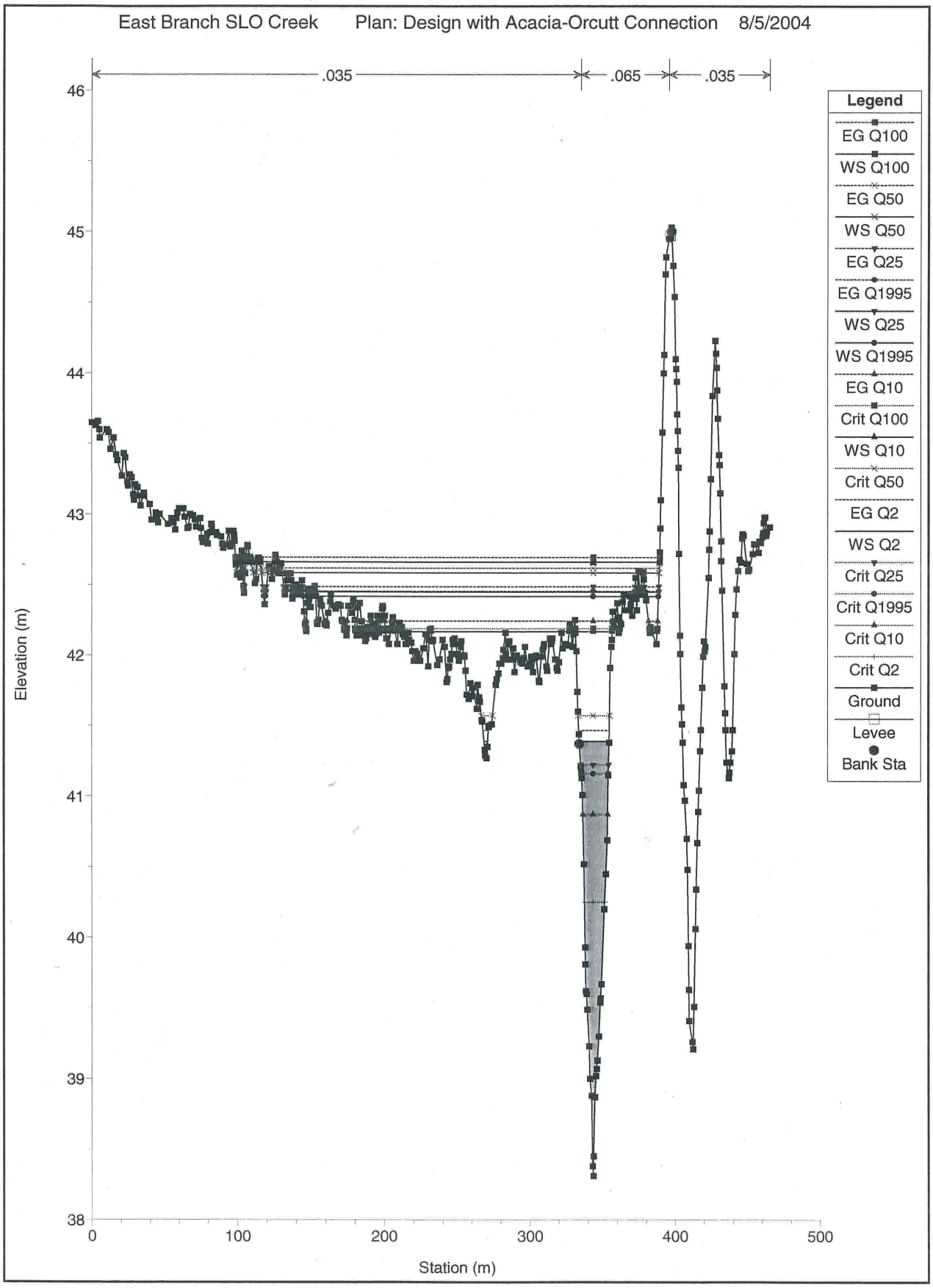
[5]In some warmer climates of the country a curve number of 95 may be used.

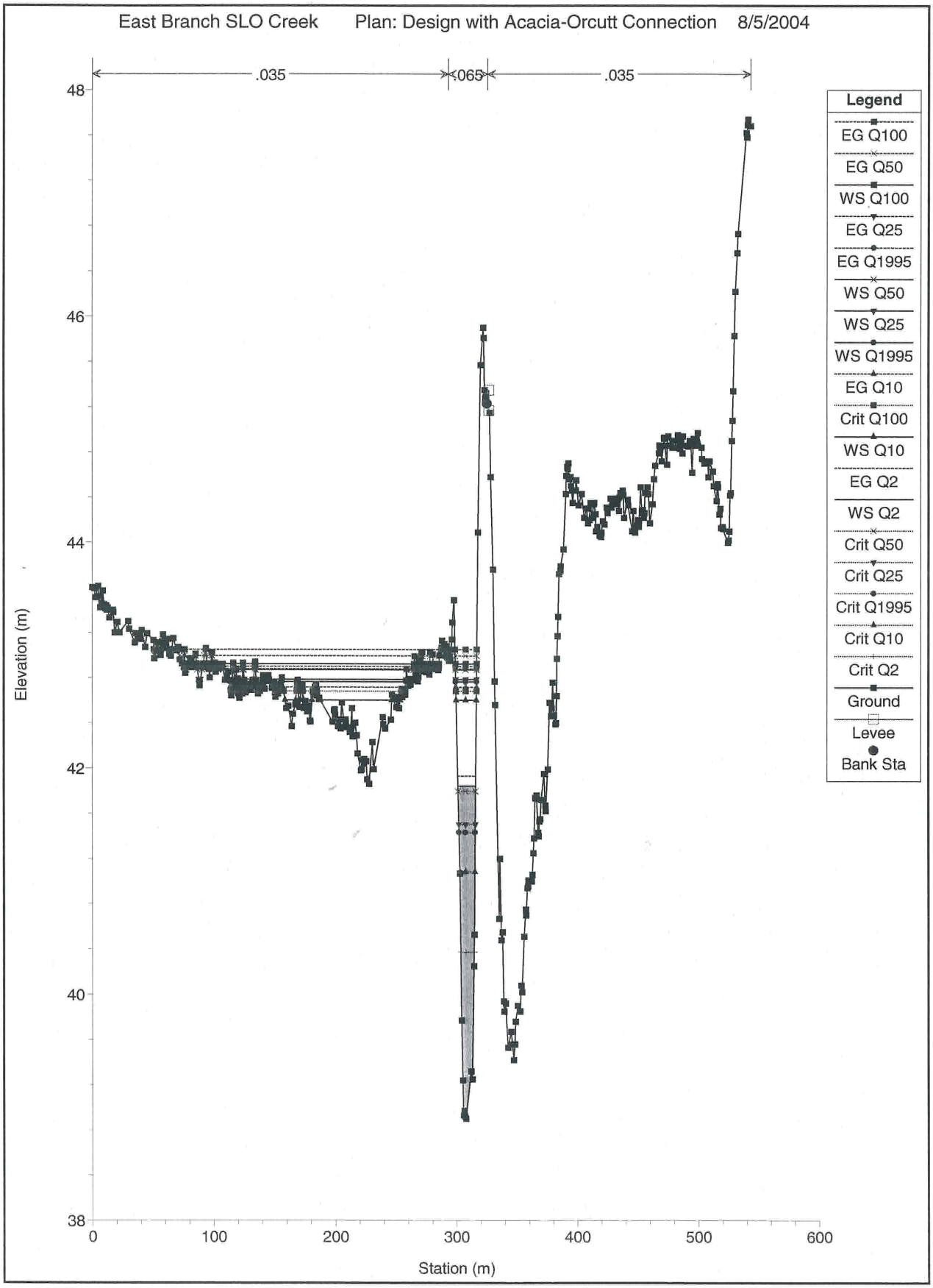
Appendix D

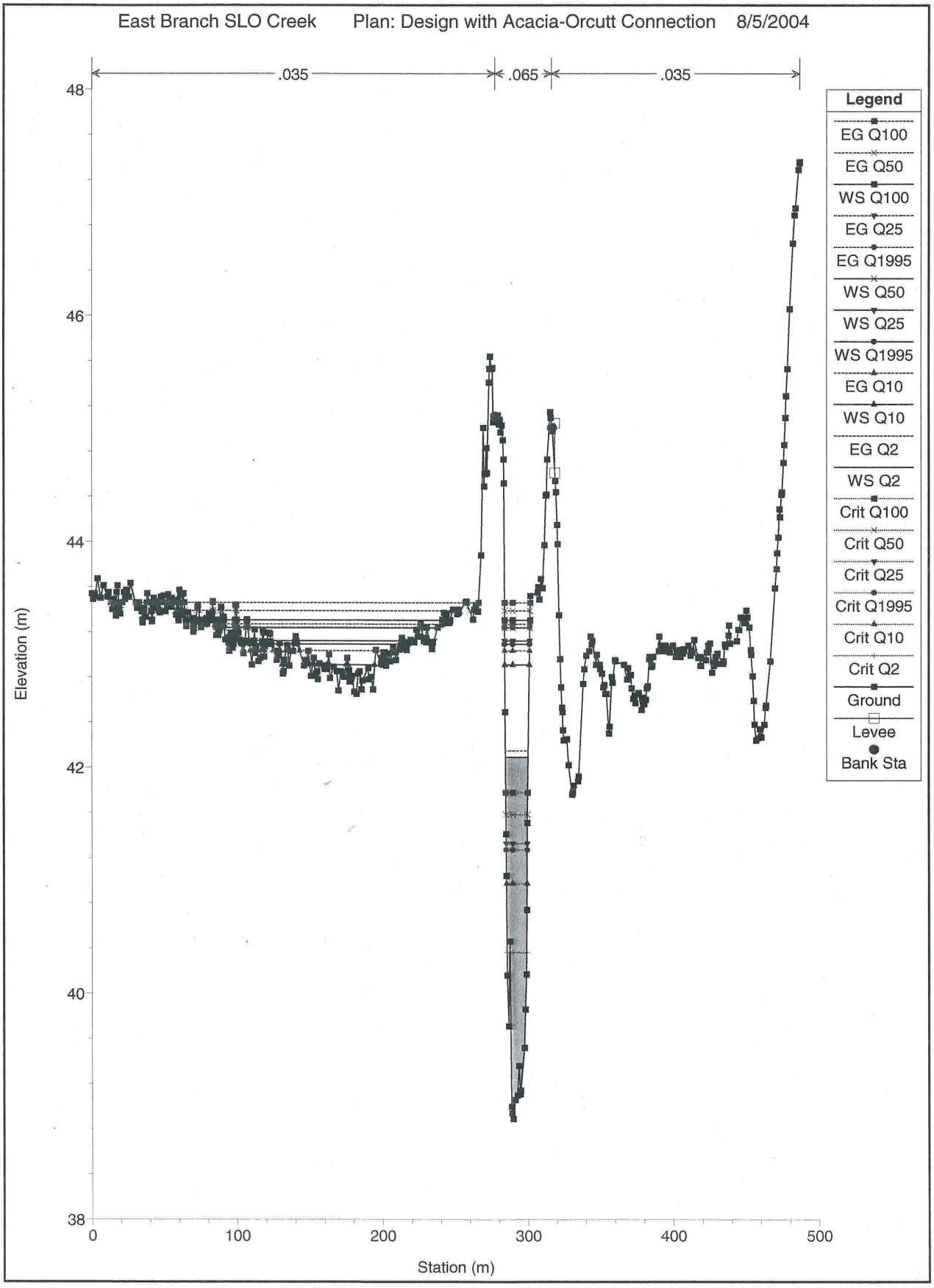
HEC-RAS Cross Sections

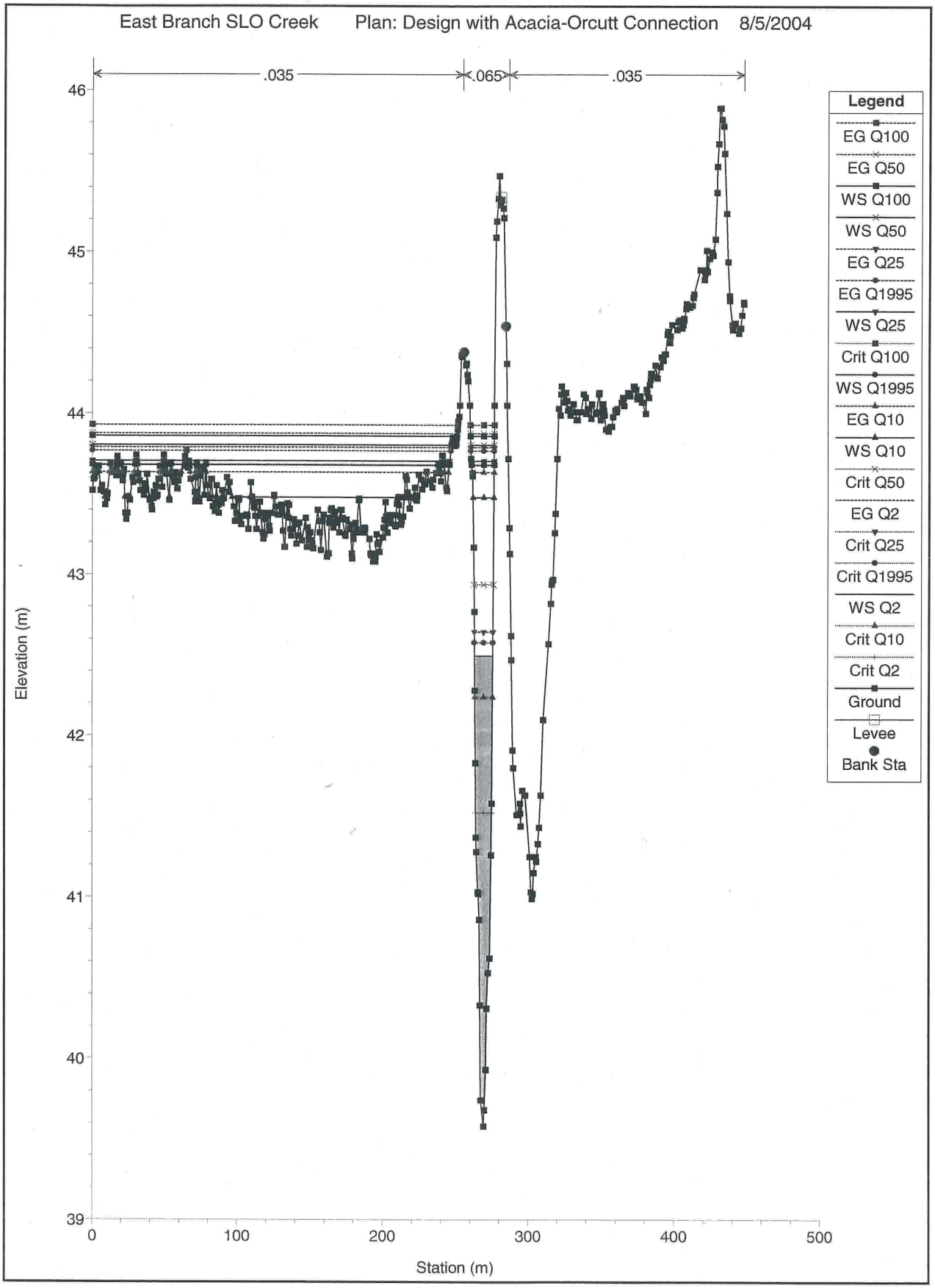

East Branch SLO Creek
Plan: Design with Acacia-Orcutt Connection
8/5/2004
.035
.065
.035
Legend
EG Q100
EG Q50
WS Q100
WS Q50
EG Q25
EG Q1995
WS Q25
WS Q1995
EG Q10
WS Q10
EG Q2
WS Q2
Crit Q100
Crit Q50
Crit Q25
Crit Q1995
Crit Q10
Crit Q2
Ground
Levee
Bank Sta
Elevation (m)
44
43
42
41
40
39
38
37
0
100
200
300
400
Station (m)

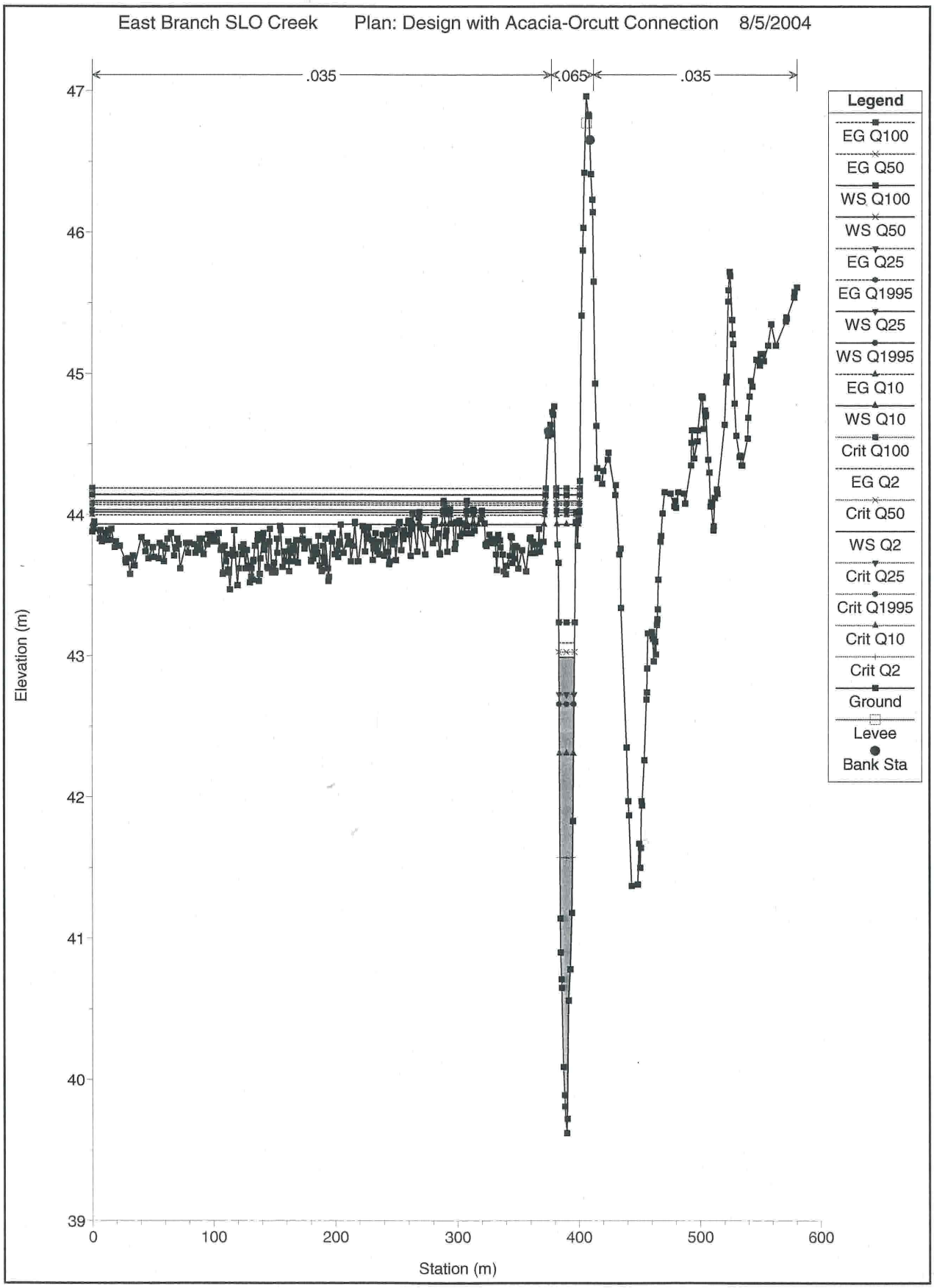

East Branch SLO Creek Plan: Design with Acacia-Orcutt Connection 8/5/2004
.035
.065
.035
Legend
EG Q100
EG Q50
WS Q100
EG Q25
EG Q1995
WS Q50
WS Q25
WS Q1995
EG Q10
WS Q10
Crit Q100
EG Q2
Crit Q50
WS Q2
Crit Q25
Crit Q1995
Crit Q10
Crit Q2
Ground
Levee
Bank Sta
Elevation (m)
45
44
43
42
41
40
39
38
37
0
100
200
300
400
500
Station (m)


East Branch SLO Creek Plan: Design with Acacia-Orcutt Connection 8/5/2004
.035
.065
.035
Legend
EG Q100
WS Q100
EG Q50
WS Q50
EG Q25
EG Q1995
WS Q25
WS Q1995
EG Q10
Crit Q100
WS Q10
Crit Q50
EG Q2
WS Q2
Crit Q25
Crit Q1995
Crit Q10
Crit Q2
Ground
Levee
Bank Sta
Elevation (m)
46
45
44
43
42
41
40
39
38
0
100
200
300
400
500
Station (m)


East Branch SLO Creek
Plan: Design with Acacia-Orcutt Connection
8/5/2004
.035
.065
.035
48
46
44
42
40
38
Elevation (m)
0
100
200
300
400
500
600
Station (m)
Legend
EG Q100
EG Q50
WS Q100
EG Q25
EG Q1995
WS Q50
WS Q25
WS Q1995
EG Q10
Crit Q100
WS Q10
EG Q2
WS Q2
Crit Q50
Crit Q25
Crit Q1995
Crit Q10
Crit Q2
Ground
Levee
Bank Sta


East Branch SLO Creek Plan: Design with Acacia-Orcutt Connection 8/5/2004
.035
.065
.035
48
46
44
42
40
38
Elevation (m)
0
100
200
300
400
500
Station (m)
Legend
EG Q100
EG Q50
WS Q100
EG Q25
EG Q1995
WS Q50
WS Q25
WS Q1995
EG Q10
WS Q10
EG Q2
WS Q2
Crit Q100
Crit Q50
Crit Q25
Crit Q1995
Crit Q10
Crit Q2
Ground
Levee
Bank Sta


East Branch SLO Creek Plan: Design with Acacia-Orcutt Connection 8/5/2004
.035
.065
.035
Elevation (m)
Station (m)
Legend
EG Q100
EG Q50
WS Q100
WS Q50
EG Q25
EG Q1995
WS Q25
Crit Q100
WS Q1995
EG Q10
WS Q10
Crit Q50
EG Q2
Crit Q25
Crit Q1995
WS Q2
Crit Q10
Crit Q2
Ground
Levee
Bank Sta


East Branch SLO Creek Plan: Design with Acacia-Orcutt Connection 8/5/2004
.035
.065
.035
Legend
EG Q100
EG Q50
WS Q100
WS Q50
EG Q25
EG Q1995
WS Q25
WS Q1995
EG Q10
WS Q10
Crit Q100
EG Q2
Crit Q50
WS Q2
Crit Q25
Crit Q1995
Crit Q10
Crit Q2
Ground
Levee
Bank Sta
Elevation (m)
47
46
45
44
43
42
41
40
39
0
100
200
300
400
500
600
Station (m)

APPENDIX L

Notice of Preparation and Responses to Notice of Preparation

Notice of Preparation

To: Responsible Agency

From: San Luis Obispo County Regional Airport
903-5 Airport Drive
San Luis Obispo CA 93401

Subject: Notice of Preparation of a Draft Environmental Impact Report

The County of San Luis Obispo will prepare an Environmental Impact Report (EIR) for the project identified below. We need to know the views of your agency as to the scope and content of the environmental information that is germane to your agency's statutory responsibilities in connection with the proposed project. Your agency will need to use the EIR prepared by our agency when considering your permit or other approval for the project.

The project description, location, and the potential environmental effects are contained in the attached materials.

Due to the time limits mandated by State Law, your response must be sent at the earliest possible date but not later than 30 days after receipt of this notice.

Please send your response to Klaasje Nairne at the address above. We will need the name for a key contact person at your agency.

Project Title: San Luis Obispo County Regional Airport Master Plan Update EIR

Date: 1/4/06

Signature: William T. Robeson

Title: Senior Planner

Telephone: (805) 781-5607

INTRODUCTON TO THE NOTICE OF PREPARATION

A Notice of Preparation (NOP) is a requirement of the California Environmental Quality Act (CEQA) as an initial step in the development process of an Environmental Impact Report (EIR). The NOP is a brief notice sent by the lead agency (San Luis Obispo County), the "County," to notify all responsible agencies, trustee agencies, and involved federal agencies that the lead agency plans to prepare an EIR. The purpose of this notice is to solicit guidance from those agencies as to the scope and content of the environmental information to be included in the EIR. The CEQA *Guidelines* state that the NOP must provide, at a minimum, the following three items of information: a description of the proposed project; the location of the project, which may be shown on a map attached to the NOP; and the probable environmental effects of the project.

DESCRIPTION OF THE PROPOSED PROJECT

The proposed project is based on the concepts developed during the preparation of the proposed San Luis Obispo County Regional Airport Master Plan Update, related planning efforts, and discussions with the three scheduled air carriers serving San Luis Obispo County Regional Airport (SBP). The Airport Master Plan identifies airside and landside components, many related to extending Runway 11/29 at the Runway 11 end. The 800-foot runway extension is intended to accommodate the forecasted demand at SBP, which includes the demand for regional jet service.

Tables 1 and 2 provide a summary of the project components associated with the proposed project under Phase I (2010) and Phase II (2023), respectively. Figures 1 and 2 show the locations of project components associated with the proposed project in the years 2010 and 2023, respectively.

The proposed project would result in the importation of approximately 320,000 cubic yards of fill material. The majority of this fill material, which would be used for a variety of project components associated with the runway extension (including the relocation of Santa Fe Road, the perimeter service road, the extension of Taxiway A, and the Runway Safety Area), would be imported from an area known as "The Flower Mound" in the northeastern portion of the Chevron property on the north side of Tank Farm Road. It is anticipated that about 240,000 cubic yards of fill material is available from The Flower Mound location. The remainder of the fill material would be obtained from other sources in the vicinity of the Airport. The intent is to select fill source(s) with relatively clean fill material and shorter hauling distances to the Airport.

The proposed project also would result in the relocation of Santa Fe Road and the replacement of the Santa Fe Road bridge over the East Fork of San Luis Obispo Creek. It is anticipated that the replacement bridge would be one of the first improvements constructed to allow for haul trucks to use the replacement bridge to import fill material to the project site. The design of the bridge would incorporate a structure for diverting floodwaters into a swale parallel to the East Fork of San Luis Obispo Creek.

TABLE 1
PHASE I PROJECT COMPONENTS

Project	Description
	AIRFIELD FACILITIES
A-1	Construct **Runway 11 EMAS**
A-2	Construct **Runway 29 EMAS**
A-3	Extend **Runway 11** by 800 feet for a total of 6,100 feet
A-4	Extend (and connect) parallel **Taxiway A** by 800 feet
A-5	Construct **Taxiway A hold apron** (interim until Taxiway A is extended)
A-6	Develop **perimeter service road** around the extended end of Runway 11
A-7	Relocate **navigation aids** (glide slope indicator / VASI)
A-8	Repaint **runway markings** and improve **runway lighting systems**
	AVIATION SUPPORT FACILITIES
S-1	Acquire **Filbin Property**
S-2	Grade for **runway safety area** (RSA) and **object free area** (OFA) at Runway 11 end
S-3	Import **fill** to support runway and taxiway extensions, RSA, and OFA at Runway 11 end
S-4	Import **fill** to support perimeter service road and Santa Fe Road
S-5	Grade the **Flower Mound** to use for fill material
S-6	Remove and replace **Westside Detention Basin**
S-7	Construct **new swale** parallel to East Fork for floodwater containment
S-8	Construct **drainage improvements**
S-9	Acquire **easement** on portion of CB&I property
S-10	Acquire portion of **Saes property**
S-11	Demolish portion of **surface parking lot** on Saes property
S-12	Relocate **Saes parking lot** and other Saes facilities
S-13	Relocate **utilities** (12kV line, telephone)
S-14	Grade for relocated **glide slope indicator**
	NON-AVIATION PROJECTS
N-1	Close **Santa Fe Road** between Buckley and Tank Farm Roads on a temporary basis
N-2	Realign **Santa Fe Road** between Buckley and Tank Farm Roads
N-3	Construct **replacement bridge for Santa Fe Road** over the East Fork of SLO Creek
N-4	Relocate **driveways** that provide local access from Santa Fe Road
N-5	Remove Fiero Lane Water District **settling pond**

NOTE: Phase I project components are depicted on Figure 1.

SOURCE: San Luis Obispo County Regional Airport Master Plan, 2005.

TABLE 2
PHASE II PROJECT COMPONENTS

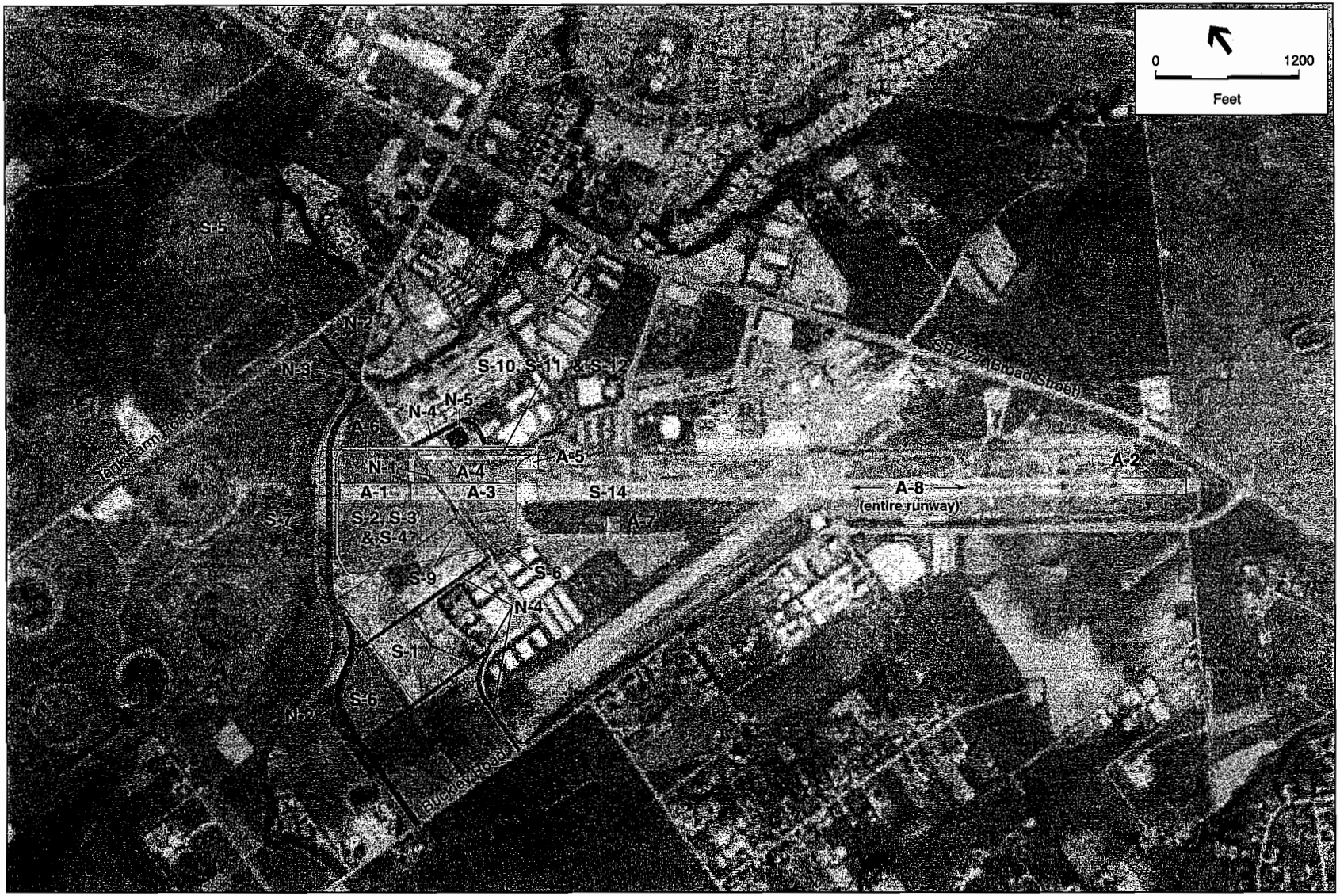
Project	Description
	AIRFIELD FACILITIES
A-11	Extend (and connect) parallel **Taxiway M** by 800 feet
A-12	Relocate **perimeter service road** adjacent to Taxiway M
A-13	Extend **Runway 7** by 500 feet for a total of 3,000 feet
A-14	Extend **Taxiway J** by 500 feet
A-15	Extend **approach lighting system** (ALS) and construct access road to ALS
	AVIATION SUPPORT FACILITIES
S-19	Acquire remainder of **CB&I property**
S-20	Demolish existing **CB&I structures**
S-21	Acquire remainder of **Saes property**
S-22	Demolish **improvements** on remainder of Saes property
S-23	Grade for **Buckley Road site development** and for **private hangar development**
S-24	Construct **West Side Hangar Development** (phases 1 and 2)
S-25	Conduct **siting study** for Air Traffic Control Tower relocation (FAA responsibility)
S-26	Relocate **Air Traffic Control Tower** (FAA responsibility)

NOTE: Phase II project components are depicted on Figure 2.

SOURCE: San Luis Obispo County Regional Airport Master Plan, 2005.

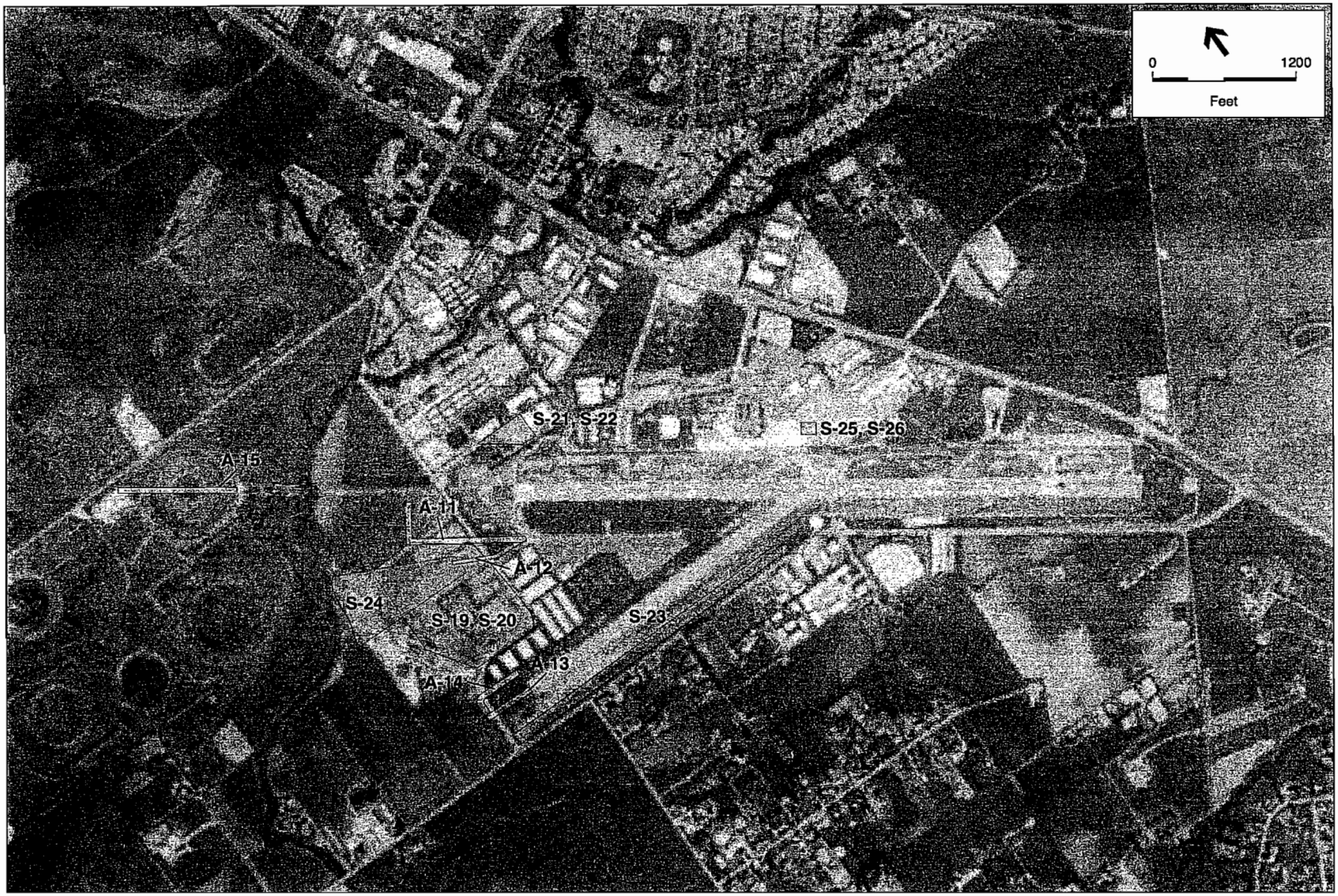
LOCATION OF THE PROPOSED PROJECT

SBP is located approximately three miles south of downtown San Luis Obispo in unincorporated San Luis Obispo County. Primary access to the Airport is via State Route 227 (SR 227). The Airport is generally bounded by SR 227 on the east, Buckley Road on the west and south, and Santa Fe Road and light industrial development south of Tank Farm Road between Santa Fe Road and SR 227 on the north.



SOURCE: San Luis Obispo County Regional Airport Master Plan, 2005

Figure 1
Proposed Action-
Phase I (2010) Project Components



SOURCE: San Luis Obispo County Regional Airport Master Plan, 2005

San Luis Obispo County Regional Airport Master Plan Update EA-EIR . 203092

Figure 2
Proposed Action-
Phase II (2023) Project Components

PROBABLE ENVIRONMENTAL EFFECTS OF THE PROJECT

The CEQA *Guidelines* require that an NOP identify the probable environmental impacts of a proposed project.

Based on initial environmental reconnaissance tasks performed by the consultant as well as existing environmental studies for the Airport, the County has determined that implementation of the proposed project has the potential to result in significant impacts discussed under the following Initial Study Checklist topics:

- Aesthetics
- Agricultural Resources
- Air Quality
- Biological Resources
- Cultural Resources
- Geology and Soils
- Hazards and Hazardous Materials;
- Hydrology and Water Quality
- Land Use and Planning
- Mineral Resources
- Noise
- Population and Housing
- Public Services
- Recreation
- Transportation/Traffic
- Utilities and Service Systems

Because the County has determined that the proposed project may result in significant environmental impacts for the topics listed above, an EIR will be prepared that will:

- provide full and careful analysis of each potential impact, based to the extent possible on scientific and factual information;
- identify any feasible mitigation measures that would avoid or lessen impacts identified as significant; and
- identify alternatives to the project as proposed that would avoid or substantially lessen any significant impacts of the project while feasibly attaining most of the basic project objectives.

ENVIRONMENTAL DOCUMENTATION PROCESS

Since the County would use federal money for development of components of the Master Plan, the projects are subject to the National Environmental Policy Act (NEPA). The Federal Aviation Administration (FAA) will serve as the lead agency for NEPA and will prepare an Environmental Assessment.

ENVIRONMENTAL CHECKLIST FORM

Project title: San Luis Obispo County Regional Airport Master Plan Update

Lead agency name and address: San Luis Obispo County, 1050 Monterey Street, San Luis Obispo, California 93404

Contact person and phone number: Bill Robeson (805) 781-5607

Project location: San Luis Obispo County Regional Airport

Project sponsor's name and address: San Luis Obispo County Regional Airport, 903-5 Airport Drive, San Luis Obispo, California 93401

Description of project: (Describe the whole action involved, including but not limited to later phases of the project, and any secondary, support, or off-site features necessary for its implementation. Attach additional sheets if necessary.)

See Attached Notice of Preparation – Description of the Project

Surrounding land uses and setting: Briefly describe the project's surroundings:

See Attached Notice of Preparation – Location of the Project

Other public agencies whose approval is required (e.g., permits, financing approval, or participation agreement): Federal Aviation Administration, Federal Highway Administration, U.S. Army Corps of Engineers, U.S. Fish and Wildlife Service, California Department of Transportation, California Department of Fish and Game, San Luis Obispo County Air Pollution Control District, Regional Water Quality Control Board, State Water Resources Control Board

ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED

The environmental factors checked below would be potentially affected by this project, involving at least one impact that is a "Potentially Significant Impact".

☒ Aesthetics	☒ Agriculture Resources	☒ Air Quality
☒ Biological Resources	☒ Cultural Resources	☒ Geology / Soils*
☒ Hazards & Hazardous Mat'ls	☒ Hydrology / Water Quality	☒ Land Use / Planning
☒ Mineral Resources	☒ Noise	☒ Population /Housing
☒ Public Services	☒ Recreation	☒ Transportation/ Traffic
☒ Utilities/Service Systems	☒ Mandatory Findings of Significance	

* Geology / Soils analysis includes "Drainage, Erosion, and Sedimentation."

DETERMINATION

(To be completed by the Lead Agency)

On the basis of this initial evaluation:

☐ I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.

☐ I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.

☐ I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

☒ I find that the proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.

☐ I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

William T. Robeson
Signature

1/4/06
Date

Bill Robeson
Printed name

Ellen Carroll
For

DEPARTMENT OF TRANSPORTATION
DIVISION OF AERONAUTICS – M.S.#40
1120 N STREET
P. O. BOX 942873
SACRAMENTO, CA 94273-0001
PHONE (916) 654-4959
FAX (916) 653-9531
TTY (916) 651-6827

Flex your power!
Be energy efficient!

Mr. Bill Robeson
San Luis Obispo County
County Government Center, Room 310
San Luis Obispo, CA 93408-2040

February 2, 2006

Dear Mr. Robeson:

Re: San Luis Obispo County's Notice of Preparation of a Draft Environmental Impact Report for the San Luis Obispo County Regional Airport Master Plan Update; SCH# 2006011020

The California Department of Transportation (Caltrans), Division of Aeronautics (Division), reviewed the above-referenced document with respect to airport-related noise and safety impacts and regional aviation land use planning issues pursuant to the California Environmental Quality Act (CEQA). The Division has technical expertise in the areas of airport operations safety and airport land use compatibility. We are a funding agency for airport projects and we have permit authority for public and special use airports and heliports. The following comments are offered for your consideration.

The proposal is for the update to the San Luis Obispo County Regional Airport Master Plan.

Phase 1 (2010) project components include:

AIRFIELD FACILITIES
1. Construct Runway 11 EMAS
2. Construct Runway 29 EMAS
3. Extend Runway 11 by 800 feet for a total of 6,100 feet
4. Extend (and connect) parallel Taxiway A by 800 feet
5. Construct Taxiway A hold apron (interim until Taxiway A is extended)
6. Develop perimeter service road around extended end of Runway 11
7. Relocate navigation aids (glide slope indicator/VASI)
8. Repaint runway markings and improve runway lighting systems

AVIATION SUPPORT FACILITIES
1. Acquire Filbin Property
2. Grade for runway safety area (RSA) and object free area (OFA) at Runway 11 end
3. Import fill to support runway and taxiway extensions, RSA and OFA at Runway 11 end
4. Import fill to support perimeter service road and Santa Fe Road
5. Grade the Flower Mound to use for fill material
6. Remove and replace Westside Detention Basin
7. Construct new swale parallel to East Fork for floodwater containment
8. Construct drainage improvements
9. Acquire easement on portion of CB&I property
10. Acquire portion of Saes property
11. Demolish portion of surface parking lot on Saes property
12. Relocate Saes parking lot and other Saes facilities
13. Relocate utilities (12kV line, telephone)
14. Grade for relocation glide slop indicator

NON-AVIATION PROJECTS

1. Close Santa Fe Road between Buckley and Tank Farm Roads on a temporary bases
2. Realign Santa Fe Road between Buckley and Tank Farm Roads
3. Construct replacement bridge for Santa Fe Road over the East Fork of SLO Creek
4. Relocate driveways that provide local access from Santa Fe Road
5. Remove Fiero Lane Water District settling pond

Phase II (2023), project components include:

AIRFIELD FACILITIES

1. Extend (and connect) parallel Taxiway M by 800 feet
2. Relocate perimeter service road adjacent to Taxiway M
3. Extend Runway 7 by 500 feet for a total of 3,000 feet
   (please note: April 2000 Airport Layout Plan shows a 3259-foot length for Runway 7-25)
4. Extend Taxiway J by 500 feet
5. Extend approach lighting system (ALS) and construct access road to ALS

AVIATION SUPPORT FACILITIES

1. Acquire remainder of CB&I property
2. Demolish existing CB&I structures
3. Acquire remainder of Saes property
4. Demolish improvements on remainder of Saes property
5. Grade for Buckley Road site development and for private hangar development
6. Construct West Side Hangar Development (phases 1 and 2)
7. Conduct site study for Air Traffic Control Tower relocation (Federal Aviation Administration (FAA) responsibility)
8. Relocate Air Traffic Control Tower (FAA responsibility)

The proposed runway extensions will require an amended State Airport Permit in accordance with California Public Utilities Code (PUC) Section 21664.5 (b)(3). Detailed information regarding the State airport permit process is available on-line at http://www.dot.ca.gov/hq/planning/aeronaut/htmlfile/-airportpermit.php. The applicant should also be advised to contact the Division's Aviation Safety Officer for San Luis Obispo County, Dan Gargas, at (916) 654-5222, to request an amended State Airport Permit-Application package.

Prior to amending the State Airport Permit or releasing State funds for airport projects, the Division, as a Responsible Agency, must ensure that the proposal is in full compliance with CEQA. The issues of primary concern to us include airport-related noise and safety impacts on the surrounding community as well as the community's potential effect on airport operations. To ensure that the community will not be adversely impacted by aircraft operations, flight paths should avoid noise-sensitive and people intensive uses. Environmental documentation should include diagrams showing the location of proposed runway and the approach/departure flight paths. The diagrams should also depict the proximity of the proposed flight paths to any existing or proposed noise sensitive or people intensive uses. Consideration given to the issue of compatible land uses in the vicinity of the airport should help to relieve future conflicts between the airport and its neighbors.

PUC Section 21676.c requires that "each public agency within the boundaries of an airport land use commission plan shall, prior to the modification of its airport master plan, refer such proposed change to the airport land use commission." The airport land use commission must then determine whether the proposed master plan is consistent or inconsistent with the adopted compatibility plan for that airport. If inconsistencies are identified, then the airport land use commission should take steps to amend its airport land use compatibility plan.

PUC Section 21659 prohibits structures from penetrating airport imaginary surfaces in accordance with Federal Aviation Regulations (FAR) Part 77. The guidance in the FAA Advisory Circular 150/5370-2E, *Operational Safety on Airports During Construction*, should also be incorporated into the project design in order to identify any permanent or temporary construction-related impacts (e.g. construction cranes, etc.) to the airport/heliport imaginary surfaces. This advisory circular is available at http://www.faa.gov/ARP/-publications/acs/5370-2e.pdf. Depending on structural heights during construction, the FAA may require a Notice of Proposed Construction or Alteration (Form 7460-1) pursuant to FAR Part 77. Form 7460-1 is available at http://forms.faa.gov/forms/faa7460-1.pdf.

The protection of airports from incompatible land use encroachment is vital to California's economic future. Although the need for compatible and safe land uses near airports in California is both a local and a state issue, airport staff, airport land use commissions and airport land use compatibility plans are key to protecting an airport and the people residing and working in the vicinity of an airport. Consideration given to the issue of compatible land uses in the vicinity of an airport should help to relieve future conflicts between airports and their neighbors.

These comments reflect the areas of concern to the Division of Aeronautics with respect to airport-related noise and safety impacts and regional airport land use planning issues. We advise you to contact our District 5-San Luis Obispo office at (805) 549-3111 concerning surface transportation issues.

Thank you for the opportunity to review and comment on this proposal. We look forward to reviewing all future documentation for the Airport Master Plan update. If you have any questions, please call me at (916) 654-5314.

Sincerely,

Sandy Hesnard

SANDY HESNARD
Aviation Environmental Specialist

c: State Clearinghouse, San Luis Obispo County ALUC, San Luis Obispo County Regional Airport

NATIVE AMERICAN HERITAGE COMMISSION
915 CAPITOL MALL, ROOM 364
SACRAMENTO, CA 95814
(916) 653-4082
(916) 657-5390 - Fax

January 19, 2006

Bill Robeson
San Luis Obispo County
County Government Center, Room 310
San Luis Obispo, CA 93408-2040

RE: SCH# 2006011020 – San Luis Obispo County Regional Airport Master Plan Update

Dear Mr. Robeson:

The Native American Heritage Commission has reviewed the Notice of Preparation for the project referenced above. The California Environmental Quality Act (CEQA) requires that any project that causes a substantial adverse change in the significance of an historical resource, which includes archeological resources, is a significant effect requiring the preparation of an EIR (CEQA guidelines 15064.5(b)). To comply with this provision the lead agency is required to assess whether the project will have an adverse impact on historical resources within the project area, and if so to mitigate that effect. A 1980 cultural resources study was cited on page 7 of the document. An updated archaeological survey should be required. To adequately assess the project-related impact on cultural resources, the Commission recommends the following action be required:

- ✓ Contact the appropriate regional archaeological Information Center for a record search. The record search will determine:
  - If a part or all of the area of project effect (APE) has been previously surveyed for cultural resources.
  - If any known cultural resources have already been recorded on or adjacent to the APE.
  - If the probability is low, moderate, or high that cultural resources are located in the APE.
  - If a survey is required to determine whether previously unrecorded cultural resources are present.
- ✓ If an archaeological inventory survey is required, the final stage is the preparation of a professional report detailing the findings and recommendations of the records search and field survey.
  - The final report containing site forms, site significance, and mitigation measurers should be submitted immediately to the planning department. All information regarding site locations, Native American human remains, and associated funerary objects should be in a separate confidential addendum, and not be made available for pubic disclosure.
  - The final written report should be submitted within 3 months after work has been completed to the appropriate regional archaeological Information Center.
- ✓ Contact the Native American Heritage Commission for:
  - A Sacred Lands File Check. **USGS 7.5-minute quadrangle name, township, range, and section required.**
  - A list of appropriate Native American contacts for consultation concerning the project site and to assist in the mitigation measures. **Native American Contacts List attached.**
- ✓ Lack of surface evidence of archeological resources does not preclude their subsurface existence.
  - Lead agencies should include in their mitigation plan provisions for the identification and evaluation of accidentally discovered archeological resources, per California Environmental Quality Act (CEQA) §15064.5(f). In areas of identified archaeological sensitivity, a certified archaeologist and a culturally affiliated Native American, with knowledge in cultural resources, should monitor all ground-disturbing activities.
  - Lead agencies should include in their mitigation plan provisions for the disposition of recovered artifacts, in consultation with culturally affiliated Native Americans.
  - Lead agencies should include provisions for discovery of Native American human remains in their mitigation plan. Health and Safety Code §7050.5, CEQA §15064.5(e), and Public Resources Code §5097.98 mandates the process to be followed in the event of an accidental discovery of any human remains in a location other than a dedicated cemetery.

The Commission requests that you forward documentation establishing that the project area has been adequately assessed for the presence of historical resources. If it is found that historical resources would be impacted by project activities, please forward a copy of your mitigation plan.

Sincerely,

Rob Wood

Rob Wood
Environmental Specialist III

Native American Contacts
San Luis Obispo County
January 19, 2006

Beverly Salazar Folkes
1931 Shadybrook Drive
Thousand Oaks , CA 91362
805 492-7255
Chumash
Tataviam
Fernandeño

Peggy Odom
1339 24th Street
Oceano , 93445
(805) 489-5390
Chumash

Santa Ynez Band of Mission Indians
Vincent Armenta, Chairperson
P.O. Box 517
Santa Ynez , CA 93460
varmenta@santaynezchumash
(805) 688-7997
(805) 686-9578 Fax
Chumash

DNA/Diane Napoleone and Associates
6997 Vista del Rincon
La Conchita 93001
, CA
dnaassociates@sbcglobal.net
(805) 643-7492 (Home)
(805) 689-8050 (Cell)
Chumash

Julie Lynn Tumamait
365 North Pole Ave
Ojai , CA 93023
jtumamait@hotmail.com
(805) 646-6214
Chumash

Santa Ynez Tribal Elders Council
Adelina Alva-Padilla, Chair Woman
P.O. Box 365
Santa Ynez , CA 93460
elders@santaynezchumash.org
(805) 688-8446
(805) 693-1768 FAX
Chumash

Lei Lynn Odom
1339 24th Street
Oceano , CA 93445
(805) 489-5390
Chumash

Randy Guzman - Folkes
3044 East Street
Simi Valley , CA 93065-3929
randyfolkes@sbcglobal.net
(805) 579-9206
(805) 501-5279 (cell)
Chumash
Fernandeño
Tataviam
Shoshone Paiute
Yaqui

San Luis Obispo County Chumash Council
Chief Mark Steven Vigil
1030 Ritchie Road
Grover Beach , CA 93433
chiefmvigil@fix.net
(805) 481-2461
(805) 474-4729 - Fax
Chumash

Mary E. Trejo
P.O. Box 469
Santa Margarita , CA 93453
(805) 483-4280
Chumash

This list is current only as of the date of this document.

Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resources Code and Section 5097.98 of the Public Resources Code.

This list is only applicable for contacting local Native Americans with regard to cultural resources for the proposed SCH# 2006011020 - San Luis Obispo County Regional Airport Master Plan Update, San Luis Obispo County.

Native American Contacts
San Luis Obispo County
January 19, 2006

Mona Olivas Tucker
660 Camino Del Rey Chumash
Arroyo Grande 93420
, CA
(805) 489-1052 Home
(805) 748-2121 Cell

Salinan Tribe of Monterey, San Luis Obispo and San Benito Counties
John W. Burch
14650 Morro Road Salinan
Atascadero , CA 93422
(805) 235-2730 (Cell)
(805) 461-5192 (Fax)

Matthew Darian Goldman
660 Camino Del Rey Chumash
Arroyo Grande 93420
, CA
(805) 550-0461 Home

Salinan Tribe of Monterey, San Luis Obispo and San Benito Counties
Shirley Macagni, Cultural Resources Representative
1550 Guadalupe Road Salinan
Nipomo , CA 93444
(805) 343-1015
(805) 343-2726 (Fax)

Santa Ynez Band of Mission Indians
Laura Ray, Tribal Administrator
P.O. Box 517 Chumash
Santa Ynez , CA 93460
lray@santaynezchumash.net
(805) 688-7997
(805) 686-9578 Fax

Salinan Tribe of Monterey, San Luis Obispo and San Benito Counties
Bonnie Pierce
440 Highland Drive Salinan
Los Osos , CA 93402
(805) 582-1362 (Home)
(805) 781-1844 (Work)

Puilulaw Khus
2001 San Bernardo Creek Chumash
Morro Bay 93442
, CA

Xolon Salinan Tribe
Donna Haro
110 Jefferson Street Salinan
Bay Point , CA 94565
DMARIE_H@prodigy.net
(925) 709-6714
(925) 458-0341 (Fax)

Judith Bomar Grindstaff
63161 Argyle Road Salinan
King City 93930
, CA
(831) 385-3759 (Home)

Salinan Nation Cultural Preservation Association
Doug Alger, Cultural Resources Coordinator
P.O. Box 56 Salinan
Lockwood , CA 93932
fabbq2000@earthlink.net
(831) 262-9829 (Cell)
(831) 385-3450

This list is current only as of the date of this document.

Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resources Code and Section 5097.98 of the Public Resources Code.

This list is only applicable for contacting local Native Americans with regard to cultural resources for the proposed SCH# 2006011020 - San Luis Obispo County Regional Airport Master Plan Update, San Luis Obispo County.

Native American Contacts
San Luis Obispo County
January 19, 2006

Salinan Nation Cultural Preservation Association
Robert Duckworth, Environmental Coodinator
Drawer 2447 Salinan
Greenfield , CA 93927
dirobduck@thegrid.net
(831) 385-1882
(831) 674-5019

Salinan Nation Cultural Preservation Association
Jose Freeman, President
15200 Country Road 96B Salinan
Woodland , CA 95695
josefree@ccio1.com
(530) 662-5316

Salinan Nation Cultural Preservation Association
Gregg Castro, Administrator
5225 Roeder Road Salinan
San Jose , CA 95111
glcastro@pacbell.net
(408) 864-4115

Salinan-Chumash Nation
Xielolixii
3901 Q Street, Suite 31B Salinan
Bakersfield , CA 93301 Chumash
xielolixii@yahoo.com
(661) 864-1295
(408) 966-8807 (Cell)

This list is current only as of the date of this document.

Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resources Code and Section 5097.98 of the Public Resources Code.

This list is only applicable for contacting local Native Americans with regard to cultural resources for the proposed SCH# 2006011020 - San Luis Obispo County Regional Airport Master Plan Update, San Luis Obispo County.

Air Resources Board

Robert F. Sawyer, Ph.D., Chair
1001 I Street • P.O. Box 2815
Sacramento, California 95812 • www.arb.ca.gov

Alan C. Lloyd, Ph.D.
Agency Secretary

Arnold Schwarzenegger
Governor

February 7, 2006

Mr. Bill Robeson
San Luis Obispo County
County Government Center, Room 310
1055 Monterey Street
San Luis Obispo, California 93408-2040

Dear Mr. Robeson:

Thank you for providing the Air Resources Board (ARB) the opportunity to comment on the Notice of Preparation to prepare a Draft Environmental Impact Report (EIR) for the Master Plan Update for future development recommended for San Luis Obispo County Airport (Airport). The proposed runway extension and related support facilities will provide the Airport the capability to serve 0.60 million passengers and to accommodate 1,000 tons of air cargo in 2023.

The Airport is located in San Luis Obispo County (County), which is currently designated as unclassified/attainment for the federal one-hour and eight-hour ozone standards, attainment for the State one-hour ozone standard, and nonattainment for the State particulate matter (PM10) standard. In addition, the County is likely to be classified as nonattainment for the State eight-hour ozone standard when it becomes effective. We recognize that the Airport will have relatively small numbers of daily operations of commercial aircraft compared to most other commercial airports and that the Airport is located near the City of San Luis Obispo in an area that is currently sparsely populated. However, the County is projected to experience significant residential growth, especially in the area near the airport, which makes exposure to air toxics a potential future concern. Therefore, the EIR should fully address the proposed project's potential emission impacts.

Estimating Emissions and their Impacts

The analysis of air quality impacts in the EIR should quantify all increases in emissions of oxides of nitrogen (NOx), reactive organic gases (ROG), fine particulate matter (PM2.5), PM10, and toxic air contaminants from both construction activities and the operation of the Airport as configured with the proposed improvements through 2023. The analysis should include emissions from aircraft operations, ground service equipment (GSE), ground access vehicles, and stationary and area sources. The analysis should also assess the potential for any increase in emissions to cause or

contribute to violations of federal and State air quality standards. We recommend that the EIR detail all the assumptions and methodologies used in the analysis, and provide summary descriptions that are complete and understandable to the lay person.

Community Impacts

Because the Airport is expected to have emissions commensurate with its relatively small size, we suggest conducting a screening risk assessment to estimate the potential health risk and then consult with ARB's Health Risk Assessment staff to determine the appropriate level of additional analysis. Please contact Mr. Richard Boyd, Manager of ARB's Emissions Evaluation Section, at (916) 322-8285 for further discussions on health risk assessments.

Because studies are underway to improve organic gas and particulate matter (PM) emissions data from commercial jet aircraft engines, we recommend that you consult with ARB staff on the appropriate data and emissions model to use in the EIR.

Diesel exhaust PM is a toxic air contaminant that poses significant health risks. ARB has set a goal to reduce diesel PM emissions 75 percent by 2010 and 85 percent by 2020. The impacts analysis should quantify diesel PM emission increases that are expected to result from the improvements proposed in the Airport's Master Plan Update, including emissions from construction as well as operation.

Mitigation

The EIR should identify and incorporate all feasible, cost-effective mitigation measures to minimize air pollution and health risk. We believe the Airport's Master Plan Update should include an evaluation of the feasibility of zero- and near-zero emission technologies. We also encourage the Airport to use this opportunity to design airport facilities that reflect state-of-the-art in pollution prevention, wherever possible.

We have worked with air carriers and a number of airports to develop effective mitigation programs and are available to assist you with mitigation measures.

If you have any questions, please contact me at (916) 322-8474.

Sincerely,

Gary Honcoop, Manager
Strategic Analysis and Liaison Section

cc: Ms. Aeron Arlin - Genet
Supervising Air Quality Specialist
San Luis Obispo County Air Pollution Control District
3433 Roberto Court
San Luis Obispo, California 93401

Mr. Scott Morgan
State Clearinghouse
SCH# 2006011020
Office of Planning and Research
P.O. Box 3044
Sacramento, California 95812-3044

Mr. Richard Boyd
Air Resources Board

AIR POLLUTION CONTROL DISTRICT
COUNTY OF SAN LUIS OBISPO

February 7, 2006

Bill Robeson
San Luis Obispo County Department of Planning and Building
1050 Monterrey Street
San Luis Obispo, CA 93404

SUBJECT: APCD Comments Regarding the SLO County Airport Master Plan
NOP Program Level.

Dear Mr. Robeson,

Thank you for including the San Luis Obispo County Air Pollution Control District (SLO APCD) in the environmental review process. We have completed our review of the proposed project located at 903-5 Airport Drive in San Luis Obispo. The proposed project is based on the concepts developed during the preparation of the proposed San Luis Obispo County Regional Airport Master Plan Update, related planning efforts, and discussions with the three scheduled air carriers serving SLO Regional Airport.

The proposed project would result in the importation of approximately 320,000 cubic yards of fill material. The majority of this fill material, which would be used for a variety of project components associated with the runway extension (including the relocation of Santa Fe Road, the perimeter service road, the extension of Taxiway A, and the Runway Safety Area). The soil would be imported from an area know as the Flower Mound in the northeastern portion of the Chevron property on the north side of Tank Farm Road. It is anticipated that about 240,000 cubic yards of the fill material is available from the Flower Mound location. The remainder of the fill material would be obtained from the other sources in the vicinity of the Airport.

The proposed project also would result in the relocation of Santa Fe Road and the replacement of the Santa Fe Road bridge over the East Fork of San Luis Obispo Creek. It is anticipated that the replacement bridge would be one of the first improvements constructed to allow for haul trucks to use the replacement bridge to import fill material to the project site. The design of the bridge would incorporate a structure for diverting floodwaters into a swale parallel to the East Fork of San Luis Obispo Creek. Ultimately, the proposed project would result in increased regional jet service and associated ground support for the increased service.

The following are APCD comments that are pertinent to this project.

1. Contact Person:

   Melissa Guise
   Air Pollution Control District
   3433 Roberto Court
   San Luis Obispo, CA 93401
   (805) 781-5912 (805) 781-4667

2. Permit(s) or Approval(s) Authority:

Permits

Permits could be required during both construction and operation of the new facilities. Portable equipment used during construction activities may require statewide registration or a District permit. Additionally, some future operations may require District permits and applicants will need to apply for an Authority to Construct. Potential uses that could be subject to District permit approval include, but are not limited to the following:

1) Construction Phase - Portable equipment, 50 horsepower (hp) or greater, used during construction activities may require California statewide portable equipment registration (issued by the California Air Resources Board) or a District permit. The following list is provided as a guide to equipment and operations that may have permitting requirements, but should not be viewed as exclusive.
   - Portable generators (50 hp or greater)
   - Concrete batch plants
   - Rock and pavement crushing
   - Tub grinders
   - Trommel screens

2) Operational Phase - Stationary equipment installed as part of the project could require District permits. The following list is provided as a guide to equipment and operations that may have permitting requirements, but should not be viewed as exclusive.
   - Boilers
   - Generators (50 hp or greater)

To minimize potential delays, prior to the start of the project, please contact David Dixon of the District's Engineering Division at (805) 781-5912 for specific information regarding permitting requirements.

Naturally Occurring Asbestos

The project site is located in a candidate area for Naturally Occurring Asbestos (NOA), which has been identified as a toxic air contaminant by the California Air Resources Board (ARB). Under the ARB Air Toxics Control Measure (ATCM) for Construction, Grading, Quarrying, and Surface Mining Operations, **prior to any grading activities at the site, the project proponent shall ensure that a geologic evaluation is conducted to determine if NOA is present within the area that will be disturbed. If NOA is not present, an exemption request must be filed with the District (see Attachment 1). If NOA is found at the site the applicant must comply with all requirements outlined in the Asbestos ATCM.** This may include development of an Asbestos Dust Mitigation Plan and an Asbestos Health and Safety Program for approval by the APCD. Please refer to the APCD web page at *http://www.slocleanair.org/business/asbestos.asp* for more information or contact Tim Fuhs of our Enforcement Division at 781-5912.

Demolition Activities

Demolition activities can have potential negative air quality impacts, including issues surrounding proper handling, demolition, and disposal of asbestos containing material (ACM).

Asbestos containing materials could be encountered during demolition or remodeling of existing buildings. Asbestos can also be found in utility pipes/pipelines (transite pipes or insulation on pipes). **If utility pipelines are scheduled for removal or relocation; or building(s) are removed or renovated this project may be subject to various regulatory jurisdictions, including the requirements stipulated in the National Emission Standard for Hazardous Air Pollutants (40CFR61, Subpart M - asbestos NESHAP).** These requirements include but are not limited to: 1) notification requirements to the District, 2) asbestos survey conducted by a Certified Asbestos Inspector, and, 3) applicable removal and disposal requirements of identified ACM. Please contact Tim Fuhs of the Enforcement Division at 781-5912 for further information.

Contaminated Soil

Should hydrocarbon contaminated soil be encountered during construction activities, the APCD must be notified immediately. Any storage pile of contaminated material must be covered at all times except when soil is added or removed. The following measures shall be implemented:

- Covers on storage piles shall be maintained in place at all times in areas not actively involved in soil addition or removal;
- Contaminated soil shall be covered with at least six inches of packed uncontaminated soil or other TPH – non-permeable barrier such as plastic tarp. No headspace shall be allowed where vapors could accumulate;
- Covered piles shall be designed in such a way to eliminate erosion due to wind or water. No openings in the covers are permitted;
- During soil excavation, odors shall not be evident to such a degree as to cause a public nuisance; and,
- Clean soil must be segregated from contaminated soil.

For further information, contact Karen Brooks of our Enforcement Division at 781-5912.

Developmental Burning

Effective February 25, 2000, **the APCD prohibited developmental burning of vegetative material within San Luis Obispo County.** Under certain circumstances where no technically feasible alternatives are available, limited developmental burning under restrictions may be allowed. This requires prior application, payment of fee based on the size of the project, APCD approval, and issuance of a burn permit by the APCD and the local fire department authority. The applicant is required to furnish the APCD with the study of technical feasibility (which includes costs and other constraints) at the time of application. If you have any questions regarding these requirements, contact Karen Brooks of our Enforcement Division at 781-5912.

3. Environmental Information:

The potential air quality impacts from construction and operation of the project should be assessed in the EIR. The project under development has the potential for significant impacts to local air emissions, ambient air quality, sensitive receptors, and the implementation of the Clean Air Plan (CAP). A complete air quality analysis should be included in the DEIR to adequately evaluate the overall air quality impacts associated with implementation of the proposed project.

This analysis should address both short-term and long-term emissions impacts. The following is an outline of items that should be included in the analysis:

a) A description of existing air quality and emissions in the impact area, including the attainment status of the District relative to State Air Quality Standards and any existing regulatory restrictions to development. The most recent Clean Air Plan (CAP) should be consulted for applicable information.

b) A thorough emissions analysis should be performed on all relevant emission sources, using emission factors from the EPA document AP-42 "Compilation of Air Pollutant Emission Factors", EMFAC2000, or other approved sources. The emissions analysis should include calculations for estimated emissions of all criteria pollutants and toxic substances released from the anticipated land use mix on a quarterly and yearly basis. Documentation of emission factors and all assumptions (i.e. anticipated land uses, average daily trip rate from trip generation studies, etc.) should be documented in the appendix to the DEIR.

c) The DEIR should include a range of alternatives to the proposed project that could effectively minimize air quality impacts. A thorough emissions analysis should be conducted for each of the proposed alternatives identified. The DEIR author should contact the District if additional information and guidance is required. All calculations and assumptions used should be fully documented in an appendix to the DEIR.

d) A cumulative impact analysis should be performed to evaluate the combined air quality impacts of this project and impacts from existing and proposed future construction in the area. This should encompass all planned construction activities within 1 mile of the project.

e) The data analyses requested above should address local and regional impacts with respect to maintaining applicable air quality standards at build out. Authors should consult the District to determine if a modeling analysis should be performed and included in the EIR.

f) Temporary construction impacts, such as fugitive dust and combustion emissions from construction and grading activities, should be quantified and mitigation measures proposed. This analysis should include all haul trips associated with soil importation.

g) Mitigation measures should be recommended, as appropriate, following the guidelines presented in Sections 5 and 6 of the District's "CEQA Air Quality Handbook"

h) District staff recommends a screening risk assessment be conducted to estimate the potential health risk from the project.

4. Permit Stipulations/Conditions:

The CEQA Air Quality Handbook provides various significance thresholds that should be referenced in the EIR for determining the significance of impacts and the level of mitigation necessary. The Handbook breaks the impacts into construction phase (Section 6) and operational phase (Section 2) emissions, with separate significance thresholds for each. The level of mitigation necessary will be based upon the new emissions emitted from the project.

5. Alternatives:

   Any alternatives described in the DEIR should involve the same level of air quality analysis as described in bullet items 3.b and 3.c listed above.

6. Reasonably Foreseeable Projects, Programs or Plans:

   An important component of an EIR is a consistency analysis of a proposed project with respect to pertinent planning and environmental guidance documents (i.e. general and specific plans, clean air plans, etc.). The District's CAP is such a document and contains land use policies designed to lessen automobile dependence through greater pedestrian access, increased transit access, mixed use and compact zoning, and a balance of jobs and housing. Projects, with potential size and character to impact the assumptions made in the CAP, can impede the District's attempts to maintain the State ozone standard. Therefore, the consistency analysis obtained through the DEIR process is very important from a decision-making standpoint. Please refer to the District's CEQA Air Quality Handbook, Section 2.2, for additional instructions on performing the consistency evaluation.

7. Relevant Information:

   As mentioned earlier, the Handbook should be referenced in the EIR for determining the significance of impacts and level of mitigation recommended. Additionally, emission factors from AP-42, EMFAC2000, or other approved sources should be used when performing emission calculations.

Again, thank you for the opportunity to comment on this proposal. If you have any questions or comments, or if you would like to receive an electronic version of this letter, feel free to contact me at 781-4667.

Sincerely,

Melissa Guise

Melissa Guise
Air Quality Specialist

MAG/sll

cc: Tim Fuhs, SLOAPCD Enforcement Division
Karen Brooks, SLOAPCD Enforcement Division
David Dixon, SLOAPCD Engineering Division

Attachments Attachment 1 - Natural Occurring Asbestos Exemption Form (NOA)

Naturally Occurring Asbestos - Construction & Grading Project Form

Send To:
San Luis Obispo County Air Pollution Control District
3433 Roberto Court
San Luis Obispo, CA 93401
805-781-5912

Applicant Information/Property Owner		**Project Name**	
Address		**Project Address and/or Assessors Parcel Number**	
City, State, Zip		**City, State, Zip**	
Phone Number	**Date Submitted**	**Agent**	**Phone Number**

Check Where Applicable	ITEM	APCD REQUIRED ELEMENT 1	APCD REQUIRED ELEMENT 2
	Project IS NOT Subject to NOA Requirements	Mapped Location Attached	
	Project IS Subject to NOA Requirements but NOT Disturbing NOA	Geological Evaluation Attached	Exemption Request Form Attached
	Project IS Subject to NOA Requirements and Project is Disturbing NOA - More than One Acre	Geological Evaluation Attached	Dust Control Measure Plan Attached
	Project IS Subject to NOA Requirements and Project is Disturbing NOA - One Acre or Less	Geological Evaluation Attached	Mini-Dust Control Measure Plan Attached

APPLICANT MUST SIGN BELOW

Legal Declaration/Authorized Signature:

Date:

OFFICE USE ONLY - APCD Required Elements

Geological Evaluation		**Exemption Request Form**		**Dust Control Measure Plan**		**Monitoring, Health & Safety Plan**	
Approved		Approved		Approved		Approved	
Not Approved		Not Approved		Not Approved		Not Approved	
Comments:		Comments:		Comments:			

APCD Staff:	Intake Date:	Date Reviewed:	OIS Site #	OIS Proj. #
REQUEST FOR INVOICE	Basic Fee:	Additional Fees:	Billable Hrs:	Total Fees:

Naturally Occurring Asbestos – Construction & Grading Project Exemption Request Form

Attachment 1

Send To:

San Luis Obispo County
Air Pollution Control District
3433 Roberto Court
San Luis Obispo, CA 93401

Phone (805) 781-5912
Fax: (805) 781-1002

Applicant Information/ Property Owner		**Project Name**	
Address		**Project Address and /or Assessors Parcel Number**	
City, State, Zip		**City, State, Zip**	
Phone Number	**Date Submitted**	**Agent**	**Phone Number**

The District may provide an exemption from Section 93105 of the California Code of Regulations - Asbestos Airborne Toxic Control Measure For Construction, Grading, Quarrying, And Surface Mining Operations for any property that has any portion of the area to be disturbed located in a geographic ultramafic rock unit; if a registered geologist has conducted a geologic evaluation of the property and determined that no serpentine or ultramafic rock is likely to be found in the area to be disturbed. Before an exemption can be granted, the owner/operator must provide a copy of a report detailing the geologic evaluation to the District for consideration. The District will approve or deny the exemption within 90 days. An outline of the required geological evaluation is provided in the District handout **"ASBESTOS AIRBORNE TOXIC CONTROL MEASURES FOR CONSTRUCTION, GRADING, QUARRYING, AND SURFACE MINING OPERATIONS – Geological Evaluation Requirements."**

APPLICANT MUST SIGN BELOW:
I request the San Luis Obispo County Air Pollution Control District grant this project exemption from the requirements of the ATCM based on the attached geological evaluation.
Legal Declaration/Authorized Signature:
Date:

OFFICE USE ONLY - APCD Required Element – Geological Evaluation			
Intake Date:	APCD Staff:	OIS Site #:	OIS Proj. #:
Date Reviewed:	APCD Staff:	Approved	Not Approved
Comments:			

STATE OF CALIFORNIA

Governor's Office of Planning and Research

State Clearinghouse and Planning Unit

Arnold Schwarzenegger
Governor

Sean Walsh
Director

Notice of Preparation

January 9, 2006

To: Reviewing Agencies

Re: San Luis Obispo County Regional Airport Master Plan Update
SCH# 2006011020

Attached for your review and comment is the Notice of Preparation (NOP) for the San Luis Obispo County Regional Airport Master Plan Update draft Environmental Impact Report (EIR).

Responsible agencies must transmit their comments on the scope and content of the NOP, focusing on specific information related to their own statutory responsibility, within 30 days of receipt of the NOP from the Lead Agency. This is a courtesy notice provided by the State Clearinghouse with a reminder for you to comment in a timely manner. We encourage other agencies to also respond to this notice and express their concerns early in the environmental review process.

Please direct your comments to:

Bill Robeson
San Luis Obispo County
County Government Center, Room 310
San Luis Obispo, CA 93408-2040

with a copy to the State Clearinghouse in the Office of Planning and Research. Please refer to the SCH number noted above in all correspondence concerning this project.

If you have any questions about the environmental document review process, please call the State Clearinghouse at (916) 445-0613.

Sincerely,

Scott Morgan
Project Analyst, State Clearinghouse

Attachments
cc: Lead Agency

RECEIVED
JAN 17 2006
Planning & Bldg

1400 TENTH STREET P.O. BOX 3044 SACRAMENTO, CALIFORNIA 95812-3044
TEL (916) 445-0613 FAX (916) 323-3018 www.opr.ca.gov

Document Details Report
State Clearinghouse Data Base

SCH# 2006011020
Project Title San Luis Obispo County Regional Airport Master Plan Update
Lead Agency San Luis Obispo County

Type NOP Notice of Preparation

Description The proposed project is based on the concepts developed during the preparation of the proposed San Luis Obispo County Regional Airport Master Plan Update, relating planning efforts, and discussions with three scheduled air carriers serving San Luis Obispo County Regional Aiport (SBP). The Airport Master Plan identifies airside and landside components, many related to extending Runway 11/29 at the Runway 11 end. The 800 foot runway extension is intended to accommodate the forecast demand at SBP, which includes the demand for regional jet service.

Lead Agency Contact

Name Bill Robeson
Agency San Luis Obispo County
Phone (805) 781-5607 **Fax**
email
Address County Government Center, Room 310
City San Luis Obispo **State** CA **Zip** 93408-2040

Project Location

County San Luis Obispo
City
Region
Cross Streets Sr 227, Buckley Road, Santa Fe Road
Parcel No.
Township **Range** **Section** **Base**

Proximity to:

Highways SR 227
Airports SLO County Regional Airport
Railways
Waterways
Schools
Land Use

Project Issues Aesthetic/Visual; Biological Resources; Toxic/Hazardous; Minerals; Public Services; Agricultural Land; Air Quality; Other Issues; Geologic/Seismic; Drainage/Absorption; Soil Erosion/Compaction/Grading; Water Quality; Landuse; Noise; Population/Housing Balance; Recreation/Parks; Traffic/Circulation

Reviewing Agencies Resources Agency; Office of Historic Preservation; Department of Parks and Recreation; Department of Water Resources; Department of Fish and Game, Region 3; Native American Heritage Commission; Caltrans, Division of Aeronautics; Caltrans, Division of Transportation Planning; California Highway Patrol; Caltrans, District 5; Air Resources Board, Airport Projects; Department of Toxic Substances Control; Regional Water Quality Control Board, Region 3

Date Received 01/09/2006 **Start of Review** 01/09/2006 **End of Review** 02/07/2006

Note: Blanks in data fields result from insufficient information provided by lead agency.

NOP Distribution List

CA6

County: San Luis Obispo

SCH# 2006011020

Resources Agency

- [■] **Resources Agency**
  Nadell Gayou
- [ ] **Dept. of Boating & Waterways**
  David Johnson
- [ ] **California Coastal Commission**
  Elizabeth A. Fuchs
- [ ] **Colorado River Board**
  Gerald R. Zimmerman
- [ ] **Dept. of Conservation**
  Rosearnne Taylor
- [ ] **California Energy Commission**
  Roger Johnson
- [ ] **Dept. of Forestry & Fire Protection**
  Allen Robertson
- [✓] **Office of Historic Preservation**
  Wayne Donaldson
- [■] **Dept of Parks & Recreation**
  Environmental Stewardship Section
- [ ] **Reclamation Board**
  DeeDee Jones
- [ ] **S.F. Bay Conservation & Dev't. Comm.**
  Steve McAdam
- [✓] **Dept. of Water Resources**
  Resources Agency
  Nadell Gayou
- [ ] _____
  Conservancy

Fish and Game

- [ ] **Depart. of Fish & Game**
  Scott Flint
  Environmental Services Division
- [ ] **Fish & Game Region 1**
  Donald Koch
- [ ] **Fish & Game Region 2**
  Banky Curtis
- [✓] **Fish & Game Region 3**
  Robert Floerke
- [ ] **Fish & Game Region 4**
  Mike Mulligan
- [ ] **Fish & Game Region 5**
  Don Chadwick
  Habitat Conservation Program
- [ ] **Fish & Game Region 6**
  Gabrina Gatchel
  Habitat Conservation Program
- [ ] **Fish & Game Region 6 I/M**
  Tammy Allen
  Inyo/Mono, Habitat Conservation Program
- [ ] **Dept. of Fish & Game M**
  George Isaac
  Marine Region

Other Departments

- [ ] **Food & Agriculture**
  Steve Shaffer
  Dept. of Food and Agriculture
- [ ] **Depart. of General Services**
  Public School Construction
- [ ] **Dept. of General Services**
  Robert Sleppy
  Environmental Services Section
- [ ] **Dept. of Health Services**
  Veronica Rameriz
  Dept. of Health/Drinking Water

Independent Commissions,Boards

- [ ] **Delta Protection Commission**
  Debby Eddy
- [ ] **Office of Emergency Services**
  Dennis Castrillo
- [ ] **Governor's Office of Planning & Research**
  State Clearinghouse
- [■] **Native American Heritage Comm.**
  Debbie Treadway
- [ ] **Public Utilities Commission**
  Ken Lewis
- [ ] **State Lands Commission**
  Jean Sarino
- [ ] **Tahoe Regional Planning Agency (TRPA)**
  Cherry Jacques

Business, Trans & Housing

- [✓] **Caltrans - Division of Aeronautics**
  Sandy Hesnard
- [✓] **Caltrans - Planning**
  Terri Pencovic
- [✓] **California Highway Patrol**
  John Olejnik
  Office of Special Projects
- [ ] **Housing & Community Development**
  Lisa Nichols
  Housing Policy Division

Dept. of Transportation

- [ ] **Caltrans, District 1**
  Rex Jackman
- [ ] **Caltrans, District 2**
  Marcelino Gonzalez
- [ ] **Caltrans, District 3**
  Katherine Eastham
- [ ] **Caltrans, District 4**
  Tim Sable
- [✓] **Caltrans, District 5**
  David Murray
- [ ] **Caltrans, District 6**
  Marc Birnbaum
- [ ] **Caltrans, District 7**
  Cheryl J. Powell
- [ ] **Caltrans, District 8**
  Dan Kopulsky
- [ ] **Caltrans, District 9**
  Gayle Rosander
- [ ] **Caltrans, District 10**
  Tom Dumas
- [ ] **Caltrans, District 11**
  Mario Orso
- [ ] **Caltrans, District 12**
  Bob Joseph

Cal EPA

Air Resources Board

- [✓] Airport Projects
  Jim Lerner
  - [ ] Transportation Projects
    Kurt Karperos
  - [ ] Industrial Projects
    Mike Tollstrup
- [ ] **California Integrated Waste Management Board**
  Sue O'Leary
- [ ] **State Water Resources Control Board**
  Jim Hockenberry
  Division of Financial Assistance
- [ ] **State Water Resources Control Board**
  Student Intern, 401 Water Quality Certification Unit
  Division of Water Quality
- [ ] **State Water Resouces Control Board**
  Steven Herrera
  Division of Water Rights
- [✓] **Dept. of Toxic Substances Control**
  CEQA Tracking Center
- [ ] **Department of Pesticide Regulation**

Regional Water Quality Control Board (RWQCB)

- [ ] **RWQCB 1**
  Cathleen Hudson
  North Coast Region (1)
- [ ] **RWQCB 2**
  Environmental Document Coordinator
  San Francisco Bay Region (2)
- [✓] **RWQCB 3**
  Central Coast Region (3)
- [ ] **RWQCB 4**
  Jonathan Bishop
  Los Angeles Region (4)
- [ ] **RWQCB 5S**
  Central Valley Region (5)
  - [ ] **RWQCB 5F**
    Central Valley Region (5)
    Fresno Branch Office
  - [ ] **RWQCB 5R**
    Central Valley Region (5)
    Redding Branch Office
- [ ] **RWQCB 6**
  Lahontan Region (6)
  - [ ] **RWQCB 6V**
    Lahontan Region (6)
    Victorville Branch Office
- [ ] **RWQCB 7**
  Colorado River Basin Region (7)
- [ ] **RWQCB 8**
  Santa Ana Region (8)
- [ ] **RWQCB 9**
  San Diego Region (9)

- [ ] **Other** _____

Last Updated on 08/10/05

State of California – The Resources Agency
DEPARTMENT OF FISH AND GAME
http://www.dfg.ca.gov
POST OFFICE BOX 47
YOUNTVILLE, CALIFORNIA 94599
(707) 944-5500

February 10, 2006

Mr. Bill Robeson
San Luis Obispo County
County Government Center, Room 310
San Luis Obispo, CA 93408-2040

Dear Mr. Robeson:

San Luis Obispo County Regional Airport Master Plan Update
San Luis Obispo, San Luis Obispo County
SCH 2006011020

The Department of Fish and Game (DFG) has reviewed the document for the subject project. Please be advised this project may result in changes to fish and wildlife resources as described in the California Code of Regulations, Title 14, Section 753.5(d)(1)(A)-(G). Therefore, a de minimis determination is not appropriate, and an environmental filing fee as required under Fish and Game Code Section 711.4(d) should be paid to the San Luis Obispo County Clerk on or before filing of the Notice of Determination for this project.

Please note that the above comment is only in regard to the need to pay the environmental filing fee and is not a comment by DFG on the significance of project impacts or any proposed mitigation measures.

If you have any questions, please contact Mr. Bob Stafford, Associate Wildlife Biologist, at (805) 528-8670; or Mr. Scott Wilson, Habitat Conservation Supervisor, at (707) 944-5584.

Sincerely,

Robert W. Floerke
Regional Manager
Central Coast Region

cc: State Clearinghouse

Conserving California's Wildlife Since 1870

APPENDIX M

Draft EA/EIR Comments and Responses to Comments

TABLE OF CONTENTS

Appendix M

Introduction

This appendix contains information in response to comments received during the public comment period (28 February 2006 through 17 April 2006). Following this introduction, Section II provides a list of commenters grouped by agency and by organization. Within the groupings, comment letters are organized in chronological order.

Section III contains text changes to the Draft EA/EIR, reflecting necessary additions and corrections addressed by the public comments or responses to comments, or initiated by Lead Agency staff to correct the Draft EA/EIR text. Text changes appear in order of page number in the Draft EA/EIR on which the change is made. Where a text change is made as part of a response to a public comment, the comment number is noted.

Finally, Section IV contains copies of written comments received during the comment period and responses to those comments. Each comment is numbered in the margin of the comment letter, and the responses to all of the comments in a particular letter follow that letter. Where a response includes a change to the text of the Draft EA/EIR, a reference is made to Section III of this appendix, where text changes are listed in order of page number in the Draft EA/EIR. In addition, these text changes are reflected on the correct pages in this Final EA/EIR.

List of Commenters

Agencies Comments on the Draft EA/EIR

The following agencies submitted written comments on the Draft EA/EIR during the public review period (the date of the letter is also presented):

State Agencies

California Department of Transportation, Division of Aeronautics	April 12, 2006
Governor's Office of Planning and Research	April 14, 2006

Local and Regional Agencies

County of San Luis Obispo, Department of Agriculture/ Measurement Standards	April 17, 2006
San Luis Obispo County Air Pollution Control District	April 17, 2006

Organizations Commenting on the Draft EA/EIR

The following organizations submitted written comments on the Draft EA/EIR during the public review period (the date of the letter is also presented):

Aviation Consultants, Inc.	March 13, 2006
California Native Plant Society	March 31, 2006

Addenda to the Draft EA/EIR

The following corrections and changes are made to the Draft EA/EIR and are incorporated as part of the Final EA/EIR. Revised or new language is double-underlined.

Where a change is made as part of a response to a comment on the Draft EA/EIR, the comment number is noted in brackets.

Page 2, paragraph 2, sentence is revised as follows:

> In addition to airfield improvements, the Master Plan includes new emergency and service access to ensure compliance with the FAA's *Runway Safety Area Program* and Title 14 Code of Federal Regulations (CFR) ~~Federal Aviation Regulation (FAR)~~ Part 139.

Page 3, paragraph 2 is deleted in its entirety.

Page 3, paragraph 3 is deleted and replaced with the following text:

> The federal actions proposed at SBP are the approval of the ALP, the approval of further processing of an application for federal assistance using Airport Improvement Program (AIP) grants or approval to impose and use Passenger Facility Charges (PFCs), and approval of appropriate amendments to the Airport Certification Manual pursuant to 14 CFR Part 139.

Page 11, paragraph 1, sentences 2 through 5 are deleted in their entirety.

Page 11, paragraph 3, sentence 1 is deleted in its entirety.

Page 14, paragraph 1, sentence 1 is revised as follows:

> For compliance with ~~CEQA~~ Section 15124(b) of the *CEQA Guidelines*, the County is required to identify its objectives associated with the Master Plan.

Page 16, Table 3-1, project S-1 acreage is added as follows:

> (13.01 acres)

Page 16, Table 3-1, project S-9 acreage is added as follows:

> (13.62 acres)

Page 16, Table 3-1, project S-10 acreage is added as follows:

> (2.33 acres)

Page 16, Table 3-1, project S-13 acreage is added as follows:

> (1.00 acre)

Page 31, paragraph 1, sentence 1 is revised as follows:

> As required by FAA Order 1050.1E, *Environmental Impacts, Policies and Procedures,* major past, present, and reasonably foreseeable future actions in the vicinity of the Airport were obtained from County and City records and are shown on Figure 4-1.

Page 36, new paragraph 4 is added as follows:

> Single event descriptors are used in this EA/EIR for informational purposes only and are not used to determine whether or not an impact is significant. The two single event descriptors are maximum A-weighted sound level and sound exposure level.

Page 38, paragraph 3, sentences 2 through 4 are deleted in their entirety.

Page 38, paragraph 5, sentences 2 through 4 are deleted in their entirety.

Page 39, bullet 1, sentence 2 is deleted in its entirety.

Page 39, bullets 2 and 3 are deleted in its entirety.

Page 39, paragraph 1, sentence 1 is revised as follows:

> Under CEQA regulations the thresholds of significance are the same for aircraft ~~and construction-related~~ noise as the regulations outlined above for NEPA.

Page 39, paragraph 1, sentence 4 is revised as follows:

> Under CEQA, construction noise and surface traffic noise impacts also are compared to Baseline Conditions.

Page 39, paragraph 1, new sentence 6 is added as follows:

> For impacts related to construction noise, these are considered to be significant if the noise level is greater than the existing background noise levels.

Page 39, paragraph 2, new sentence 2 is added as follows:

> These SEL values are provided for informational purposes only.

Page 51, paragraph 2, new sentence 3 is added as follows:

> Although no significance criteria is related to the 60 CNEL noise contour, it is included because this is the County's noise compatibility standard.

Page 51, paragraph 3, new sentence 6 is added as follows;

> As shown in Figure 5.1-5, no residents are within the 65 CNEL noise contour.

Page 51, paragraph 6, sentences 6 and 7 (which continues onto page 53) are deleted in their entirety.

Page 53, paragraph 1, sentence 2 is revised as follows:

> The calculated aircraft CNEL and SEL values shown in Table 5.1-6 will serve as a basis for comparison in later sections of this EA/EIR that discuss the potential changes in noise exposure that could result with implementation of the Proposed Action.

Page 53, Table 5.1-6, data on SEL values are deleted in their entirety.

Page 53, Table 5.1-6, footnote /b/ is deleted in its entirety.

Page 54, paragraph 6, sentence 2 is revised as follows:

> Table 5.1-7 reports the aircraft CNEL values for the noise monitoring/ reference grid point locations~~, along with SEL values for typical aircraft departures~~.

Page 54, paragraph 6, sentences 3 and 4 are deleted in their entirety.

Page 56, Table 5.1-7, data on SEL values are deleted in their entirety.

Page 56, Table 5.1-7, footnote /b/ is deleted in its entirety.

Page 57, paragraph 2, new sentence 4 is added as follows:

> Therefore, the number of residents within the 65 CNEL noise contour would be zero, which is the same as the number of residents within the 65 CNEL noise contour under the No Action Alternative.

Page 57, paragraph 3, sentence 2 is deleted in its entirety.

Page 57, paragraph 3, sentence 3 is revised as follows:

> These CNEL ~~and SEL~~ changes are the results of an 800-foot displacement of where aircraft departing from Runway 11 begin their takeoff roll and changes in the takeoff profile assumed for the Canadair 601 to account for maximum takeoff weight.

Page 57, paragraph 4, sentence 1 is revised as follows:

> As shown in Table~~s~~ 5.1-8 ~~and 5.1-9~~, no significant increases would occur in ~~either~~ cumulative (CNEL) ~~or single event (SEL)~~ noise exposure at the reference grid point locations under the Proposed Action.

Page 57, paragraph 5, sentence 3 is revised as follows:

> However, no noise-sensitive land uses or residents exist within this area where this increase in noise would occur.

Page 57, paragraph 6, sentence 2 is deleted in its entirety.

Page 57, paragraph 6, sentence 3 is revised as follows:

These CNEL ~~and SEL~~ changes are the results of an 800-foot displacement in where aircraft departing from Runway 11 begin their takeoff roll and changes in the takeoff profile assumed for the Canadair 601 to account for maximum takeoff weight.

Page 57, paragraph 7, sentence 1 is revised as follows:

As shown in Table~~s~~ 5.1-8 ~~and 5.1-9~~, no significant increases would occur in either cumulative (CNEL) ~~or single event (SEL)~~ noise exposure at the reference grid point locations under the Proposed Action compared to the Baseline Conditions.

Page 60, Table 5.1-9 is deleted in its entirety.

Page 62, paragraph 6 is replaced with the following:

The FAA has no criteria for evaluating construction noise impacts. Therefore, there is no NEPA analysis of surface traffic noise impacts.

Page 63, paragraph 5, new sentence 4 is added as follows:

Therefore, no residents would be within the 65 CNEL noise contour in 2023.

Page 63, paragraph 6, sentence 1 is revised as follows:

Table 5.1-9~~10~~ reports changes in aircraft CNEL values for typical aircraft departures at the noise monitoring/reference grid point locations that would be expected under the Proposed Action and compares these CNEL values with the CNEL values under the Baseline Conditions (2004).

Page 63, paragraph 6, sentence 2 is deleted in its entirety.

Page 63, paragraph 6, sentence 3 is revised as follows:

Similar to the Proposed Action under Phase I, these CNEL ~~and SEL~~ changes are the results of an 800-foot displacement in where aircraft departing from Runway 11 begin their takeoff roll and changes in the takeoff profile assumed for the Canadair 601 to account for maximum takeoff weight.

Page 70, paragraph 2, sentence 1 is revised as follows:

Determining significance under NEPA is guided by FAA Order 1050.1E, *Environmental Impacts: Policies and Procedures* ~~and FAA Order 5050.4A, *Airport Environmental Handbook*~~.

Page 70, paragraph 2, sentences 2 and 3 are deleted in their entirety.

Page 71, paragraph 1 is replaced with the following:

For a discussion of existing land uses, see Section 4.2 of this EA/EIR.

Page 78, paragraph 5, sentence 2 is revised as follows:

> Phase I of the Proposed Action also includes several off-Airport projects, including relocating Santa Fe Road ~~and constructing a replacement bridge~~, as described in Section 1.1.1, Phase I – 2010 (Proposed Near-Term Projects).

Page 87, paragraph 4, sentence 2 is revised as follows:

> The supply of 635 long-term spaces under the No Action Alternative would accommodate the estimated demand, and the occupancy rate would ~~decrease from~~ be about ~~74 percent to about~~ 52 percent.

Page 90, paragraph 5, sentence 3 is revised as follows:

> The supply of 635 long-term spaces under the No Action Alternative would accommodate the estimated demand, and the occupancy rate would ~~decrease from~~ be about ~~74 percent to about~~ 52 percent.

Page 92, paragraph 56 sentence 3 is revised as follows:

> The supply of 635 long-term spaces would accommodate the estimated demand, although the occupancy rate would ~~increase from~~ be about ~~74 percent to about~~ 96 percent.

Page 114, paragraph 6, sentence 1 is revised as follows:

> If the 20 additional permanent jobs resulted in the need for 20 additional housing units, it would represent approximately 0.5 percent of the 3,554 units identified for development in the County's General Plan during the period from ~~2994~~ 1994 to 2009.

Page 137, paragraph 3, sentences 2 through 5 are deleted in their entirety.

Page 141, paragraph 1 is revised as follows:

> As explained in Section 5.5.1.2, ~~no air quality analysis is needed under NEPA to assess NAAQS because~~ the Transportation Conformity Rule does not apply because San Luis Obispo County has been designated as attainment or unclassified for all of the existing NAAQS. Therefore, ~~for NEPA purposes,~~ construction-related emissions would not exceed de minimis levels and this impact would be less than significant.

Page 142, bullet 2, new sentences 2 and 3 are added as follows [SLOCAPCD #2]:

> The DOC/CDPF shall be placed on the equipment that will be used the most and that produces the greatest emissions. The SLOCAPCD shall review and approve the installation of the filters prior to the start of construction activities.

Page 142, bullet 8 of the dust abatement program is revised as follows [SLOCAPCD #3]:

> Maintain vehicle speeds of ~~25~~ 15 mph or less for all construction vehicles on any unpaved surface at the construction site.

Page 143, bullet 1, new sentences 3 and 4 are added as follows [SLOCAPCD #4]:

> Depending on the effectiveness of the wheel washing and tracking technique, the paved roadway may need to be cleaned more than once daily. All street sweepers used should either use reclaimed water or some other technique to prevent the generation of dust.

Page 143, paragraph 3, new sentence 4 is added as follows (SLOCAPCD #15]:

> In addition, a screening level health risk assessment has been performed and is included as Appendix Q. The conclusion of the screening level health risk assessment is that no significant health risk effects would occur.

Page 143, paragraph 5 is replaced as follows:

> The estimated DPM emissions under the Proposed Action would be the same as those under the No Active Alternative. Therefore, the impacts of diesel construction emissions would be less-than-significant

Page 144, paragraph 4 is replaced as follows:

> The estimated CO emissions from the Proposed Action would be less than the emissions under the No Active Alternative. Therefore, this impact level is less-than-significant

Page 146, paragraph 1, sentence 2 is deleted in its entirety.

Page 147, paragraph 1, sentence 2 of the Draft EA/EIR is revised as follows [SLOCAPCD #17]:

> With the continued implementation of this mitigation measure, which is detailed on pages 141 through 143, the construction-related emissions impact would be less-than-significant.

Page 178, paragraph 3, sentence 2 is revised as follows:

> As required under Section 106 of the NHPA, the FAA ~~has~~ made the determination that the Proposed Action would have no effect on historical resources and ~~has requested that~~ the SHPO has concurred with this determination (see Appendix G for copies of the consultation correspondence between FAA and the SHPO).

Page 179, paragraph 1, sentence 2 is revised as follows:

> As required under Section 106 of the NHPA, the FAA ~~has~~ made the determination that the Proposed Action would have no effect on historical resources and ~~has requested that~~ the SHPO has concurred with this determination (see Appendix G for copies of the consultation correspondence between FAA and the SHPO).

Page 179, paragraph 3 is deleted and replaced with the following text:

If unknown resources were altered or destroyed by earthmoving activities associated with the construction of project components included as part of the Proposed Action, it would result in a significant impact pursuant to NEPA.

Page 197, paragraph 1, sentence 3 is revised as follows:

These species are referred to collectively as "special status species" in the CEQA analysis portion of this document, following a convention that has developed in practice but has no official sanction.

Page 201, paragraph 2, sentence 2 is revised as follows:

Information concerning listed species that might occur in the project vicinity was obtained through ~~informal~~ consultation with USFWS, which has jurisdiction over the endangered tidewater goby and threatened California red-legged frog and vernal pool fairy shrimp, as well as southwestern pond turtle and California linderiella (two federal species of concern), and the National Marine Fisheries Service (NMFS), which has jurisdiction over the threatened steelhead.

Page 201, paragraph 2, sentence 3 is revised as follows:

Pursuant to 50 CFR 402, the FAA consulted ~~Informal consultation~~ with USFWS regarding the effects of the Proposed Action on endangered and threatened species ~~has indicated that preparation of a Biological Assessment pursuant to Section 7(a)(2) is likely not necessary and that potential impacts to listed species may be avoided through project mitigation~~.

Page 201, paragraph 2, sentence 4 is deleted in its entirety.

Page 203, new paragraph 2 is added as follows:

Based on field surveys, the FAA determined that no endangered or threatened aquatic vertebrate species are known to exist in the Airport vicinity. The FAA also determined that the habitat exists for the southwestern pond turtle in the East Fork of San Luis Obispo Creek; however, this species is not known to be present.

Page 204, new paragraph 5 is added as follows:

Based on field surveys, the FAA determined that no endangered or threatened bird species are known to exist at the Airport. Some birds that are protected under the Migratory Bird Treaty Act do exist in the Airport vicinity.

Pages 243 through 244, section 5.13 is replaced in its entirety.

Pages 245 through 246, section 5.14 is replaced in its entirety.

Pages 247 through 248, section 5.15 is replaced in its entirety.

Page 250, paragraph 5, new sentence 2 is added as follows:

These soils are classified as Class I and II irrigated soils and are considered prime soils.

Page 252, paragraph 4 is revised as follows:

~~Some of~~ The 38-acre area currently used for agriculture located west of Runway 7 ~~may~~ can continue to be used for agricultural purpose as practicable based on the locations of the final alignment of Santa Fe Road, which would be constructed in this area ~~(Pehl, 2005)~~. To perform a conservative analysis of potential farmland impacts, it was assumed that about 2 acres ~~half of the 38-acres~~ in agricultural use in the Runway 7 area would be converted to non-agricultural use during Phase I of the Proposed Action (relocation of Santa Fe Road).

Page 252, paragraph 5, sentence 1 is revised as follows:

Compared to the No Action Alternative, Phase I of the Proposed Action would lead to the conversion of ~~22~~ 24 acres of Prime farmland and the conversion of approximately ~~31~~ 23 acres of farmland of local importance.

Page 252, paragraph 6 is deleted in its entirety.

Page 253, paragraph 2, sentence 1 is revised as follows:

Compared to Baseline Conditions, Phase I of the Proposed Action would lead to the conversion of ~~22~~ 24 acres of Prime farmland and the conversion of approximately ~~31~~ 23 acres of farmland of local importance.

Page 253, paragraph 5, sentence 2 is replaced with the following:

This runway extension would be limited to the area east of the current Santa Fe Road alignment and would not displace existing prime agricultural soils used for historical agricultural production.

Page 253, paragraph 6 is replaced with the following:

Compared to the Baseline Conditions, Phase II of the Proposed Action would not have an effect on farmlands.

Page 259, paragraph 3, sentence 2 is revised as follows:

However, the increase would be relatively modest and ~~would not be expected to strain~~ the local power supplier would be able to accommodate this increase using existing electric distribution infrastructure.

Page 259, new Impact 5.17-3 (Use of Mineral Resources) for Phase I is added.

Page 259, paragraph 8, sentence 3 is revised as follows:

Even with a projected 84 percent increase in enplanements between 2004 and ~~2010~~ 2023, Phase II of the Proposed Action would result in only a slight increase in commercial operations.

Page 260, new Impact 5.17-3 (Use of Mineral Resources) for Phase II is added.

Page 278, paragraph 4, sentence 4 is revised as follows:

> Asbestos could be encountered and may require disposal during structural renovation of buildings.

Page 340, paragraph 1, sentences 3 and 4 are revised as follows:

> During this 45-day period, comments on the accuracy and completeness of the Draft EA/EIR ~~can be~~ were submitted by public agencies and other groups~~, and concerned individuals~~. Written comments ~~should be~~ were submitted to:

Page 340, paragraph 2 is revised as follows:

> ~~The~~ This Final EA/EIR ~~will be prepared to~~ includes comments received on the Draft EA/EIR and the responses to those comments (see Appendix M). The Final EA/EIR ~~will be~~ has been released for public review and comment. Notices of the availability of the Final EA/EIR ~~will be~~ have been placed in local newspapers. In addition, persons on the mailing list ~~will be~~ have been sent notification of the locations where the Final EA/EIR ~~will be~~ is available for review.

Page 340, paragraph 3 is revised as follows:

> The Final EA/EIR ~~will be~~ has been sent to certain parties and made available for review at selected locations in the SBP vicinity.

Comments and Responses to Comments of the Draft EA/EIR

DEPARTMENT OF TRANSPORTATION
DIVISION OF AERONAUTICS – M.S.#40
1120 N STREET
P. O. BOX 942873
SACRAMENTO, CA 94273-0001
PHONE (916) 654-4959
FAX (916) 653-9531
TTY (916) 651-6827

Flex your power!
Be energy efficient!

April 12, 2006

Mr. Bill Robeson
San Luis Obispo County
County Government Center, Room 310
San Luis Obispo, CA 93408-2040

Dear Mr. Robeson:

Re: San Luis Obispo County Draft Environmental Impact Report for the
San Luis Obispo County Regional Airport Master Plan Update; SCH# 2006011020

The California Department of Transportation (Caltrans), Division of Aeronautics (Division), reviewed the above-referenced document with respect to airport-related noise and safety impacts and regional aviation land use planning issues pursuant to the California Environmental Quality Act (CEQA). The Division has technical expertise in the areas of airport operations safety and airport land use compatibility. We are a funding agency for airport projects and we have permit authority for public and special use airports and heliports. The following comments are offered for your consideration. 1

The proposal is for the update to the San Luis Obispo County Regional Airport Master Plan. The proposed changes to the airport are broken up into two phases. The main component to Phase 1 is an extension to Runway 11 by 800 feet. Phase II has a component to extend Runway 7 by 500 feet. The purpose of the Phase I project components are to accommodate existing and forecast demand for air passenger, air cargo, and general aviation services; and provide emergency access and service access for airside and landside facilities along the Runway 11 end, without direct conflicts with runway and taxiway activities.

The Division has reviewed the DEIR for the San Luis Obispo Regional Airport. It appears to have thoroughly covered all of our concerns. The Division requests that we receive a copy of the Notice of Determination and the Final Environmental Impact Report.

Thank you for the opportunity to review and comment on the DEIR. If you have any questions, please call me at (916) 654-7075.

Sincerely,

Ron Bolyard

RON BOLYARD
Aviation Environmental Specialist

c: State Clearinghouse, San Luis Obispo County ALUC, San Luis Obispo County Regional Airport

California Department of Transportation, Division of Aeronautics

1. The comment indicating that the Draft EA/EIR covers all of the concerns of the California Department of Transportation, Division of Aeronautics is acknowledged and will be considered by the FAA and County as part of their respective decision-making processes.

STATE OF CALIFORNIA

Governor's Office of Planning and Research

State Clearinghouse and Planning Unit

Arnold Schwarzenegger
Governor

Sean Walsh
Director

April 14, 2006

Bill Robeson
San Luis Obispo County
County Government Center, Room 310
San Luis Obispo, CA 93408-2040

Subject: San Luis Obispo County Regional Airport Master Plan Update
SCH#: 2006011020

Dear Bill Robeson:

The State Clearinghouse submitted the above named Draft EIR to selected state agencies for review. On the enclosed Document Details Report please note that the Clearinghouse has listed the state agencies that reviewed your document. The review period closed on April 13, 2006, and the comments from the responding agency (ies) is (are) enclosed. If this comment package is not in order, please notify the State Clearinghouse immediately. Please refer to the project's ten-digit State Clearinghouse number in future correspondence so that we may respond promptly.

Please note that Section 21104(c) of the California Public Resources Code states that:

> "A responsible or other public agency shall only make substantive comments regarding those activities involved in a project which are within an area of expertise of the agency or which are required to be carried out or approved by the agency. Those comments shall be supported by specific documentation."

These comments are forwarded for use in preparing your final environmental document. Should you need more information or clarification of the enclosed comments, we recommend that you contact the commenting agency directly.

This letter acknowledges that you have complied with the State Clearinghouse review requirements for draft environmental documents, pursuant to the California Environmental Quality Act. Please contact the State Clearinghouse at (916) 445-0613 if you have any questions regarding the environmental review process. 1

Sincerely,

Terry Roberts

Terry Roberts
Director, State Clearinghouse

Enclosures
cc: Resources Agency

1400 TENTH STREET P.O. BOX 3044 SACRAMENTO, CALIFORNIA 95812-3044
TEL (916) 445-0613 FAX (916) 323-3018 www.opr.ca.gov

Document Details Report
State Clearinghouse Data Base

SCH# 2006011020
Project Title San Luis Obispo County Regional Airport Master Plan Update
Lead Agency San Luis Obispo County

Type EIR Draft EIR

Description The project consists of the adoption of the Master Plan Update for San Luis Obispo County Regional Airport. Project components in the Master Plan Update include airfield, landside, and ancillary improvements at the Airport. The primary component of the project is the extension of Runway 11 by 800 feet.

Lead Agency Contact

Name Bill Robeson
Agency San Luis Obispo County
Phone (805) 781-5600 **Fax**
email
Address County Government Center, Room 310
City San Luis Obispo **State** CA **Zip** 93408-2040

Project Location

County San Luis Obispo
City
Region
Cross Streets Sr 227, Buckley Road, Santa Fe Road
Parcel No.
Township **Range** **Section** **Base**

Proximity to:

Highways SR 227
Airports SLO County Regional Airport
Railways
Waterways
Schools
Land Use PLU: Public Facilities
Z: Public Facilities
GPD: Airport Review

Project Issues Aesthetic/Visual; Agricultural Land; Air Quality; Archaeologic-Historic; Coastal Zone; Drainage/Absorption; Flood Plain/Flooding; Geologic/Seismic; Noise; Population/Housing Balance; Public Services; Recreation/Parks; Schools/Universities; Sewer Capacity; Soil Erosion/Compaction/Grading; Solid Waste; Toxic/Hazardous; Traffic/Circulation; Vegetation; Water Quality; Water Supply; Wetland/Riparian; Wildlife; Growth Inducing; Landuse; Cumulative Effects; Economics/Jobs

Reviewing Agencies Resources Agency; Department of Fish and Game, Region 3; Department of Parks and Recreation; Department of Water Resources; Caltrans, Division of Aeronautics; California Highway Patrol; Caltrans, District 5; Caltrans, Division of Transportation Planning; Air Resources Board, Airport Projects; Regional Water Quality Control Board, Region 3; Department of Toxic Substances Control; Native American Heritage Commission

Date Received 02/28/2006 **Start of Review** 02/28/2006 **End of Review** 04/13/2006

Note: Blanks in data fields result from insufficient information provided by lead agency.

Governors Office of Planning and Research

1. The comment indicating that compliance with the State Clearinghouse review requirements for a Draft EA/EIR has occurred is acknowledged.

COUNTY OF SAN LUIS OBISPO

Department of Agriculture/Measurement Standards

2156 SIERRA WAY, SUITE A • SAN LUIS OBISPO, CALIFORNIA 93401-4556
ROBERT F. LILLEY (805) 781-5910
AGRICULTURAL COMMISSIONER/SEALER FAX (805) 781-1035
AgCommSLO@co.slo.ca.us

DATE: **April 17, 2006**

TO: **Bill Robeson, Project Manager**

FROM: **Lynda L. Auchinachie, Agriculture Department**

SUBJECT: **SLO County Regional Airport Master Plan Update Draft EA/EIR**

Thank you for the opportunity to review the SLO County Regional Airport Master Plan Update Draft EA/EIR. The document appears to adequately address the Agriculture Department concerns. 1

If you have questions, please call 781-5914.

County of San Luis Obispo, Department of Agriculture / Measurement Standards

1. The comment indicating that the Draft EA/EIR adequately addresses Department of Agriculture's concerns is acknowledged.

April 17, 2006

Bill Robeson
San Luis Obispo County Department of Planning and Building
1050 Monterey Street
San Luis Obispo, CA 93401

SUBJECT: APCD Comments Regarding the SLO County Airport Master Plan Draft Environmental Impact Statement (EIR)

Dear Mr. Robeson,

Thank you for including the San Luis Obispo County Air Pollution Control District (APCD) in the environmental review process. We have completed our review of the Draft Environmental Impact Report for the San Luis Obispo County Airport Master Plan.

The Master Plan includes Phase I (2010) and Phase II (2023) projects a summary of the activities associated with each phase is included on pages S-3 of the Drat EIR.

We have the following comments regarding the EIR.

Section 5.3-1.3.2 Socioeconomic Impacts – page 89
The County is proposing a traffic control program that would address hauling fill material from off site. One element of the plan address track out. *"All debris associated with the transportation of the fill material would be swept up every morning upon completion of the last trip transporting the fill material"*. San Luis Obispo County has not reached attainment for the State's particulate matter (PM) standard. Dust from track out roads is a contributing source of PM throughout the County. While utilizing a street sweeper is important, measures should be implemented to prevent soil from being tracked onto adjacent roadway during hauling. 1

Section 5.5.3 Air Quality Impact, Construction Impacts, Phase I – page 142
As part of the construction mitigation measures diesel particulate filter or oxidization catalyst are required. The following text should be added to this requirement which is listed as the second bulleted item listed on page 142. The contractor will install 3 catalyzed diesel particulate filters (DPF) or 15 diesel oxidation catalysts (DOC). The DPF/DOC should be placed on the equipment which will be utilized the most and produce the most emissions. The APCD must review and approve the installation of the filters prior to the start of construction activities. 2

Section 5.5.3 Air Quality Impacts, Construction Impacts, Phase I – page 142
As part of the dust control measures, listed on page 142, the 8th bulleted item indicates that vehicles speed for unpaved surfaces should be 25 mph. District staff recommend that vehicles speed for 3

unpaved surfaces during construction should be 15 mph. The speed limits should be reduced to 15 mph in the mitigation measure. 3

Section 5.5.3 Air Quality Impacts, Construction Impacts, Phase I – page 143
As part of the dust control measures, listed on page 142 the 12th bulleted item indicates that street sweepers will be used at the end of each day if visible soil material is carried onto adjacent paved roadways. **Depending on the effectiveness of the wheel washing and tracking technique, the paved roadway may need to be cleaned more than once daily. All street sweepers used should either use reclaimed water or some other technique to prevent the generation of dust.** 4

Section 5.5.3 Air Quality Impacts, Construction Impacts, Phase I – page 141-143
For construction related emissions, in addition to the mitigation measures listed on page 141 of the Draft EIR the following measures should be included.

Naturally Occurring Asbestos
The project site is located in a candidate area for Naturally Occurring Asbestos (NOA), which has been identified as a toxic air contaminant by the California Air Resources Board (ARB). Under the ARB Air Toxics Control Measure (ATCM) for Construction, Grading, Quarrying, and Surface Mining Operations, **prior to any grading activities at the site, the project proponent shall ensure that a geologic evaluation is conducted to determine if NOA is present within the area that will be disturbed. If NOA is not present, an exemption request must be filed with the District (see Attachment 1). If NOA is found at the site the applicant must comply with all requirements outlined in the Asbestos ATCM.** This may include development of an Asbestos Dust Mitigation Plan and an Asbestos Health and Safety Program for approval by the APCD. Please refer to the APCD web page at *http://www.slocleanair.org/business/asbestos.asp* for more information or contact Tim Fuhs of our Enforcement Division at 781-5912. 5

Demolition Activities
Demolition activities can have potential negative air quality impacts, including issues surrounding proper handling, demolition, and disposal of asbestos containing material (ACM). Asbestos containing materials could be encountered during demolition or remodeling of existing buildings. Asbestos can also be found in utility pipes/pipelines (transite pipes or insulation on pipes). **If utility pipelines are scheduled for removal or relocation; or building(s) are removed or renovated this project may be subject to various regulatory jurisdictions, including the requirements stipulated in the National Emission Standard for Hazardous Air Pollutants (40CFR61, Subpart M - asbestos NESHAP).** These requirements include but are not limited to: 1) notification requirements to the District, 2) asbestos survey conducted by a Certified Asbestos Inspector, and, 3) applicable removal and disposal requirements of identified ACM. Please contact Tim Fuhs of the Enforcement Division at 781-5912 for further information. 6

Contaminated Soil
Should hydrocarbon contaminated soil be encountered during construction activities, the APCD must be notified immediately. Any storage pile of contaminated material must be covered at all times except when soil is added or removed. The following measures shall be implemented: 7

- Covers on storage piles shall be maintained in place at all times in areas not actively involved in soil addition or removal;
- Contaminated soil shall be covered with at least six inches of packed uncontaminated soil or other TPH – non-permeable barrier such as plastic tarp. No headspace shall be allowed where vapors could accumulate;
- Covered piles shall be designed in such a way to eliminate erosion due to wind or water. No openings in the covers are permitted;
- During soil excavation, odors shall not be evident to such a degree as to cause a public nuisance; and,
- Clean soil must be segregated from contaminated soil.

For further information, contact Karen Brooks of our Enforcement Division at 781-5912. 7

Developmental Burning

Effective February 25, 2000, **the APCD prohibited developmental burning of vegetative material within San Luis Obispo County.** Under certain circumstances where no technically feasible alternatives are available, limited developmental burning under restrictions may be allowed. This requires prior application, payment of fee based on the size of the project, APCD approval, and issuance of a burn permit by the APCD and the local fire department authority. The applicant is required to furnish the APCD with the study of technical feasibility (which includes costs and other constraints) at the time of application. If you have any questions regarding these requirements, contact Karen Brooks of our Enforcement Division at 781-5912. 8

Permits

Permits could be required during construction activities. Portable equipment, 50 horsepower (hp) or greater, used during construction activities may require California statewide portable equipment registration (issued by the California Air Resources Board) or a District permit. The following list is provided as a guide to equipment and operations that may have permitting requirements, but should not be viewed as exclusive. 9

- Portable generators (50 hp or greater)
- Concrete batch plants
- Rock and pavement crushing
- Tub grinders
- Trommel screens

Construction Activity Management Plan

Develop a comprehensive Construction Activity Management Plan designed to minimize the amount of large construction equipment operating during any given time period. **The plan should be submitted to the District for review and approval prior to the start of construction**. The plans should include but not be limited to the following elements: 10

- Schedule construction truck trips during non-peak hours to reduce peak hour emissions;
- Limit the length of the construction work-day period, if necessary; and,
- Phase construction activities, if appropriate.

Section 5.5-2 Air Quality Impacts, Construction Impacts, Phase I– page 143

On page 143 the risk from diesel particulate matter (DPM) exposure is discussed. The draft EIR finds the impacts of diesel construction emission would be less than significant. District staff does 11

not agree that the emissions from the proposed construction would be less than the significant. A considerable amount of grading and soil hauling will be taking place and will result in diesel particulate matter. As indicated above diesel particulate filter or oxidation catalyst should be utilized to reduce potential exposure to DPM. 11

Section 5.5-2 Air Quality Impacts, Operational Impacts, Phase I – page 145
From the data presented in Appendix F it is not possible to evaluate the emission calculations and underling assumptions. The calculations, assumptions, changes to default values if any, and supporting documentation should be provided in Appendix F for all calculations presented in the Draft EIR. Until the calculations and assumptions can be checked, we are unable to adequately determine the need for appropriate mitigation measures for the project. As indicated, PM will increase for Phase I and for Phase II the increase will be significant. 12

District staff does not agree with the finding presented in the Draft EIR. While vehicle fleets will be cleaner in future years, the current trend is still toward larger vehicles (trucks and SUV's) which do not meet the same emission standards as automobiles. Also, vehicle numbers as shown will continue to increase and will ultimately result in increase emissions. Therefore the District believes it is important to incorporated appropriate mitigation measures to address these issues. The following is a list of potential mitigation measures. Other measures maybe proposed as replacements by contacting the APCD's Planning Division at 805-781-5912. 13

- Expand transit services to the airport.
- Increase street sweeping for on site-parking lots and surrounding roadways.
- Increase electrification or use of alternative fuel conversion for ground support equipment.

Tables F-3, page F-6 in Appendix F lists Annual Aircraft activity and fleet mix. The unit of measurement for the data present in this table should be listed. The same applies for Table F-4 on page F-9. 14

Section 5.5-2 Air Quality Impacts, Operational Impacts, Phase I – page 145
As indicated in both the Air District and ARB's NOP letters (both dated February 7, 2006) at a minimum a screening level health risk assessment should be performed to evaluate the potential health impacts from the project. 15

Section 5.5-1 Air Quality Impacts, Construction Impacts, Phase II – page 147
All construction phase mitigation measures outline for Phase I and referenced on pages 141-143 should be applied to construction activities associated with Phase II. 16

Section 5.5-2 Air Quality Impacts, Construction Impacts, Phase II – page 147
As with Phase I diesel particulate filters or oxidation catalysts should be use to decrease the potential exposure to DPM during Phase II construction activities as applicable technology dictate. 17

Section 5.5-2 Air Quality Impacts, Operational Impacts, Phase II – page 149
Permits
A mitigation measure should be added to the draft EIR to address the requirement for permits. 18
Permits could be required for portions of the new facilities. Some future operations may require District permits and applicants will need to apply for an Authority to Construct. Potential uses that could be subject to District permit approval include, but are not limited to the following Stationary

equipment installed as part of the project could require District permits. The following list is provided as a guide to equipment and operations that may have permitting requirements, but should not be viewed as exclusive.

- Generators (50 hp or greater)
- Backup Generators
- Fuel storage or changes to existing fuel storage
- Boilers

Also any modifications to existing equipment including fuel storage could require permit or permit modification from the District. Permits and permit modification should be received prior to the start of construction. **To minimize potential delays, prior to the start of the project, please contact David Dixon of the District's Engineering Division at (805) 781-5912 for specific information regarding permitting requirements.** 18

Additionally, ARB is currently working on a new Air Toxic Control Measures that will affect ground support equipment. The airport will need to comply with these new requirements which are expected to be finalized later in 2006 or early 2007. 19

Again, thank you for the opportunity to comment on this proposal. If you have any questions or comments, or if you would like to receive an electronic version of this letter, feel free to contact me at 781-4667. 20

Sincerely,

Melissa Guise
Air Quality Specialist

MAG/sll

cc: Tim Fuhs, SLOAPCD Enforcement Division
Karen Brooks, SLOAPCD Enforcement Division
David Dixon, SLOAPCD Engineering Division

Attachments Attachment 1 - Natural Occurring Asbestos Exemption Form (NOA)

h:\ois\plan\response\letters\3112-1.doc

San Luis Obispo County Air Pollution Control District

1. The dust abatement program outlined as Mitigation Measure 5.5-1 on pages 141 through 143 of the Draft EA/EIR includes a provision to sweep streets at the end of each day. In addition, see the response to comment #4 of this letter.

2. To address the concerns of the SLOCAPCD, the following two new sentences have been added after the first sentence in the second bullet on page 142 of the Draft EA/EIR.

   ”The DOC/CDPF shall be placed on the equipment that will be used the most and that produces the greatest emissions. The SLOCAPCD shall review and approve the installation of the filters prior to the start of construction activities.”

3. To address the concerns of the SLOCAPCD, the speed limit included in the eighth bullet describing an element of the dust abatement program on page 142 of the Draft EA/EIR has been revised from 25 mph to 15 mph.

4. To address the concerns of the SLOCAPCD, the recommended revisions to the mitigation measure addressing street sweepers have been made.

5. Although the Airport is within a candidate area for Naturally Occurring Asbestos (NOA), it is unlikely that any earthmoving activities would result in the discovery of NOA because the project site previously has been subject to earthmoving operations. Impact 5.19-5 on page 278 of the Draft EA/EIR acknowledges that asbestos may be encountered during construction and demolition activities. Mitigation measure 5.19-5 on page 179 of the Draft EA/EIR identifies the procedures that the County would use to determine whether asbestos is present at construction sites and the course of action to take should asbestos be discovered.

6. The Proposed Action includes the demolition of some improvements at the Airport and it is possible that utility pipelines would need to be removed or relocated. As stated in Mitigation Measure 5.19-5 on page 279 of the Draft EA/EIR, the County would comply with all applicable regulatory jurisdictions and this would include the requirements stipulated in the National Emission Standard for Hazardous Air Pollutants (40CFR61, Subpart M – asbestos NESHAP).

7. Impact 5.19-5 on pages 278 and 279 of the Draft EA/EIR acknowledges that contaminated soils could be encountered during construction activities. The mitigation measure on page 279 indicates that the County would follow all laws, regulations, and local procedures should any contaminated soils be encountered. The individual measures identified by the SLOCAPCD would be included, as appropriate, in the County’s response to encountering contaminated soils during construction activities.

8. The County does not expect to conduct developmental burning as part of the construction of the various project components, but acknowledges that permitting requirements of such

activities do exist and the County would comply with such requirements should developmental burning activities take place as part of the construction effort.

9. Section 5.5.1.1 on page 134 of the Draft EA/EIR acknowledges that a permit associated with construction and operation may be required. However, specific equipment to be used during construction or installed as part of the Proposed Action is not known at this time. Once this is known, the Airport will contact the District's Engineering Division for specific permitting requirements.

10. The construction schedule associated with the Proposed Action has taken into account many of the suggestions of the commenter. For example, as stated on page 89 of the Draft EA/EIR, construction truck trips associated with the transport of fill materials would occur at night (i.e., after the p.m. peak hour and before the a.m. peak hour on Tank Farm Road). In addition, the construction of the runway extension would occur in phases because of the need to complete certain aspects of the construction prior to beginning other aspects of construction (e.g., the transport of fill material precedes any compaction of soil, which precedes the construction of the runway pavement). Therefore, a Construction Activity Management Plan is not necessary and has already been taken into consideration by the County as part of the Proposed Action.

11. Most DPM emissions are temporary and intermittent, as these emissions are associated with construction equipment. Other DPM emissions sources are ground service equipment and diesel trucks that operate at the Airport. The emissions from these sources are small in comparison to the construction equipment and would occur whether or not the Proposed Action is approved and implemented. Therefore, the focus on reducing DPM emissions is on construction-related activities. Mitigation Measure 5.5-1 on pages 141 through 143 of the Draft EA/EIR includes the installation of diesel oxidation catalysts (DOC) and catalyzed diesel particulate filters (CDPF) to reduce DPM emissions during construction (see also the response to comment #2 of this letter). In addition, non-construction-related DPM emissions would be substantially improved by the increased reduction of sulfur in diesel fuel. The long-term effects of DPM emissions on chronic health impacts would be small compared to the standard of 70-year exposure to these toxic substances. Therefore, the impacts of diesel construction emissions would be less than significant.

12. Appendix F has been revised to show all emissions calculations, assumptions, and changes to default values.

13. The impacts associated with operational-related emissions are presented on pages 144 through 146 of the Draft EA/EIR. This analysis does include an increase in the number of vehicles associated with the Airport operations. As stated, there would be an increase in PM10 and PM2.5 emissions, but these increases would be less than the thresholds of significance. Compared to the Baseline Conditions, the Proposed Action would have the same emissions for ROG and SO2 and would have a decrease in emissions for CO and NOx. Therefore, this impact is less than significant and no mitigation measures are warranted.

14. The unit of measurement used in Table F-3 on page F-6 of the Draft EA/EIR is aircraft operations, which equals an arrival or a departure. The units of measurement used Table F-4 on page F-9 of the Draft EA/EIR is the annual vehicle miles traveled.

15. A screening level health risk assessment has been performed and is included as Appendix Q. The conclusion of the screening level health risk assessment is that no significant health risk effects would occur as a result of the Proposed Action.

16. All construction phase mitigation measures outline for Phase I and referenced on pages 141 through 143 would apply to construction activities associated with Phase II.

17. Mitigation Measure 5.5-1 on page 147 of the Draft EA/EIR addresses the construction-related impacts that would occur during Phase II of the Proposed Action. This mitigation measure is intended to require the County to continue to implement the construction-related measures outlined for Phase I of the Proposed Action. To clarify this intent, page 147, paragraph 1, sentence 2 of the Draft EA/EIR is revised as follows (new text is double underlined):

> ” With the continued implementation of this mitigation measure, <u>which is detailed on pages 141 through 143</u>, the construction-related emissions impact would be less-than-significant.”

18. See the response to comment #9 of this letter.

19. The County acknowledges that coordination for permits from the SLOCAPCD is necessary and will contact the SLOCAPCD for permits prior to the start of construction.

20. The County acknowledges that the ARB is currently working on new Air Toxic Control Measures that will affect ground support equipment. The County will comply with these new requirements when they are finalized.

AVIATION CONSULTANTS INC.

945 Airport Drive
San Luis Obispo, CA 93401
Phone: 805-782-9722
Fax: 805-545-9225

March 14, 2006

Mr. Bill Robeson
Department of Building and Planning
County Government Center
San Luis Obispo, CA 93408

RE: Draft Environmental Assessment/Environmental Impact Report
San Luis Obispo County Regional Airport Master Plan Update

Dear Mr. Robeson:

This letter is written in support of the Proposed Action identified in the subject report. The projects identified, most notably the runway extension, will ensure aviation services are appropriately provided for the citizens of our County.

ACI is a privately held jet charter and management company based at San Luis Obispo County Regional Airport. ACI also operates the San Luis Jet Center, which is a full service Fixed Based Operator (FBO) that provides complete support for both corporate and general aviation users. Although we have met with a great deal of success and have brought many needed services to the airport, our continued success is predicated on the ability of the County to effectively carry out the projects proposed in Master Plan Update by Airport Management. Without the implementation of the projects contained in the document, the airport will fail to achieve its full potential and companies such as ACI will ultimately be forced to leave. 1

ACI represents a value to the community and serves as an example of what government (Airport Management) and the private sector (airport tenants) are capable of when working together to achieve results and when afforded the right resources. The San Luis Airport is truly unique in that it offers the County a way to grow financially and generate new business with very little physical expansion.

I commend Airport Management for putting so much effort into developing a viable and futuristic plan to maximize the County's use of its existing resources and highly recommend that the Board of Supervisors certify the EA/EIR when presented by County staff.

Sincerely,

William R. Borgsmiller,
President
Aviation Consultants, Inc.

Aviation Consultants, Inc.

1. The comments in support of the proposed action are acknowledged and will be considered by the FAA and the County as part of their respective decision-making processes.

California Native Plant Society

2707 K Street, Ste. 1 • Sacramento, CA 95816-5113 • (916)447-2677 • FAX (916)447-2727

Friday, March 31, 2006

To: Mr. Bill Roberson
Dept. of Planning and Building
San Luis Obispo County Government Center
San Luis Obispo, CA 93408

Comments on Draft EA/EIR for San Luis Obispo County Regional Airport Master Plan Update, February 2006

The California Native Plant Society is a statewide non-profit organization of some 10,000 scientists, educators, and laypeople dedicated to the conservation and understanding of the California native flora. The San Luis Obispo Chapter has worked for decades with the County and with the City of San Luis Obispo regarding the conservation of rare flora around the City, including the airport area.

The biological analysis identifies three CNPS List 1B plants as being present in the Tank Farm area wetlands, these being Congdon's Tarplant, Hoover's Button celery, and San Luis Obispo Morning Glory. The impacts to each of these plants cannot be assessed by a reviewer, as there is no specific information on the locations of the plants. The document indicates that 320.000 cubic yards of fill will be required, but there is no indication if any of this fill will bury or avoid CNPS 1B plants. CNPS can therefore not find any quantitative substantiation that impacts to these plants will be less than significant. As the plants are all wetland species, it should be possible to estimate total wetland impacts as a crude estimate of the impact to the three plant species, and also to address the loss of wetlands, if any, in terms of acreage and mitigation options. 1

The City of San Luis Obispo has gone to great lengths to mitigate against take of Congdon's Tarplant by requiring contribution to offsite mitigation that has included construction of seasonal wetlands at Laguna Park and near Foothill Boulevard. This document makes no effort to establish a possibility of either on-site mitigation or off-site mitigation (similar to that used by the City of San Luis Obispo) that might justify the statement that impacts will be less than significant. It is also reasonable for a CEQA document to present some land use options that might have zero net impact on the Tank Farm area wetlands. 2

The Plan also indicates that fill for this project will come from the "Flower Mound Area" on the north side of Tank Farm Road, but fails to list to species that might be impacted by such large scale excavation. The name of the 'mound' certainly suggests that this should have been given some attention. 3

Thank you for your consideration:

David H. Chipping
Conservation Chair: San Luis Obispo Chapter of CNPS
1530 Bayview Heights Drive
Los Osos, CA 93402

(805) 528-0914
dchippin@calpoly.edu

California Native Plant Society

1. As stated on page 227 of the Draft EA/EIR, a total of 0.184 acres of wetlands would be affected by the proposed action. However, as stated on page 206 of the Draft EA/EIR, only Congdon's Tarplant has the potential to occur on the project site. Mitigation Measure 5.10-3 on page 207 of the Draft EA/EIR addresses the measures to mitigate the potential impacts to Congdon's Tarplant. In addition, Mitigation Measure 5.11-1 on pages 227 through 231 of the Draft EA/EIR addresses the measures to mitigate the wetland impacts that would occur as a result of the proposed action.

2. Mitigation Measure 5.10-3 indicates that the County shall compensate for the loss of Congdon's Tarplant and its habitat by creating, restoring, or enhancing habitat or contributing in-lieu funds to an existing or new restoration project. Therefore, the possibility of either on-site mitigation or off-site mitigation is included and the resulting impact would be reduced to a level of less than significant.

   In addition, the proposed action does not result in any wetland impacts on the Chevron Tank Farm property. Therefore, it is not appropriate for the proposed action to identify any land use options on this property.

3. As stated in the City of San Luis Obispo's Airport Area Specific Plan (AASP), the Flower Mound on the north side of Tank Farm Road does not contain any threatened or endangered species or habitat that support such species. Therefore, the use of fill from this location would not have any affect on threatened or endangered species.

APPENDIX N

Vernal Pool Branchiopod Habitat Assessment

SAN LUIS OBISPO COUNTY REGIONAL AIRPORT

Vernal Pool Branchiopod Habitat Assessment

Prepared for:
San Luis Obispo County

May 5, 2006

SAN LUIS OBISPO COUNTY REGIONAL AIRPORT

Vernal Pool Branchiopod Habitat Assessment

Prepared for:
San Luis Obispo County

May 5, 2006

1425 N. McDowell Boulevard
Suite 105
Petaluma, CA 94954
707.795.0900
www.esassoc.com

Los Angeles

Oakland

Orlando

Sacramento

San Francisco

Seattle

Tampa

203092

ESA

TABLE OF CONTENTS

San Luis Obispo County Regional Airport Vernal Pool Branchiopod Habitat Assessment

List of Tables

List of Figures

SECTION 1.0
Introduction

A. Purpose of Habitat Assessment

This report presents the results of a focused habitat assessment that was conducted for vernal pool branchiopod species (fairy shrimp) at the San Luis Obispo County Regional Airport on April 28, 2006. The assessment was conducted at the request of the U.S. Fish and Wildlife Service (USFWS) in support of environmental review of the Runway 11/29 Expansion project. The study area was located on San Luis Obispo County Regional Airport property, east of the East Fork of San Luis Obispo Creek (EFSLO Creek), San Luis Obispo County, California.

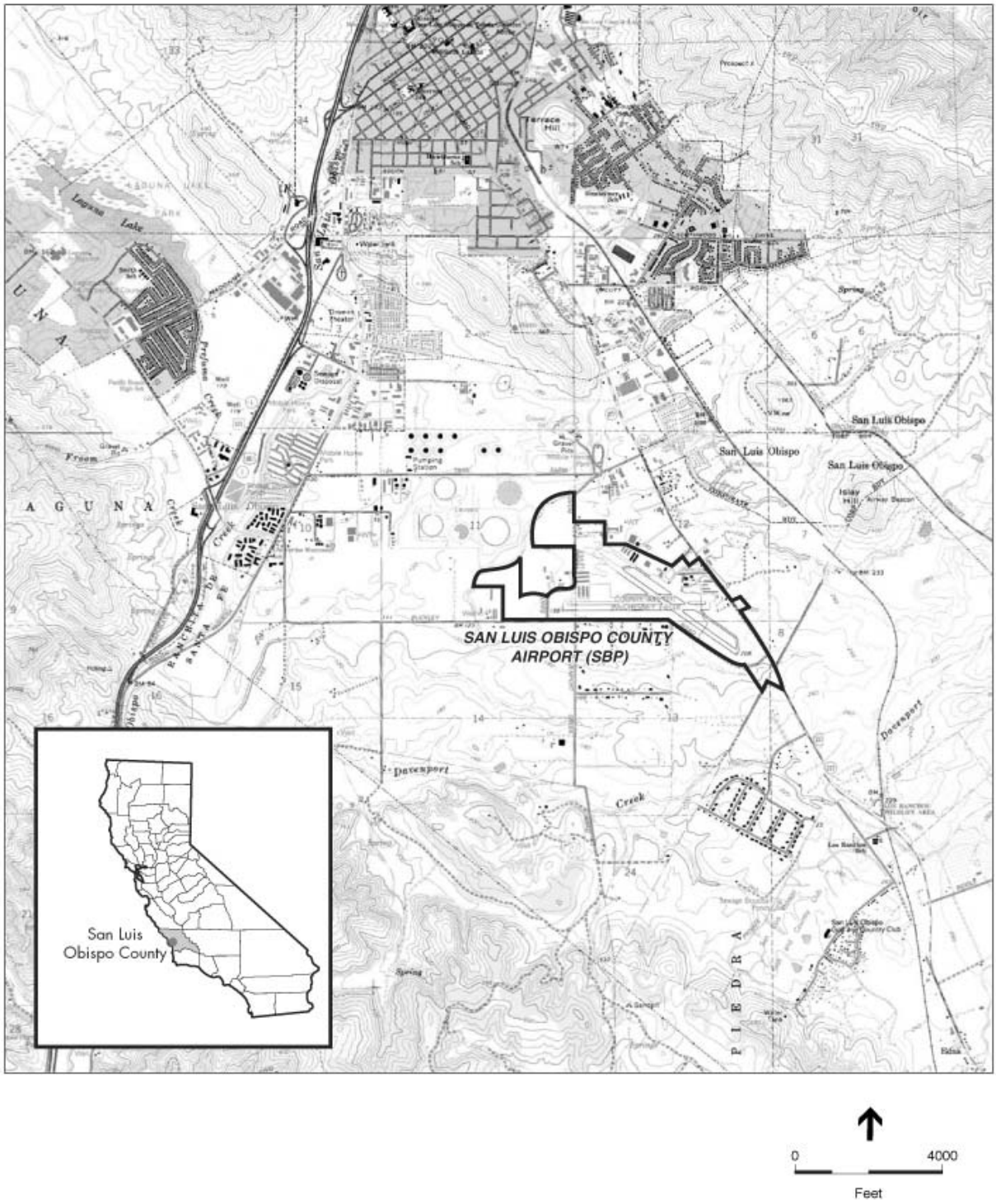
The USFWS has not issued specific survey or reporting guidance for vernal pool branchiopod habitat assessments. This report describes available aquatic habitat relative to the habitat requirements of vernal pool branchiopod species, with principal consideration given to the vernal pool fairy shrimp (*Branchinecta lynchi*).

B. Study Area Location

The San Luis Obispo County Regional Airport is located in the City of San Luis Obispo, San Luis Obispo County, California (**Figure 1**). The study area is bound to the north and west by EFSLO Creek, to the east by the airport and industrial facilities, and to the south by residential development and annual grasslands. Elevations in the study area range from approximately 120 to 160 feet above mean sea level. The Chevron/Unocal property located west of EFSLO Creek support annual grasslands punctuated with seasonal wetlands and intermittent swales and is known to support the federal-listed threatened vernal pool fairy shrimp.

C. Proposed Project

The primary project includes the proposed extension of Runway 11/29 by 800 feet. Most of the other airfield, aviation support facilities, and non-aviation projects identified in the project EA/EIR are functionally related to the proposed extension of Runway 11/29. In addition to airfield improvements, the project Master Plan includes new emergency and service access to ensure compliance with the FAA's *Runway Safety Area Program* and Federal Aviation Regulation (FAR) Part 139. Specific project activities are discussed in the project EA. The project would not alter EFSLO Creek or extend west of this feature, but the runway extension would put some project facilities on undeveloped grasslands and active farmlands located within several hundred feet of occupied vernal pool fairy shrimp habitat on the Chevron/Unocal property.



Source: Topo, 2006

Figure 1
Location of the San Luis Obispo County Regional Airport
on the Pismo Beach 7.5-Min. USGS Quadrangle

SECTION 2.0
Site Assessment

A. Survey Methods

ESA conducted the following tasks as part of this survey: (1) a review of literature, maps, and aerial photos to determine existing conditions of the site; and, (2) a focused assessment of upland habitats, wetlands and seasonally pooled or ponded features in the study area. Prior to assessing the site, the California Natural Diversity Database (CNDDB, 2006) and in-house records were searched to identify the local distribution of fairy shrimp in San Luis Obispo County.

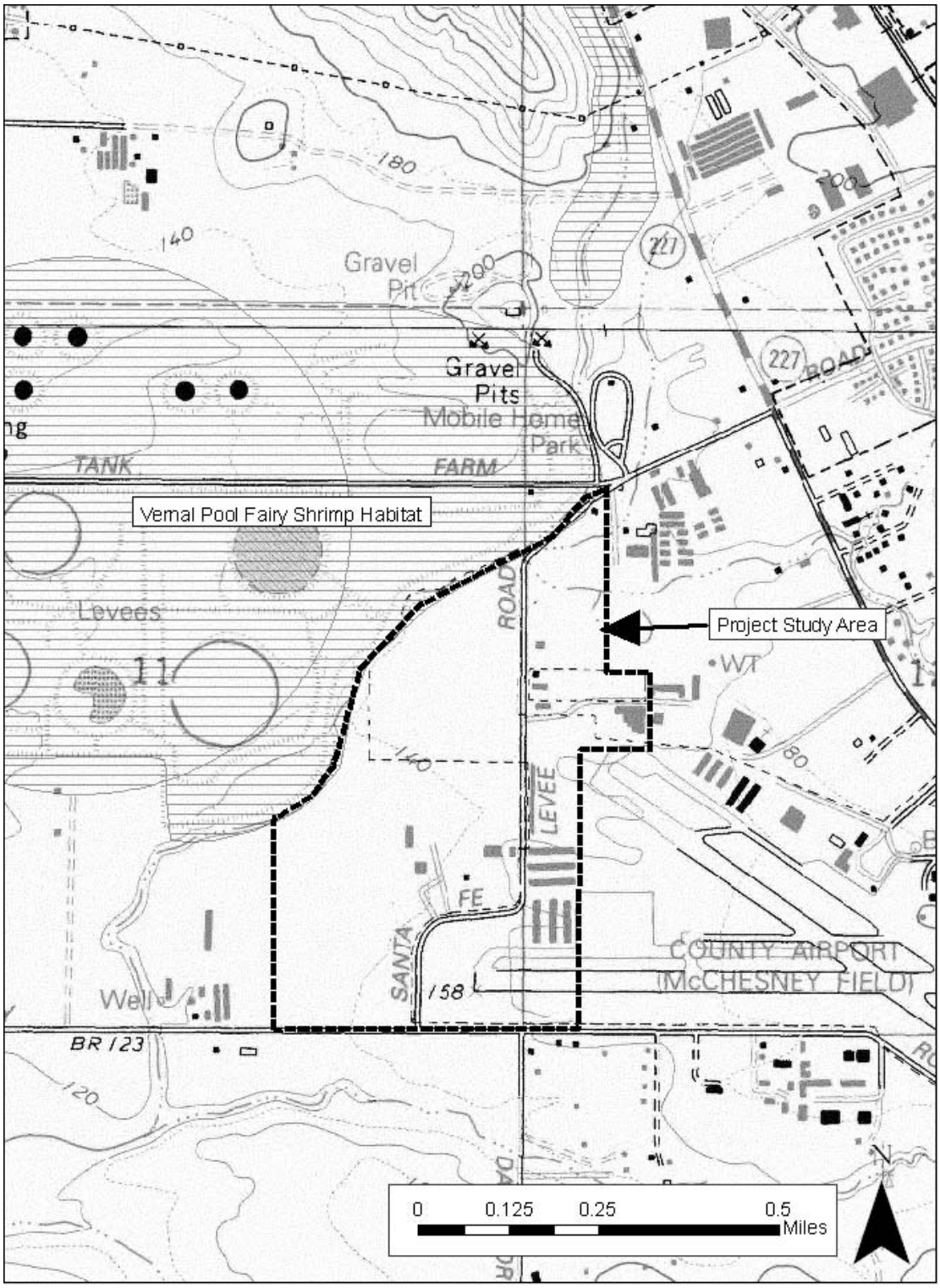
ESA biologist Brian Pittman, CWB, conducted a single habitat assessment survey of the study area indicated in **Figure 2** on April 28, 2006. The majority of aquatic features identified were drainage channels or floodwater detention basins, neither of which provide potential habitat for vernal pool branchiopods, but were characterized and photo-documented. Other aquatic features were also reviewed and described to determine their value as habitat for branchiopods. The assessment was conducted between 0930 and 1230 PST under calm survey conditions and followed a period of recent rain (within 48 hours). Standing water was present to assist in assessing hydrology and topographic relief.

Previously, ESA biologists performed a formal wetland delineation of waters of the United States for the project site on July 8th and 9th, 2003 and on September 29, 2005 (ESA, 2006). The wetland delineation was also referenced when preparing for the present survey.

The information collected during this analysis included hydrology, topography, disturbance regime, and invertebrate species present to assist in the determination of habitat suitability for vernal pool fairy shrimp. For each study location, vegetation and hydrology were noted, dominant plant species were recorded, and representative photographs were taken.

B. Vernal Pool Branchiopod Range and Sightings Within One Mile of the Survey Area

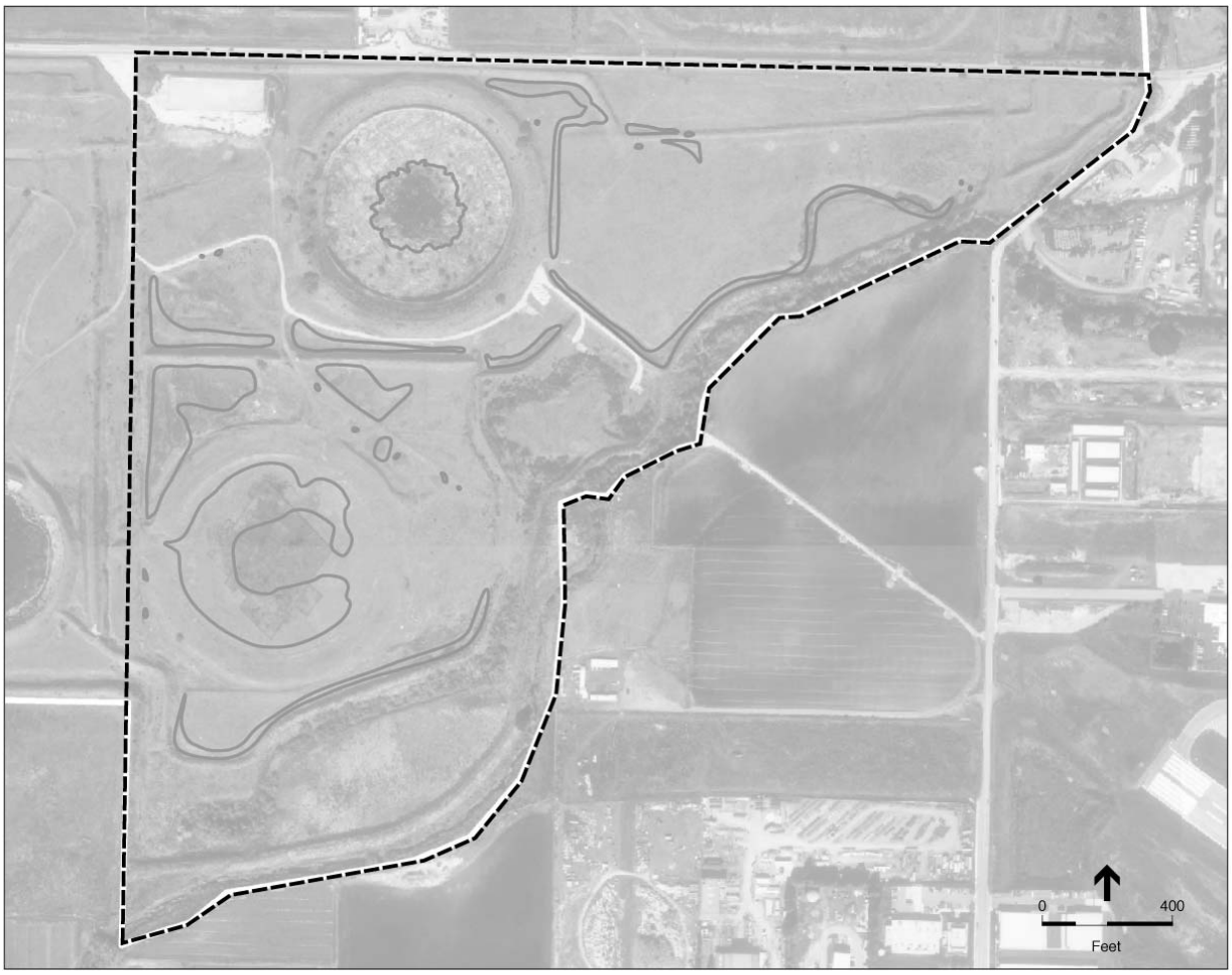
The vernal pool fairy shrimp (*B. lynchi*) is the only special status branchiopod that occurs in the regional project vicinity. Neither the CNDDB (2006) nor other sources report vernal pool fairy shrimp in the SBP airport survey area. The only reported sighting in the vicinity of San Luis Obispo is from the Tank Farm (Chevron/Unocal) property located west of EFSLO Creek (**Figures 2 and 3; Table 1**). These shrimp populations are considered extant based on recent surveys by David Wolff (2005) and earlier survey work by C. Rogers (CNDDB, 2006).



Source: CNDDB, 2006

Figure 2

Fairy Shrimp Study Area Boundary and CNDDB-identified Vernal Pool Fairy Shrimp Habitat on the Chevron/Unocal Property, San Luis Obispo, California



Source: Wolff Environmental, 2005

Figure 3

Known Vernal Pool Fairy Shrimp Habitat on the Chevron/Unocal Property

TABLE 1
CNDDB-Reported California Vernal Pool Fairy Shrimp Sightings
Near the Study Site

	Location	Lat / Long
1	Tank Farm, Tank Farm Road. At their closest point to the project area, known vernal pool fairy shrimp is located within 200 feet of the SBP project area, north and west of EFSLO Creek (Figure 3).	35.24597º N, -120.65997º W (NAD 83)

SOURCE: CNDDB, 2006

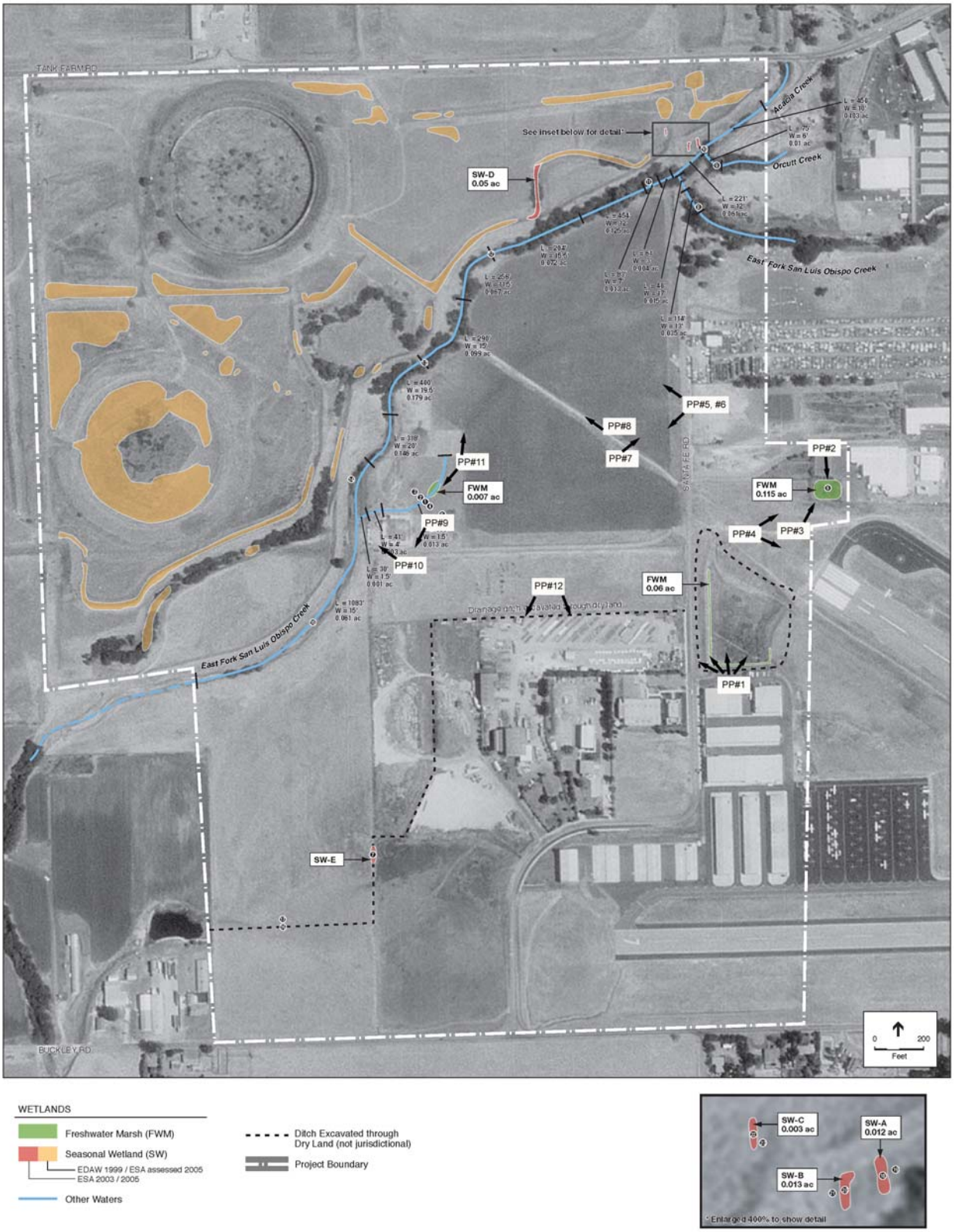
C. Habitats in the Study Area

The location of aquatic features analyzed in the study area is presented in **Figure 4**. Additionally, numerous photos were taken to document upland habitat conditions in areas that were not conducive to supporting fairy shrimp.

As identified in ESA's preliminary SBP wetland delineation (ESA, 2006), biological resources in the project area fall into four broad categories: 1) California annual grassland or ruderal communities associated with expanses of infield and other undeveloped areas on and in the vicinity of the Airport; 2) riparian, wetland, and aquatic habitats occurring in and along the creeks and detention basins; 3) urban developed lands with ornamental vegetation; and 4) agricultural lands. These areas provide varying degrees of habitat for native vegetation and wildlife; however, only the first category potentially provides habitat for vernal pool branchiopods. High quality vernal pools and swales such as those on the Chevron/Unocal property are absent from the SBP study area. Available habitat is described below.

Vegetation that persists despite frequent mowing on the airfield includes yellow star-thistle (*Centaurea solstitalis*) intermixed with non-native grasses and herbaceous species such as wild oats (*Avena barbata*), soft chess (*Bromus mollis*), annual fescues (*Vulpia* spp.), perennial ryegrass (*Lolium perenne*), rip-gut brome (*Bromus diandrus*), black mustard (*Brassica nigra*), Russian thistle (*Salsola iberica*), wild radish (*Raphanus sativus*), and sweet fennel (*Foeniculum vulgare*). These species are also common on lands surrounding the Airport and on the perimeter of agricultural lands.

Less frequently disturbed annual grassland areas located on the Chevron/Unocal Tank Farm to the north provide habitat of moderate value to wildlife and are made up of a mix of native and non-native grasses as well as herbaceous plant species. Grassland species found here (ESA, 2003; EDAW, 1999) include ripgut brome (*Bromus diandrus*), soft chess (*Bromus hordeaceus*), purple needlegrass (*Nasella pulchra*), tarweed (*Hemizonia* and *Centromadia* sp.), owl's clover (*Castilleja densiflora* ssp. *obispoensis*), and fennel (*Foeniculum vulgare*). Overall, the annual grasslands vegetation community is very different on either side of the creek.



Source: ESA

Figure 4

Location of Photo Points in the Airport Study Area

Along the Airport's northern and western boundaries, EFSLO Creek and its tributaries provide riparian vegetation along much of their lengths. The riparian overstory is mixed, with arroyo willow (*Salix lasiolepis*) dominant in many places, particularly in the downstream reaches. Overstory co-dominants include California black walnut (*Juglans californica*), western sycamore (*Platanus racemosa*) and coast live oak (*Quercus agrifolia*) with blue gum eucalyptus (*Eucalyptus globulus*) occurring in the upstream reaches near Tank Farm Road and Santa Fe Road. The understory has been disturbed along all creeks and contains a mix of native and non-native plant species. Understory shrubs occurring on creek banks include coyote brush (*Baccharis pilularis*) and California sage (*Artemisia californica*) where the canopy is open and California blackberry (*Rubus ursinus*), as well as the non-native Himalayan blackberry (*Rubus discolor*) in both sun and shade. Herbaceous species occurring in the riparian corridor include mugwort (*Artemisia douglasiana*), poison hemlock (*Conium maculatum*), smilo grass (*Piptatherum miliaceum*), wild oat (*Avena* sp.), Italian thistle (*Carduus pycnocephalus*), and sneezeweed (*Helenium puberulum*).

Instream wetlands in the project footprint are variable but most often dominated by bentgrass, sedge (*Cyperus eragrostis*), cattail (*Typha latifolia*), and arroyo willow. These wetlands generally occur in stream reaches where the overstory canopy is sparse to open, with cattail dominating wetlands in the most open reaches. Instream wetlands, such as those in EFSLO Creek and tributary drainages do not provide habitat for branchiopod species due to their continuous, sustained flows.

Freshwater marsh within the project footprint is also variable. That occurring in the northern detention basin (PP#2 and PP#3 in **Figure 4**)[1] is dominated by arroyo willow, water smartweed (*Polygonum amphibium*), spikerush (*Eleocharis macrostachya*), and bulrush (*Scirpus* sp.).

Seasonal freshwater emergent wetlands occur throughout the Tank Farm site and are virtually absent from the SBP study area. These seasonally inundated wetlands dry out in the summer months and are dominated by common spikerush (*Eleocharis macrostachya*), Congdon's tarplant (*Centromadia parryi* ssp. *congdonii*), and rabbitsfoot grass (*Polypogon monspeliensis*).

The developed areas of the Airport are generally landscaped with common horticultural species, including pines (*Pinus* sp.), juniper (*Juniperus* sp.), and iceplant (*Carpobrotus* sp.). Agricultural lands were plowed and planted with dry farmed grasses. These areas support ruderal species, such as black mustard, yellow star thistle, and ripgut brome along their perimeters.

[1] Photo point photographs are presented in **Attachment A**.

D. Photo Point Descriptions[2]

Photo Point #1 (Southern Detention Pond and Excavated Channel). Four photographs were taken at this location to document the freshwater marsh flood detention basin and industrial lands located west of PP#1. As **Figure 5** illustrates, this water detention basin retains water from rainfall events and is excavated into dry land. As designed, water ponds in a channel that was excavated in the south and west portions of this basin. The estimated maximum depth of this feature is greater than 5 feet at full capacity, though typical depths are more likely in the rang of 1.0 to 1.5 feet. When water levels exceed the basin's holding capacity, flows exit to the west through a linear drainage ditch that was excavated in dry land. Flows continue west and south through this drainage ditch, through feature SW-E, and can be substantial. Based on their recent origin and largely sporadic hydrology that is subject to singular intensive flows, neither feature is considered to provide habitat for vernal pool fairy shrimp.

Views to the west from Photo Point #1 (**Figure 6**) show the industrial activities in this area. The ground elevation in the industrial facility has been raised with imported coarse gravel. This area is used for storage of tractor-trailers, vehicles, and shipping containers, as well as building materials and concrete. PP#12 (**Figure 13**) provides another view of this facility. While mostly devoid of vegetation, portions of the industrial facility support annual grasses; however, no evidence of ponded water or seasonal wetlands was observed in this area.

Photo Point #2 and #3 (Northern Detention Pond). These photos document a second excavated stormwater detention pond that supports freshwater marsh habitat. Based on the prevalence of willows (*Salix* sp.) around the pond perimeter, this feature likely retains water into the summer months and may hold water year-round (**Figure 7**). Due to the extended hydroperiod, recently excavated origin, and water depths persistently greater than 4.0 feet, this feature is not considered to provide habitat for vernal pool fairy shrimp.

Photo Point #4 (Runway 11). This location shows two views of upland habitat in the near-runway area. When Runway 11 was constructed, the entire area located east of Santa Fe Road was graded, with slopes and elevations carefully contoured to avoid ponding except in the excavated detention basins. The elevation of the runway is roughly 10 feet higher than Santa Fe Road with gradual, roughly 5 percent slopes on the north and west sides of Runway 11. By design, only the two excavated detention basins pond water. No features east of Santa Fe Road appear capable of supporting vernal pool fairy shrimp.

Photo Point #5 through #8 (Agricultural Lands). This location on Santa Fe Road was chosen to document agricultural conditions in the western portion of the study area (**Figure 9**). Agricultural lands in the study area were tilled in winter 2006 and supported a dry-farmed grass crop when viewed in April 2006. Darker vegetation in the center of PP#5 (**Figure 9**) was black mustard and a few other invasive herbs located in close proximity to the runway approach lights. With the exception of two low quality features documented as PP#7 and PP#8 (**Figure 10**), there was no evidence of ponding or standing water in these agricultural lands. PP#7 shows pooled

[2] Photo point figures are presented in **Attachment A** and their location shown in **Figure 4**.

water (~3 cm depth) in a tire rut that was created during recent agricultural activities, and PP#8 shows a dry puddle feature in the access road. The hydrology of the puddle is not known, but both are believed to pond water only briefly. Both features showed vehicle activity and no evidence of recent invertebrate activity (e.g., ostracod carapaces). The tire rut pool at PP#7 appears to have been created in 2006, and at only a few months old does not provide habitat for vernal pool fairy shrimp. The puddle at PP#8 did not hold water even after the recent rains and does not appear to have the hydrology necessary to support this fairy shrimp.

The trace of a historic swale passes through this area and continues downstream to PP#8 (**Figure 12**). This feature does not pond water in the agricultural area.

Photo Point #9 through #11 (4-H Ranch). This area was an active livestock ranch that was recently managed by the local 4-H chapter. Between February and April, 2006 the chapter vacated the site in advance of the runway extension project. In the process of removing their equipment during this wet period, the tire rut pool identified in PP#10 was inadvertently created.

Three aquatic features were identified and examined on the 4-H ranch lands, with the remaining portions of this area supporting uplands habitat and annual grasslands. Of the three features, PP#9 (**Figure 11**) shows a small, shallow puddle located in the main parking area for the ranch facility, PP#10 shows a recently created tire rut located in a seasonally moist area immediately adjacent to the barn, and PP#11 documents an ephemeral swale that passes through this area and drains to EFSLO Creek (**Figure 12**).

The two shallow puddle features were pooled at the time of the assessment to a depth of 2 cm at PP#9 and 4 cm in the deepest portions of the tire rut at PP#10. Both features appear as though they would dry rapidly following a storm event. The small size of the pool at PP#10 (1 foot x 1 foot) and its location immediately adjacent to the barn (within 5 feet) in an active work area make the presence of vernal pool fairy shrimp at this site unlikely. This species' presence at PP#9 pool, which is located in the immediate staging area for the barn, is equally suspect due to it's small size (4 feet by 6 feet), brief ponding period, and regular disturbances from ranching activities. It is located immediately in front of the barn, as shown in **Figure 11**. These shallow disturbed pools are unlike any of the high quality seasonal wetland features that support vernal pool fairy shrimp on the Chevron/Unocal property.

The freshwater marsh feature that flows through the 4-H ranch is a continuation of the drainage swale that originates on agricultural lands located further north. Due to a natural in-stream impoundment created by cattails (*Typha latifolia*), this feature appears to hold water through a large portion of the year. Emergent vegetation in the ponded portion of this drainage included sedge (*Cyperus eragrostis*) and cattails. Ponding depth was 12 inches, though during storm events it is anticipated that this feature may pool to depths greater than 1.5 feet. When viewed on April 28, 2006, there were no flows in this drainage swale; however, this feature appears to experience substantial flows that are not conducive to the vernal pool fairy shrimp life history.

Representative photographs of upland habitat as viewed from the 4-H ranch area are shown in Figures 13 (PP#12) and Figure 14 (PP#9). No other aquatic habitat was identified in this portion of the study area.

SECTION 3.0
Discussion

High quality seasonal wetland habitat that supports the vernal pool fairy shrimp is present in abundance on the Chevron/Unocal property located west of EFSLO Creek; however, due to a combination of natural conditions and historic management activities similar habitat does not occur in the airport study area. The historic stream oxbows of EFSLO Creek are limited to the north and west sides of the creek and may explain to some degree why such seasonal wetland habitat does not occur south and east of the creek.

Aside from the few low quality aquatic features documented in Section 2, remaining portions of the study areas were confirmed to support upland annual grasslands that would not support vernal pool fairy shrimp. Upland areas have largely been graded to support drainage, as seen in areas located east of Santa Fe Road and agricultural lands, filled to discourage ponding, such as in industrial portions of the study area, or support annual grasslands that do not support natural ponds or seasonal wetlands.

Of the features described in Section 2, only a few puddles of recent origin resembled habitat for vernal pool fairy shrimp, and even then these areas are considered to provide only minimally marginal habitat. This species is likely absent from the study area based on the absence of suitable habitat in this area.

SECTION 4.0
References

California Natural Diversity Database, Rarefind 3. California Department of Fish and Game, Sacramento, California, February 2006.

David Wolff Environmental. 2005. Known vernal pool fairy shrimp (*Branchinecta lynchi*) habitat on the Chevron/Unocal Property.

Environmental Science Associates, 2006. Preliminary Delineation of Jurisdictional Waters at San Luis Obispo County Regional Airport, San Luis Obispo County, California.

Environmental Science Associates (ESA), 2003. Wetland delineation field data collection, July 8th and 9th, 2003.

EDAW, Inc. 1999. *Wetland Delineation for Unocal Tank Farm, San Luis Obispo County*, California. Prepared for Unocal, July 28, 1999. verified by NRCS, September, 1999.

SECTION 5.0
Document Preparation

This document was prepared by:

Brian Pittman
Certified Wildlife Biologist
ESA | Biological Resources
1425 N. McDowell Blvd, Suite 105
Petaluma, CA 94054
707.795-0900 main
707.795-0915 direct
707.795-0902 fax
bpittman@esassoc.com

ATTACHMENT A

Photo Point Photographs

Source: ESA

Figure 5

View Looking East from PP#1, a Freshwater Marsh Detention Basin

Source: ESA

Figure 6
Views from PP#1 Looking North into Industrialized Areas (Top) and West Toward Active Agricultural Lands (Bottom)

Source: ESA

Figure 7

Two Views of Feature No. 2, a 0.115-acre Freshwater Marsh Detention Basin. PP#2 (Top) and PP#3 (Bottom) Looking North

Source: ESA

Figure 8
Views of Sloping Upland Habitat Near Runway 11/29 at PP#4.
The Water Detention Basin from PP#3 is Visible in the Top Photo

Source: ESA

Figure 9

Views of Active Agricultural Lands Located Northwest and Southwest from PP#5 and PP#6

Source: ESA

Figure 10
PP#7 (Top) and PP#8 (Bottom) Showing Puddles of Recent Origin on the Agricultural Lands

Source: ESA

Figure 11
PP#9 (Top) and PP#10 (Bottom) Showing Puddles at the 4-H Ranch Facilities

Source: ESA

Figure 12
PP#11; View Looking Northeast of a Freshwater Marsh that Flows through the 4-H Ranching Facilities

Source: ESA

Figure 13
PP#12 Looking South into Industrial Lands

Source: ESA

Figure 14
Views North and East of Upland Habitats from PP#9

APPENDIX O

Regulatory Context

5.1 Noise

Most environmental noise sources produce varying amounts of noise over time, so the measured sound levels also vary. Various governmental agencies have developed a variety of noise descriptors as a means of quantifying, describing, and regulating these sound levels. This discussion presents an overview of the descriptors that are typically used to assess noise from aircraft and surface traffic as well as construction-related noise.

There are two basic approaches for quantifying, describing, and regulating noise levels that are generally used in the United States for transportation noise sources. These approaches are generally reported in terms of "noise descriptors," which, as described below, are based upon established principles of physics and reported in numerical terms.

The first approach addresses the noise resulting from single noise "events." This approach has the most direct relevance to aircraft noise events, which are generally perceived as discrete occurrences. It also is sometimes relevant in assessing construction noise impacts. These single event descriptors usually are not as directly relevant or meaningful for assessing surface transportation noise sources. Surface traffic noise, particularly from major arterials or freeways handling large volumes of traffic, is usually perceived as a more-or-less continuous background noise level that may vary in magnitude from hour to hour, depending upon the total volume of traffic during any such time period, but which is usually not perceived or described as clearly discrete noise events.

The second type of noise descriptor commonly used to describe aircraft and surface transportation noise is referred to as a "cumulative" noise descriptor. Such descriptors describe in numerical terms the amount of noise occurring at a given location over a defined period of time. This period of time, depending upon the descriptor used, can be as short as one hour, but is more commonly calculated for an annualized 24-hour period. Cumulative noise descriptors can be used to describe noise exposure from a specific source, such as a roadway or an airport, or they can be used to describe total noise exposure from all noise sources affecting a specific location. As discussed more completely below, the cumulative noise descriptor defined for use in the State of California, and which is used in this analysis, is the Community Noise Equivalent Level (CNEL).

The specific descriptors used in this Environmental Assessment / Environmental Impact Report (EA/EIR), and their role in contributing to the analysis, are described below.

Single Event Descriptors Used in this EA/EIR

Single event descriptors are used in this EA/EIR for informational purposes only and are not used to determine whether or not an impact is significant. The two single event descriptors are maximum A-weighted sound level and sound exposure level.

Maximum A-Weighted Sound Level (L_{max})

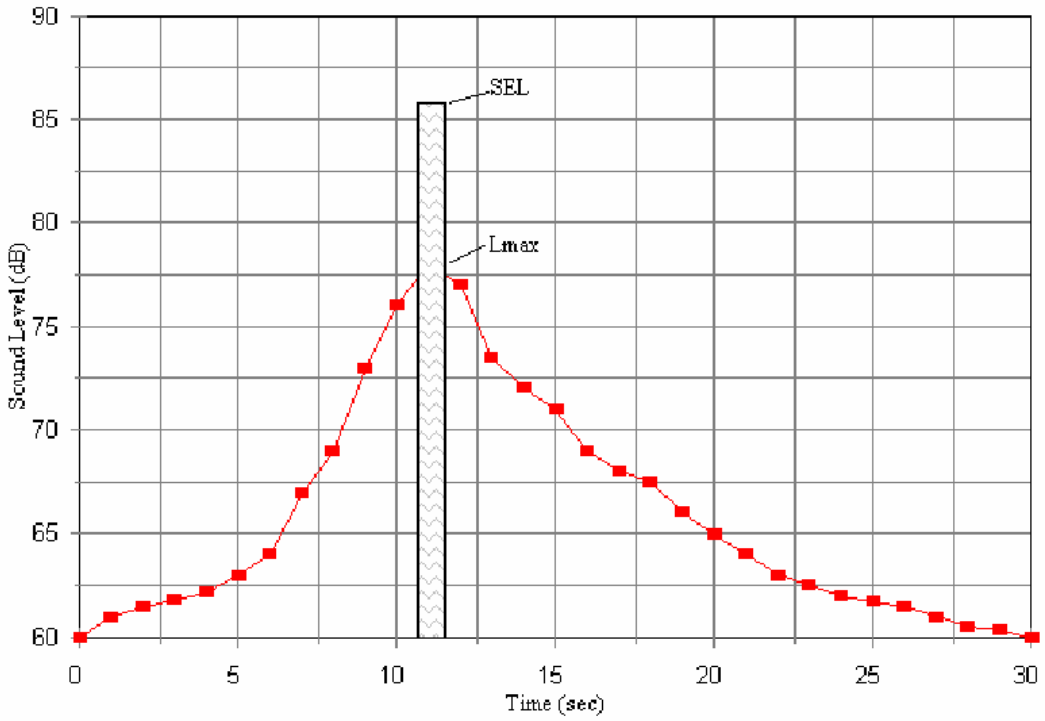
The maximum sound level measured in A-weighted decibels (dBA) is one of the most basic and useful of the single event noise descriptors for purposes of performing an environmental noise

analysis. This descriptor describes the *maximum* noise level reached during a single noise event. This descriptor, however, does not provide any information regarding the *duration* of the noise event nor does it attempt to describe or incorporate noise levels of the specific noise event at any level below the *maximum* level.

Sound Exposure Level (SEL)

This descriptor is measured in terms of A-weighted decibels, but also accounts for the duration of a single noise event. In practical terms, this descriptor is calculated by reference to all of the noise "energy" caused by a single noise event, compressed into a reference duration of one second.

By accounting for the duration of a noise event, the SEL descriptor facilitates the comparison of noise levels generated by different aircraft types or models. Because of the compression of noise energy into a reference duration of one second, the SEL for a typical aircraft noise event is usually 5-10 dB higher than the L_{max} for the same event. The relationship between the SEL and L_{max} for a typical aircraft noise event is shown in Figure 5.1-1.



San Luis Obispo County Regional Airport Master Plan . 203092 ■

Figure O-1
Typical Aircraft Noise Event

Cumulative Noise Descriptors Used in this EA/EIR

Community Noise Equivalent Level (CNEL)

The cumulative noise descriptor used in this analysis is the CNEL. In the case of aircraft noise, this descriptor is used to describe cumulative noise exposure for an annual average day of aircraft operations, including penalties of about 4.8 dB for operations occurring during the evening hours (7:00 p.m.-10:00 p.m.) and 10 dB for operations occurring during the nighttime hours (10:00 p.m.-7:00 a.m.). For calculation purposes, this means that each aircraft event occurring during the evening hours is treated as if three noise events occurred and each aircraft noise event occurring during the nighttime hours is treated as if ten aircraft noise events occurred. These penalties for the evening and nighttime hours are included in the CNEL to account for the assumption that noise events occurring during the evening and nighttime hours are more intrusive or annoying to the average person than events occurring during the daytime hours.

The CNEL descriptor is used by the State of California and San Luis Obispo County to evaluate land use compatibility around airports. Under some circumstances, the CNEL may be appropriate for evaluating construction noise impacts as well, although the short-term, temporary, and often transitory nature of typical construction activities for projects of the type evaluated in this EA/EIR make it significantly less valuable for this purpose.

The CNEL is similar to the Day-Night Average Level (DNL) descriptor used by the FAA for the evaluation of airport improvement projects and in the Part 150 noise compatibility planning process in states other than California. The Federal Aviation Regulations (FAR) recognize the CNEL descriptor in California to maintain consistency with state airport noise assessment criteria. The CNEL and DNL are generally considered equivalent descriptors of the community noise environment within plus or minus 1.5 dB. The only difference between the two descriptors is that the CNEL includes the evening (7:00 p.m. - 10:00 p.m.) weighting penalty, while the DNL does not. The DNL is used by San Luis Obispo County for purposes of assessing surface transportation noise impacts.

A controversial aspect of quantifying aircraft noise exposure in terms of the CNEL is that many people feel that they react to individual aircraft noise events rather than to the annual average CNEL. For this reason, it is important to understand the relationship between single events and the CNEL. The CNEL is calculated by mathematically combining the number of single events that occur during a 24-hour day with how loud the events were and what time of day they occurred. Because of the interrelationship between the weighted number of daily noise events and the noise levels generated by the events, it is possible to have the same CNEL value for an area exposed to a few loud events as for an area exposed to many quieter events. It is for this reason that supplementing a CNEL analysis with a single event analysis is considered useful.

5.2 Compatible Land Use

Land use at SBP is governed principally by San Luis Obispo County. However, numerous other agencies have planning or regulatory powers over SBP. Agency responsibilities, local zoning designations, and policies relating to land use compatibility are summarized below.

Federal Agencies

Federal Aviation Administration

The FAA's primary role is to promote aviation safety and control the use of airspace. The FAA enforces safety standards and investigates and corrects violations as appropriate. SBP must comply with specific FAA design criteria and standards and is seeking the FAA's unconditional approval of the revised (Airport Layout Plan) ALP and federal assistance in funding portions of the Master Plan improvements with (Airport Improvement Program) AIP grants and/or future Passenger Facility Charges (PFCs). FAA regulations applicable to compatible land use include Federal Aviation Regulation (FAR) Part 77 *Obstruction to Navigation*, FAR Part 150 *Airport Noise Compatibility*, and FAA Order 5200.5A *Waste Disposal Sites on or near Airports*.

US Army Corps of Engineers

For a discussion of the U.S. Army Corps of Engineers' (Corps) authority associated with wetlands, see Section 5.11, Wetlands.

US Fish and Wildlife Service

For a discussion of the U.S. Fish and Wildlife Service's (USFWS) authority associated with threatened and endangered plant and animal species, see 5.10, Endangered and Threatened Species of Flora and Fauna.

State/Regional Agencies

California Department of Transportation

In addition to its role in planning and operating certain key parts of the roadway system serving SBP, the California Department of Transportation (Caltrans) is involved in state aviation system planning and research through its Division of Aeronautics and its Office of Research and New Technology. Caltrans prepares and regularly updates the *California Aviation System Plan* (CASP), the vehicle by which Caltrans conducts continuous aviation system planning and guides aviation infrastructure investment priorities (Caltrans, 2003). Caltrans also reviews and has approval authority over changes in ground access to the Airport from SR 227.

California Department of Fish and Game

For a discussion of the California Department of Fish and Game's (CDFG) authority associated with wetlands, see Section 5.11, Wetlands.

Regional Water Quality Control Board

For a discussion of the Regional Water Quality Control Board (RWQCB) authority associated with water quality see Section 5.6, Water Quality.

San Luis Obispo County

San Luis Obispo County's primary role is to guide land use planning in the County. The County prepares and regularly updates the *San Luis Obispo County General Plan*, which includes goals and policies for the Airport and associated facilities. The County's General Plan is divided into fifteen area plans. The *San Luis Obispo Area Plan*, originally adopted in 1980 and updated in 2004, describes County land use policies for a 20-year time frame in the San Luis Obispo planning area, including regulations adopted as part of the Land Use Ordinance and Land Use Element. A large portion of the San Luis Obispo planning area is subject to the *San Luis Obispo County Airport Land Use Plan* (ALUP), which ensures that adjacent new development would not conflict with normal airport operations.

San Luis Obispo County Airport Land Use Commission

The San Luis Obispo County Airport Land Use Commission (ALUC) was established in 1971 under the California Public Utilities Code (Division 9, Part 1: State Aeronautics Act, Chapter 4, Sections 21670 et seq.). The ALUC's primary goals are to preserve and protect the long-term viability of public use airports in the County and to protect citizens and properties surrounding the Airport. The ALUC prepares and adopts the ALUP, which defines compatible land uses and standards for five Aviation Safety Areas, and reviews all projects and proposed development within the ALUP planning area for consistency. The ALUP contains policies and regulations that discourage land uses that would be inconsistent with safe airport operations.

Local Agencies

City of San Luis Obispo

The City of San Luis Obispo is the county seat of San Luis Obispo County and is responsible for land use planning within its boundaries. The City's General Plan contains goals and policies to encourage development that is consistent with the ALUP and Airport operation. The Land Use Element of the General Plan ensures that land use planning is coordinated with the surrounding urban/suburban fringe and adjacent areas beyond the urban reserve line.

Areas within the City's urban reserve line, including the Airport, are eligible for City services and may be appropriate for urban development. The City's General Plan indicates that land to be used for urban development should be annexed and, to that end, the City recently adopted the Airport Area Specific Plan (AASP) to enable annexations in the Airport vicinity.

5.3 Socioeconomic Impacts

Transportation

San Luis Obispo County, the City of San Luis Obispo, and the California Department of Transportation (Caltrans) have jurisdiction over various aspects of the transportation system serving the Airport. The FAA is the lead agency under NEPA for the Environmental Assessment (EA) and San Luis Obispo County is the lead agency under CEQA for the Environmental Impact Report (EIR).

Environmental Justice

On April 15, 1997, the DOT issued a Final DOT Order to comply with Executive Order 12898 (U.S. Department of Transportation, 1996). The FAA refers to the DOT Final Order as a guideline for analyzing environmental justice concerns to minority and low-income populations. Although such an analysis is not required in an EA, the Presidential Memorandum that accompanied Executive Order 12898, as well as guidance set forth by the Council on Environmental Quality (CEQ) and the U.S. Environmental Protection Agency (EPA) encourage the consideration of environmental justice impacts during the preparation of an EA. FAA prepared the following environmental justice analysis to identify the potential for significant adverse impacts that would disproportionately affect minority and low-income populations in the airport vicinity.

Children's Environmental Health and Safety Risks

Children may suffer disproportionately from environmental health and safety risks as a result of their developing bodies and systems and from the effect of products or substances with which they are likely to come in contact or ingest (e,g., air, food, drinking water, recreational waters, soil, or products to which they might use or be exposed). Pursuant to Executive Order 13045, *Protection of Children from Environmental Health Risks and Safety Risks,* FAA Order 1050.1E (Section 16.1b) directs federal agencies to make it a high priority to identify and assess environmental health risks and safety risks to children (i.e., the portion of the population under 18 years of age). Federal agencies are encouraged to ensure that their policies, programs, and activities, and standards address disproportionate risks to children that result from environmental health risks or safety risks.

5.4 Induced Socioeconomic Impacts

Employment

Among the topics addressed in the evaluation of the potential social impacts associated with a Proposed Action, the FAA requires project sponsors to evaluate a proposed project's potential to affect population and housing demand and to change business and economic activity. Such effects are captured in the following evaluation of population and employment.

Public Services

Standards for public services, such as acceptable service ratios and response times, are generally regulated by the state or local jurisdiction (i.e., County, City, and/or Special District).

Utilities

Standards for providing and maintaining acceptable water supply and wastewater treatment services are generally regulated by the state or local jurisdiction (i.e., County, City, and/or Special District).

5.5 Air Quality

Regulation of air pollution is achieved through both federal and state ambient air quality standards and emission limits for individual sources of air pollutants. An "ambient air quality standard" represents the level of air pollutant in the outdoor (ambient) air necessary to protect public health. These ambient standards do not apply to indoor environments.

As required by the federal Clean Air Act, the EPA has identified criteria pollutants and established National Ambient Air Quality Standards (NAAQS or national standards) to protect public health and welfare. NAAQS have been established for ozone, CO, nitrogen dioxide (NO_2), sulfur dioxide (SO_2), PM10, PM2.5, and lead. These pollutants are called "criteria" air pollutants because standards have been established for each of them to meet specific public health and welfare criteria.

The NAAQS are defined as the maximum acceptable concentration that may be reached, but not exceeded more than once per year. California has adopted more stringent ambient air quality standards for most of the criteria air pollutants (CAAQS or state standards). The pollutants of greatest concern in the Airport vicinity are ozone, and PM10. State and federal ambient air quality standards are summarized in Table O-1, which also provides a brief discussion of the related health effects and principal sources for each pollutant.

The following provides a brief summary of the potential health and welfare effects of each of the criteria air pollutants.

Ozone – When volatile organic compounds and nitrogen oxides accumulate in the atmosphere and are exposed to the ultraviolet component of sunlight, the pollutant ozone is formed. Ozone is a pulmonary irritant that affects the respiratory mucous membranes, other lung tissues, and respiratory functions. Exposure to ozone at certain concentrations can result in symptoms such as tightness in the chest, coughing, and wheezing, and can trigger an attack or exacerbate the symptoms of asthma, bronchitis, and emphysema. Elevated concentrations of ozone also interfere with the ability of a plant to produce and store food, damage the leaves of trees, and reduce crop and forest yields.

TABLE O-2
STATE AND NATIONAL CRITERIA AIR POLLUTANT STANDARDS, EFFECTS, AND SOURCES

Pollutant	Averaging Time	State Standard	National Standard	Pollutant Health and Atmospheric Effects	Major Pollutant Sources
Ozone	1 Hour 8 Hour	0.09 ppm 0.07 ppm	0.12 ppm 0.08 ppm	High concentrations can directly affect lungs, causing irritation. Long-term exposure may cause damage to lung tissue.	Formed when reactive organic gases and nitrogen oxides react in the presence of sunlight. Major sources include on-road motor vehicles, solvent evaporation, and commercial / industrial mobile equipment.
Carbon Monoxide	1 Hour 8 Hour	20 ppm 9.0 ppm	35 ppm 9 ppm	Classified as a chemical asphyxiant, carbon monoxide interferes with the transfer of fresh oxygen to the blood and deprives sensitive tissues of oxygen.	Internal combustion engines, primarily gasoline-powered motor vehicles.
Nitrogen Dioxide	1 Hour Annual	0.25 ppm –	– 0.053 ppm	Irritating to eyes and respiratory tract. Colors atmosphere reddish-brown.	Motor vehicles, petroleum-refining operations, industrial sources, aircraft, ships, and railroads.
Sulfur Dioxide	1 Hour 3 Hour 24 Hour Annual	0.25 ppm – 0.04 ppm –	– 0.5 ppm 0.14 ppm 0.03 ppm	Irritates upper respiratory tract; injurious to lung tissue. Can yellow the leaves of plants, destructive to marble, iron, and steel. Limits visibility and reduces sunlight.	Fuel combustion, chemical plants, sulfur recovery plants, and metal processing.
Respirable Particulate Matter (PM10)	24 Hour Annual	50 µg/m^3 20 µg/m^3	150 µg/m^3 50 µg/m^3	May irritate eyes and respiratory tract, decreases in lung capacity, cancer and increased mortality. Produces haze and limits visibility.	Dust and fume-producing industrial and agricultural operations, combustion, atmospheric photochemical reactions, and natural activities (e.g., wind-raised dust and ocean sprays).
Fine Particulate Matter (PM2.5)	24 Hour Annual	– 12 µg/m^3	65 µg/m^3 15 µg/m^3	Increases respiratory disease, lung damage, cancer, and premature death. Reduces visibility and results in surface soiling.	Fuel combustion in motor vehicles, equipment, and industrial sources; residential and agricultural burning; Also, formed from photochemical reactions of other pollutants, including nitrogen oxides, sulfur oxides, and organics.
Lead	Month Quarter	1.5 µg/m^3 –	– 1.5 µg/m^3	Disturbs gastrointestinal system, and causes anemia, kidney disease, and neuromuscular and neurological dysfunction.	Present source: lead smelters, battery manufacturing & recycling facilities. Past source: combustion of leaded gasoline.

ppm = parts per million; µg/m^3 = micrograms per cubic meter

SOURCE: California Air Resource Board, January 9, 2003, http://www.arb.ca.gov/aqs/aaqs2.pdf

Nitrogen Dioxide – When combustion temperatures are extremely high, as in aircraft engines, boilers, furnaces, or automobile engines, nitrogen gas from the atmosphere and from fuel combines with oxygen gas to form various oxides of nitrogen (NOx). Of these oxides of nitrogen, nitrogen dioxide is the most significant air pollutant. Nitrogen dioxide is a lung irritant capable of producing pulmonary edema at high concentrations, and exposure to elevated concentrations can lead to respiratory illnesses such as bronchitis and pneumonia. Nitrate particles and nitrogen dioxide can also block the transmission of light, reducing visibility in urban areas.

Carbon Monoxide – Carbon monoxide is a colorless and odorless gas that is a product of incomplete combustion. At elevated concentrations, this pollutant can have cardiovascular and central nervous system effects. Carbon monoxide is absorbed by the lungs and reacts with hemoglobin to reduce the oxygen-carrying capacity of the blood. At moderate concentrations, carbon monoxide has been shown to aggravate the symptoms of cardiovascular disease. It can also cause headaches and nausea, and in extremely high concentrations, can lead to coma and death.

Sulfur Dioxide – Sulfur dioxide is a colorless gas that is formed when fuels containing sulfur compounds are combusted. Sulfur dioxide can cause irritation and inflammation of tissues with which it comes in contact. Inhalation of elevated concentrations can cause irritation of the mucous membranes, bronchial damage, and can exacerbate pre-existing respiratory diseases such as asthma, bronchitis, and emphysema. Sulfate particles are the major cause of reduced visibility. When combined with other substances in the air, this pollutant can fall to the earth as rain, fog, snow, or dry particles (commonly referred to as “acid rain”). Sulfur dioxide can also accelerate the decay of building materials and certain types of paint.

Particulate Matter – Typical sources of particulate matter are combustion of fossil fuels, industrial processes involving metals and fibers, fugitive dust from wind and mechanical erosion of soil, and photochemically produced particles (complex chain reactions between sunlight and gaseous pollutants). Particulate matter is made up of small solid particles and liquid droplets. Suspended particulates refer to particles of approximately 100 micrometers or less in diameter. Particulates larger than 10 micrometers remain in the nose and throat and are readily expelled. Particles 10 micrometers or smaller can reach the air ducts (bronchi) and the air sacs (alveoli) of the lung. Particles 2.5 micrometers or smaller have the best chance of reaching the lower respiratory tract. These particulates have been associated with increased respiratory diseases such as asthma, bronchitis, and emphysema; cardiopulmonary disease (heart attack); and cancer. Particulate matter can also be a major cause of reduced visibility.

Lead – People and animals can be exposed to lead by breathing or ingesting it in food, water, soil, or dust. Historically, the majority of lead came from the combustion of leaded fuels. However, the use of unleaded fuels has reduced mobile source lead emissions. Unlike unleaded automobile gasoline, aviation gasoline (commonly known as “AvGas” or 100 octane low-lead “100LL”) still contains lead as an antiknock agent. AvGas is generally only used by general aviation aircraft with piston engines. Currently, stationary sources such as lead smelters, battery manufacturers, and iron and steel producers emit the majority of ground-based lead emissions.

Lead is a stable compound that accumulates in the environment and in living organisms where it can interfere with the maturation and development of red blood cells, affect liver and kidney functions, and disturb enzyme activity. Lead exposure can also cause liver disease, affect the normal functions of the reproductive and cardiovascular systems, and cause mental retardation and brain damage in children. Near industrial facilities, concentrations of lead have been shown to slow down the rate of vegetative growth.

Regulatory Agencies

Federal

Regulation of emission sources associated with an airport is a responsibility that is shared among federal, state, and regional agencies. Under the federal Clean Air Act (CAA) Amendments of 1990, federal agencies must make a determination of conformity with the applicable State Implementation Plan (SIP) before taking any action on a proposed project (e.g., setting aside money, granting a permit, etc.). EPA published a rule (referred to as the General Conformity Rule) that indicates how most federal agencies are to make such a determination. The criteria for determining the conformity of such actions state that a conformity determination must be performed when the emissions caused by a federal action (the "net" emissions when proposed action emissions are compared to no-action emissions) equal or exceed what are known as *de minimis* levels. If emissions are below the *de minimis* levels, it can be presumed that the proposed action conforms to the CAA. If emissions are above the *de minimis* levels, a conformity demonstration must be prepared.

The Federal Aviation Administration (FAA) has the responsibility for applying the General Conformity Rule to federal actions involving airport development; however, the General Conformity Rule does not apply to this project because San Luis Obispo County has been designated as attainment or unclassified for all of the existing NAAQS. In other words, there is no applicable SIP with which to judge conformity in San Luis Obispo County, and the FAA is not required to make a conformity determination under the rule.

Transportation conformity is the process used to ensure that states consider the air quality effects of motor vehicle-related transportation plans, programs and projects. The conformity process is applicable to federal actions related to these plans, programs and projects and to projects developed, funded or approved under Title 23 of the United States Code (U.S.C.) or the Federal Transit Act (49 U.S.C. 1601). A motor vehicle emissions budget (one component of an attainment demonstration SIP) is used to determine the air quality effects of such projects. For applicable roadway projects within non-attainment areas to move beyond the design stage, the projects must be included in the area's long range transportation plan (LRTP) and transportation improvement plan (TIP). Further, the TIP must have been found to conform to the area's motor vehicle air pollutant budget, which is contained in the SIP. Again, the Transportation Conformity Rule does not apply because San Luis Obispo County has been designated as attainment or unclassified for all of the existing NAAQS.

State

On the state level, California's air quality management agency, the CARB, regulates mobile emissions sources (excluding aircraft) and oversees the activities of regional/county air districts, which have the primary responsibility for regulating stationary sources. The SLOCAPCD is the local agency empowered to regulate air pollutant emissions from stationary sources throughout San Luis Obispo County. The SLOCAPCD regulates air quality through its permit authority over most types of stationary emission sources and through its planning and review activities. Stationary sources are regulated through a permitting process in which applicants must secure an Authority to Construct and a Permit to Operate from the SLOCAPCD prior to operation of new or modified equipment that may affect air quality. The types of stationary sources at airports that typically operate under SLOCAPCD permits include fuel storage tanks, boilers, and emergency generators.

Standards, Plans, and Policies

Clean Air Plan

Under amendments to the federal CAA, the EPA has classified Air Basins, or portions thereof, as either "attainment" or "non-attainment" for each criteria air pollutant, based on whether or not the national standards have been achieved. In 1989, San Luis Obispo County was designated as non-attainment for the state health-based standard for ozone. Since then, ozone forming pollutants throughout San Luis Obispo County have been significantly reduced.

In 1991, a *Clean Air Plan* was developed to meet the requirements of the California Clean Air Act and, thereby, address the county's non-attainment designation with respect to the state one-hour ozone standard, which is more stringent than the national one-hour ozone standard. The goal of the *1991 Clean Air Plan* was to improve air quality through the 1990s through tighter industry controls, cleaner cars and trucks, cleaner fuels, and increased commute alternatives standard. Some emissions sources at airports, such as petroleum storage tanks and boilers, were affected by new stationary source measures implemented under the *1991 Clean Air Plan*. The *1991 Clean Air Plan* is updated on a triennial basis.

The *1995 Clean Air Plan* added other emissions sources at airports, such as metal parts coatings and cutback asphalt, have been, or will be affected by measures retained in the plan for implementation. The *1998 Clean Air Plan* was primarily a continuation of the *1995 Clean Air Plan*, and it proposed no new control measures for adoption.

Most recently, the 2001 *Clean Air Plan*[1], like the 1998 *Clean Air Plan*, is primarily a continuation of the 1995 Plan and proposes no new control measures for adoption. Ongoing implementation of the control measures adopted through previous plans was expected to bring the county into attainment of the state ozone standard within a three year timeframe.

This state ozone standard was achieved when, for the years 2000 through 2002, no violations of the state hourly ozone standard (0.09 ppm) were measured at any of the six community-based

[1] 2001 Clean Air Plan San Luis Obispo County Air Pollution Control District, December 2001.

monitoring stations in San Luis Obispo County. Based upon that record, the CARB re-designated San Luis Obispo County as attainment with the state health-based ozone standard in January 2004. However, the county remains designated as a non-attainment area for the state PM10 standard.

The SLOCAPCD's *CEQA Air Quality Handbook*[2] recommends that EIRs evaluate consistency with the most recent Clean Air Plan, in this case the *2001 Clean Air Plan*. Consistency means that: 1) the population projections in the plan or project would be equal to or less than those used in the most recent *2001 Clean Air Plan* for the same area, 2) the rate of increase in vehicle trips and miles traveled would be less than or equal to the rate of population growth for the same area, and 3) all applicable land use and transportation control measures from the *2001 Clean Air Plan* have been included in the plan or project to the maximum extent feasible. It should be noted that the District was not required to prepare a 2004 Clean Air Plan, as it was redesignated as attainment for ozone in January 2004.

San Luis Obispo County General Plan

The Land Use and Circulation elements of the San Luis Obispo County General Plan[3] summarizes emission reduction strategies for mobile, stationary, and area sources to protect public health, agricultural crops, scenic resources, and the natural environments from air pollution. An overall goal of the General Plan and 2001 *Clean Air Plan* is to reduce the growth of vehicle trips and miles traveled in urban areas to the rate of population growth within San Luis Obispo County. The land use and circulation management policies and programs designed to assist in reaching this goal are listed below:

- Planning Compact Communities
- Providing for Mixed Uses
- Balancing Jobs and Housing
- Increasing Transit Use
- Promoting Bicycling and Walking
- Managing Traffic Flow
- Communication, Coordination, and Monitoring

Rules and Regulations

Diesel-Fueled Engines

In August 1998, the CARB identified particulate emissions from diesel-fueled engines (diesel particulate matter or DPM) as toxic air contaminants (TACs). CARB developed the *Risk*

2 CEQA Air Quality Handbook, A Guide to Accessing the Air Quality Impacts of Project Subject to CEQA Review, San Luis Obispo County Air Pollution Control District, April 2003.

3 San Luis County General Plan, Land Use and Circulation Element, San Luis County Department of Planning and Building, 1995.

Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles and the *Risk Management Guidance for the Permitting of New Stationary Diesel-Fueled Engines*. The CARB approved these documents on September 28, 2000. The documents represent proposals to reduce diesel particulate emissions, with the goal to reduce emissions and the associated health risk by 75 percent in 2010 and by 85 percent in 2020. The program aims to require the use of state-of-the-art catalyzed diesel particulate filters and ultra low sulfur diesel fuel.

In December of 2000, the EPA promulgated regulations requiring that the sulfur content in motor vehicle diesel fuel be reduced to less than 15 ppm by June 1, 2006. Control of DPM emissions focuses on two strategies, reducing the amount of sulfur in diesel fuel and developing filters for operating diesel engines to reduce the amount of particulate matter that is emitted. Secondly, the EPA finalized a comprehensive national emissions control program, the 2007 Highway Diesel (HD 2007) program, which regulates highway heavy-duty vehicles and diesel fuel as a single system. Under the HD 2007 program, the EPA established new emission standards that would significantly reduce PM and NO_X from highway heavy-duty vehicles.

In May of 2003, the EPA proposed new emission standards for nonroad diesel engines and sulfur reductions in nonroad diesel fuel that would dramatically reduce emissions attributed to nonroad diesel engines. However, since these emission standards have not yet been adopted, their benefits were not accounted for within this analysis in this EIR.

Current regulations apply emission standards to engines manufactured from 1987 through 2003 for heavy-duty diesel truck and bus engines. Applicable to the 1994 and following year standards, sulfur content in the certification fuel has been reduced to 500 ppm. In October of 1997, EPA adopted new emission standards for 2004 and later heavy-duty diesel truck and bus engines. These standards reflect the provisions of the Statement of Principles signed in 1995 by the EPA, CARB, and the manufacturers of heavy-duty diesel engines. The goal is to reduce NO_X emissions from highway heavy-duty engines to levels approximately 2.0 grams per brake horsepower-hour (g/bhp·hr) beginning in 2004.[4]

5.6 Water Quality

Clean Water Act (CWA)

The CWA was enacted in Congress in 1972 and amended several times since inception. It is the primary federal law regulating water quality in the U.S. and forms the basis for several state and local laws throughout the country. Its objective is to reduce or eliminate water pollution in the nation's rivers, streams, lakes, and coastal waters. The CWA prescribes the basic federal laws for regulating discharges of pollutants and sets minimum water quality standards for all surface waters in the U.S. At the federal level, the CWA is administered by the U.S. Environmental Protection Agency (EPA). At the state and regional levels, the CWA is administered and enforced

[4] Further information on current regulations which apply to heavy-duty trucks and onsite nonroad equipment, can be found at www.dieselnet.com/.

by the State Water Resources Control Board (SWRCB) and the Regional Water Quality Control Boards (RWQCBs).

Porter-Cologne Water Quality Control Act

The Porter-Cologne Water Quality Control Act is the primary statute covering the quality of waters in California. The act sets out specific water quality provisions and discharge requirements regulating the discharge of waste within any region that could affect the quality of state waters. It established and is administered by the SWRCB and the nine RWQCBs. The Central Coast RWQCB is the relevant board reviewing actions at the Airport that may affect receiving waters.

NPDES Permit Requirements

In 1987, amendments to the CWA enacted section 402(p), which established a framework for regulating nonpoint source storm water discharges under the National Pollutant Discharge Elimination System (NPDES). The Phase I NPDES stormwater program regulates stormwater discharges from major industrial facilities, large and medium-sized municipal separate storm sewer systems (those serving more than 100,000 persons), and construction sites that disturb five or more aces of land. Pursuant to the Phase II NPDES Final Rule in December 1999, discharges of stormwater associated with construction activities that result in the disturbance of equal to or greater than one acre of land must also apply for coverage under the statewide NPDES General Construction Activities Permit. Under the program, the Airport is required to comply with two NPDES permit requirements.

The NPDES General Construction Activities Permit requirements apply to clearing, grading, and disturbances to the ground such as excavation. The applicant is required to submit a Notice of Intent (NOI) with the SWRCB's Division of Water Quality. The NOI includes general information on the types of construction activities that will occur on the site. The applicant also will be required to prepare a site-specific Storm Water Pollution Prevention Plan (SWPPP) for General Construction Activities. The SWPPP must include a description of Best Management Practices (BMPs) for preventing the discharge of silt and sediment into receiving waters. The SWPPP also will include BMPs for preventing the discharge of other nonpoint source pollutants besides sediment (e.g., drilling lubricant, oil, concrete, cement) to downstream waters, as well as a detailed description of (and schedule for) all monitoring. It is the responsibility of the property owner to obtain coverage under the permit prior to site construction.

The NPDES General Industrial Activities Permit requirements apply to the discharge of stormwater associated with industrial sites. The permit requires the implementation of management measures that will achieve the performance standard of best available technology (BAT) economically achievable and best conventional pollutant control technology (BCT). Under the statute, operators of facilities must implement industrial BMPs in the project SWPPP and perform monitoring of stormwater discharges and unauthorized non-stormwater discharges. The permit also requires operators of facilities to make of updates to the long-term SWPPP to include new Airport facilities. The current SWPPP for the Airport, last updated July 1, 2005, will need to be updated to reflect new facilities changes in the Airport's layout. Existing water quality BMPs currently being implemented at the Airport are described below.

Section 401 Water Quality Certification

Section 401 of the CWA requires that any activity subject to a permit issued by a federal agency, such as the U.S. Army Corps of Engineers (ACOE), meet all State water quality standards. In California, the SWRCB (through the RWQCBs) is responsible for issuing water quality certifications under Section 401 of the CWA.

Section 404 Permit

The U.S. Army Corps of Engineers issues permits for any activity that will result in the discharge of dredged or fill material into waters of the U.S. (see Section 5.9, Biotic Communities, for a complete discussion of the Section 404 permit process).

Central Coast Basin Plan

Beneficial Uses of Surface Water and Groundwater

The Central Coast RWQCB is required to develop, adopt, and implement a Water Quality Control Plan (Basin Plan) for the Central Coast region. The Basin Plan is the master policy document that contains descriptions of the legal, technical, and programmatic bases of water quality regulation in the Central Coast region. The Basin Plan identifies beneficial uses of surface waters and groundwater within its region, and specifies water quality objectives to maintain the continued beneficial uses of these waters. For the East Fork of San Luis Obispo Creek, the assigned beneficial uses of surface waters are:

- Municipal and Domestic Supply
- Agricultural Supply
- Groundwater Recharge
- Water Contact Recreation
- Non-Contact Water Recreation
- Wildlife Habitat
- Cold Fresh Water Habitat
- Migration of Aquatic Organisms
- Spawning, Reproduction, and/or Early Development
- Rare, Threatened, or Endangered Species
- Commercial and Sport Fishing

Beneficial uses of groundwater throughout the Central Coastal Basin, including groundwater found in the San Luis Obispo Groundwater Basin are as follows:

- Agricultural Water Supply
- Municipal and Domestic Water Supply
- Industrial Use

Water Quality Objectives

Water quality objectives specified in the Basin Plan aim to preserve the beneficial uses of surface water and groundwater. Airport operations are required to adhere to all water quality objectives identified in the Basin Plan. These standards are used when considering permits or requirements

for discharges to the East Fork of San Luis Obispo Creek. Specific water quality objectives for surface waters in the East Fork of San Luis Obispo Creek have not been designated. However, under the tributary rule, those standards for San Luis Obispo Creek also apply to the East Fork. Water Quality Objectives contained in the Basin Plan for San Luis Obispo Creek are presented in Table O-3.

For groundwater, the RWQCB has set general standards for tastes and odors, radioactivity, bacteria, and certain chemicals. Specific groundwater quality standards for the San Luis Obispo Valley Basin are presented in Table O-4.

TABLE O-3
RWQCB STANDARDS FOR SAN LUIS OBISPO CREEK SURFACE

Constituent	Concentration (mg/L)
Total Dissolved Solids (TDS)	650
Chlorine (CL)	100
Sulfide (SO4)	100
Boron (B)	0.2
Sodium (NA)	50

SOURCE: California Regional Water Quality Control Board, 1994

TABLE O-4
RWQCB STANDARDS FOR SAN LUIS OBISPO VALLEY GROUNDWATER BASIN

Constituent	Concentration (mg/L)
Total Dissolved Solids (TDS)	900
Chlorine (CL)	200
Sulfide (SO4)	100
Boron (B)	0.2
Sodium (NA)	50

SOURCE: SOURCE: California Regional Water Quality Control Board, 1994

5.7 Department of Transportation Act Section 4(f)

Section 4(f) of the Department of Transportation (DOT) Act, which was recodified and renumbered as section 303 (c) of 49 U.S.C., states that the Secretary of Transportation will not approve any program or program that requires the use of any publicly owned land or park,

recreation area, or wildlife and waterfowl refuge of nation, state, or local significance, unless there is no feasible and prudent alternative to the use of such land and such program, and the project includes all possible planning to minimize harm resulting from the use.

5.8 Historic, Architectural, Archaeological, and Cultural Resources

The National Historic Preservation Act (NHPA) of 1966, as amended, establishes the Advisory Council on Historic Preservation (ACHP) and the National Register of Historic Places (NRHP) within the National Park Service (NPS). Section 106 of the NHPA requires federal agencies to consider the effects of their undertakings on properties on or eligible for inclusion in the NRHP. Compliance with Section 106 requires consultation with the ACHP, the State Historic Preservation Officer (SHPO), and /or the Tribal Historic Preservation Officer (THPO) if there is a potential adverse effect to historic properties on or eligible for listing on the NRHP. Consultation on preservation-related activities also may occur with other Federal, State, and local agencies, Tribes, Native Hawaiian organizations, the private sector, and the public. Other applicable statues include:

- The Archeological and Historic Preservation Act of 1984,
- The Archaeological Resources Protection Act,
- The Native American Graves Protection and Repatriation Act (NAGPRA),
- The Antiquities Act of 1986,
- The Historic Sites Act of 1935,
- The American Indian Religious Freedom Act of 1978,
- The Public Building Cooperative Use Act of 1976,
- Executive Order 13006, Locating Federal Facilities on Historic Properties in Our Nations Central Cities, and
- Executive Order 13007, Indian Sacred Sites.

5.9 Biotic Communities

This section summarizes applicable regulations, policies, and ordinances that provide protection for biotic communities and common wildlife.

Federal Regulations

The Fish and Wildlife Coordination Act (16 U.S.C., Sec. 661-667e), requires that the FAA consult with the California Department of Fish and Game (CDFG), the U.S. Fish and Wildlife Service (USFWS), and the National Marine Fisheries Service (NMFS) if a proposed project would affect water resources including, wetlands, rivers, and streams. Consultation must be initiated with the agencies and letters must be obtained from each agency regarding the potential for project impacts on fish and wildlife and determining appropriate measures to be taken to minimize those impacts prior to project approval or permit issuance.

The federal Migratory Bird Treaty Act (16 U.S.C., Sec. 703, Supp. I 1989) prohibits the killing, possession, or trade in migratory birds except in accordance with regulations prescribed by the Secretary of the Interior. This act encompasses whole birds, parts of birds, and bird nests and eggs. In addition, Executive Order 13186 for the Conservation of Migratory Birds requires that any federal project addresses the impacts of federal actions on migratory birds.

State Regulations

Raptors (birds of prey) are protected in California under the State Fish and Game Code. Section 3503.5 states that it is "unlawful to take, possess, or destroy any birds in the order Falconiformes or Strigiformes (hawks, falcons, and owls) or to take, possess, or destroy the nest or eggs of any such bird except as otherwise provided by this code or any regulation adopted pursuant thereto." Construction disturbance during the breeding season could result in the incidental loss of fertile eggs or nestlings, or otherwise lead to nest abandonment. Disturbance that causes nest abandonment and/or loss of reproductive effort is considered "taking" by the CDFG. Any loss of fertile eggs, nesting raptors, or any activities resulting in nest abandonment would constitute a significant impact. Section 3503.5 applies to red-tailed hawks and other birds of prey, whether or not they are also listed as State or federal species of concern. Project impacts to these species would not be considered "significant" in this document unless they are known or have a high potential to nest on the site or rely on it for primary foraging.

Certain biotic communities are considered to be sensitive natural communities, either by the California Department of Fish and Game or by local entities. These are generally communities that are locally or regionally uncommon and/or support a high diversity of plants and animals. Substantial adverse impacts to sensitive natural communities would be considered a significant impact under CEQA.

Local Plans and Ordinances

In areas within urban reserve lines the San Luis Obispo County Code (Title 22, Article 5, Chapter 22.56) requires a tree removal permit under most circumstances for the removal of any tree measuring over eight inches in diameter at four feet above grade.

5.10 Endangered and Threatened Species of Flora and Fauna

This section summarizes applicable regulations, policies, and ordinances that provide protection for special status species.

Federal Regulations

Federal Endangered Species Act

Under the Federal Endangered Species Act (FESA), the Secretary of the Interior and the Secretary of Commerce have joint authority to list a species as threatened or endangered (16 USC 1533[c]). Pursuant to the requirements of FESA, an agency reviewing a proposed project within its jurisdiction must determine whether any federal-listed threatened or endangered species may

be present in the project area and whether the proposed project will have a potentially significant impact on such species. In addition, the agency is required to determine whether the project is likely to jeopardize the continued existence of any species proposed to be listed under FESA or result in the destruction or adverse modification of critical habitat proposed to be designated for such species (16 USC 1536[3], [4]).

The U.S. Fish and Wildlife Service (USFWS) also publishes a list of candidate species. Species on this list receive special attention from federal agencies during environmental review, although they are not protected under the FESA. The candidate species are taxa for which the USFWS has sufficient biological information to support a proposal to list as endangered or threatened.

Migratory Bird Treaty Act / Bald Eagle Protection Act

The federal Migratory Bird Treaty Act (16 U.S.C., Sec. 703, Supp. I 1989) prohibits killing, possessing, or trading in migratory birds except in accordance with regulations prescribed by the Secretary of the Interior. This act encompasses whole birds, parts of birds, and bird nests and eggs. In addition, Executive Order 13186 for the Conservation of Migratory Birds requires that any federal project addresses the impacts of federal actions on migratory birds.

The federal Bald Eagle Protection Act prohibits persons within the United States (or places subject to U.S. jurisdiction) from "possessing, selling, purchasing, offering to sell, transporting, exporting or importing any bald eagle or any golden eagle, alive or dead, or any part, nest, or egg thereof."

State Regulations

California Endangered Species Act

Under the California Endangered Species Act (CESA), the California Department of Fish and Game (CDFG) has the responsibility for maintaining a list of state threatened and endangered species (Cal. Fish and Game Code 2070). The CDFG also maintains a list of "candidate species", which are species that the CDFG has formally noticed as being under review for addition to either the list of endangered species or the list of threatened species. The CDFG also maintains lists of "species of special concern" which serve as "watch lists." Pursuant to the requirements of CESA, an agency reviewing a proposed project within its jurisdiction must determine whether any State-listed endangered or threatened species may be present in the project area and determine whether the proposed project will have a potentially significant impact on such species. In addition, the Department encourages informal consultation on any proposed project which may impact a candidate species.

California State Fish and Game Code

Raptors (birds of prey) are protected in California under the State Fish and Game Code. Section 3503.5 states that it is "unlawful to take, possess, or destroy any birds in the order Falconiformes or Strigiformes (hawks, falcons, and owls) or to take, possess, or destroy the nest or eggs of any such bird except as otherwise provided by this code or any regulation adopted pursuant thereto." Construction disturbance during the breeding season could result in the incidental loss of fertile eggs or nestlings, or otherwise lead to nest abandonment. Disturbance

that causes nest abandonment and/or loss of reproductive effort is considered "taking" by the CDFG. Any loss of fertile eggs, nesting raptors, or any activities resulting in nest abandonment would constitute a significant impact. Section 3503.5 applies to red-tailed hawks and other birds of prey, whether or not they are also listed as State or federal species of concern. Project impacts to these species would not be considered "significant" in this document unless they are known or have a high potential to nest on the site or rely on it for primary foraging.

CEQA Guidelines Section 15380

Although threatened and endangered species are protected by specific federal and State statutes, CEQA Guidelines section 15380(b) provides that a species not listed on the federal or State list of protected species may be considered rare or endangered if the species can be shown to meet certain specified criteria. These criteria have been modeled after the definition in FESA and the section of the California Fish and Game Code dealing with rare or endangered plants or animals. This section was included in the Guidelines primarily to deal with situations in which a public agency is reviewing a project that may have a significant effect on, for example, a "candidate species" that has not yet been listed by either the USFWS or CDFG. Thus, CEQA provides an agency with the ability to protect a species from a project's potential impacts until the respective government agencies have an opportunity to designate the species as protected, if warranted.

Vascular plants listed as rare or endangered by the California Native Plant Society (CNPS) (Skinner and Pavlik, 1995), but which have no designated status or protection under federal or State endangered species legislation, are defined as follows:

List 1A Plants Believed Extinct.
List 1B Plants Rare, Threatened, or Endangered in California and elsewhere.
List 2 Plants Rare, Threatened, or Endangered in California, but more numerous elsewhere.
List 3 Plants About Which We Need More Information - A Review List.
List 4 Plants of Limited Distribution - A Watch List.

5.11 Wetlands

Federal Regulation of Wetlands and other Water-associated Habitats

Wetlands have been defined by the U.S. Army Corps of Engineers (Corps) and the U.S. Environmental Protection Agency (EPA), pursuant to Section 404 of the Clean Water Act (CWA). Wetlands are also defined in Executive Order 11990: Protection of Wetlands. The following presents the federal definition of waters of the United States, including wetlands.

Federal Definition

Wetlands are a subset of waters of the United States and receive protection under Section 404 of the CWA. The term "waters of the United States" as defined in the Code of Federal Regulations (33 CFR 328.3[a]; 40 CFR 230.3[s]) includes:

1. All waters which are currently used, were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide.

2. All interstate waters including interstate wetlands. (Wetlands are defined by the federal government [CFR, Section 328.3(b), 1991] as those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions.)

3. All other waters such as intrastate lakes, rivers, streams (including intermittent streams), mud flats, sand flats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, the use, degradation, or destruction of which could affect interstate or foreign commerce including any such waters:

    - which are or could be used by interstate or foreign travelers for recreational or other purposes; or
    - from which fish or shellfish are or could be taken and sold in interstate or foreign commerce; or
    - which are used or could be used for industrial purposes by industries in interstate commerce.

4. All impoundments of waters otherwise defined as waters of the United States under the definition.

5. Tributaries of waters identified in numbers 1 through 4.

6. Territorial seas.

7. Wetlands adjacent to waters (other than waters that are themselves wetlands) identified in numbers 1 through 6.

Waters of the United States do not include prior converted cropland. Notwithstanding the determination of an area's status as prior converted cropland by any other federal agency, for the purposes of the CWA, the final authority regarding CWA jurisdiction remains with EPA (328.3[a][8] added 58 FR 45035, Aug. 25, 1993).

Regulation of Activities in Waters of the United States

The regulations and policies of various federal agencies (e.g., the Corps, EPA, U.S. Fish and Wildlife Service [USFWS], and National Marine Fisheries Service [NMFS]) mandate that the filling of wetlands be avoided unless it can be demonstrated that no practicable alternatives exist. The Corps has primary federal responsibility for administering regulations that concern waters and wetlands. In this regard, the Corps acts under two statutory authorities, the Rivers and Harbors Act, Sections 9 and 10 (see discussion below), which governs specified activities in navigable waters, and the CWA (Section 404), which governs specified activities in waters of the United States, including wetlands. The Corps requires that a permit be obtained if a project proposes placing structures within and/or alteration of waters of the United States below the ordinary high water mark in nontidal waters. EPA, USFWS, NMFS, and several other agencies

provide comment on Corps permit applications. EPA has provided the primary criteria for evaluating the biological impacts of Corps permit actions in wetlands (Section 404[b][1] guidelines).

Executive Order 11990 also requires each federal agency to take actions to minimize the destruction, loss or degradation of wetlands in carrying out its responsibilities.

Navigable Waters of the United States

The Corps regulates activities in navigable waters of the United States, subject to the ebb and flow of the tide (up to mean high water) and/or has historically been used, is currently used, or may be used in the future for interstate or foreign commerce (Section 10 of the Rivers and Harbors Act). Corps permit authority under the Rivers and Harbors Act is not subject to EPA oversight or any other restrictions specific to the CWA. Although the Corps requires that a permit be obtained if a project proposes placing structures within navigable waters, they generally do not require mitigation unless the areas under Section 10 jurisdiction overlap with wetlands or other waters of the United States. Areas that may be subject to jurisdiction under Section 10 of the Rivers and Harbors Act include drainage ditches and the shoreline fringe.

State Regulation of Wetlands and other Water-associated Habitats

The State's authority to regulate activities in wetlands and waters at the site resides primarily with the California Department of Fish and Game (CDFG) and the Regional Water Quality Control Board (RWQCB). Discussion of each agency's jurisdiction and relation to SBP are presented below.

The CDFG derives its authority to oversee work in wetlands from several pieces of legislation, including Sections 1600-1616 of the Fish and Game Code (stream and lakebed alteration agreements, described below), the Fish and Wildlife Coordination Act, the California Endangered Species Act (protection of state-listed species and their habitats, which may include wetlands), and the 1976 Keene-Nejedly California Wetlands Preservation Act (which states a need for an affirmative and sustained public policy and program directed at wetlands preservation, restoration, and enhancement).

In general, CDFG asserts authority over wetlands within the state either through review and comment on Corps Section 404 permits, review and comment on California Environmental Quality Act (CEQA) documents, preservation of state-listed species, or through stream and lakebed alteration agreements.

Sections 1600-1616 of the Fish and Game Code

Under Sections 1600-1616 of the California Fish and Game Code, CDFG regulates activities that would alter the flow, bed, channel, or bank of streams and lakes. The limits of CDFG jurisdiction are defined in the code as the "...bed, channel or bank of any river, stream, or lake designated by the department in which there is at any time an existing fish or wildlife resource or from which these resources derive benefit...".

This broad definition gives CDFG great flexibility in deciding what constitutes a river, stream, or lake. The CDFG defines streams under the jurisdiction of Sections 1600-1616 as follows:

1. The term stream can include intermittent and ephemeral streams, rivers, creeks, dry washes, sloughs, blue-line streams (United Stated Geological Survey maps [USGS]), and watercourses with subsurface flows. Canals, aqueducts, irrigation ditches, and other means of water conveyance can also be considered streams if they support aquatic life, riparian vegetation, or stream-dependent terrestrial wildlife.

2. Biological components of any stream may include aquatic and riparian vegetation, all aquatic animals including fish, amphibians, reptiles, invertebrates, and terrestrial species which derive benefits from the stream system.

3. As a physical system, a stream not only includes water (at least on an intermittent or ephemeral basis), but also a bed or channel, a bank and/or levee, instream features such as logs or snag, and various flood plains depending on the return frequency of flood event being considered.

4. The lateral extent of a stream can be measured in several ways depending on a particular situation and the type of fish or wildlife resource at risk. The following criteria are presented in order from the most inclusive to the least inclusive.

    - The flood plain of a stream can be the broadest measurement of a stream's lateral extent depending on the return frequency of the flood event used. For most flood control purposes, the 100-year event is the standard measurement. However, because it may include significant amounts of upland or urban habitat, in many cases the 100-year floodplain may not be appropriate.
    - The outer edge of riparian vegetation is generally used as the line of demarcation between riparian and upland habitats and is therefore a reasonable and identifiable boundary for the lateral extent of a stream. In most cases, the use of this criterion should result in protecting the fish and wildlife resources at risk.
    - Most streams have a natural bank which confines flows to the bed or channel except during flooding. In some instances, particularly on smaller streams or dry washes with little or no riparian habitat, the bank should be used to mark the lateral extent of a stream.
    - A levee or other artificial stream bank could also be used to mark the lateral extent of a stream. However, in many instances, there can be extensive areas of valuable riparian habitat located behind a levee.

In practice, CDFG usually marks its jurisdictional limit at the top of the stream or bank or at the outer edge of the riparian vegetation, whichever is wider. Riparian habitats flooded for long durations at a frequency greater than 50 out of 100 years would come under Corps Section 404 jurisdiction as wetlands. Since riparian habitats do not always support wetland hydrology or hydric soils, federal Section 404 wetland boundaries sometimes include only portions of the riparian habitat adjacent to a river, stream, or lake.

The California Wetlands Conservation Policy

The California Wetlands Conservation Policy (1993 - Senate Concurrent Resolution No. 28), created an interagency task force headed by the state Resources Agency and Cal-EPA to (1) ensure no overall net loss and a long-term net gain in the quantity, quality, and permanence of wetlands acreage and values, (2) reduce procedural complexity in the administration of state and federal wetlands conservation programs, and (3) encourage partnerships that make restoration, landowner incentives, and cooperative planning the primary focus of wetlands conservation.

This resolution directed the CDFG to prepare and submit to the legislature a plan identifying means to protect existing wetlands and restore former wetlands, including identification of sufficient potential wetlands sites to increase the amount of wetlands in California by 50 percent by the year 2000 and a program for public and private acquisition of such lands. While the resolution does not have the force and effect of law, the CDFG and other state agencies frequently point to it as an expression of state policy.

Central Coast Regional Water Quality Control Board

The State Regional Water Control Board (SRWCB), acting through the nine Regional Water Quality Control Boards (RWACBs), has authority over wetlands through the CWA, Porter-Cologne Act, California Code of Regulations Section 3831(k)[5], and the California Wetlands Conservation Policy (see discussion above under CDFG).

The CWA requires an applicant for a Section 404 permit to discharge dredged or fill material into waters of the United States to first obtain a certificate from the appropriate state agency that the fill is consistent with the state's water quality standards and criteria. In California, the authority to either grant certification or waive the requirement for permits is delegated by the SRWCB to the nine RWQCBs. A request for certification or waiver is submitted to the RWQCB at the same time that an application is filed with the Corps. The RWQCB has 60 days to review the application and act. Because no Corps permit is valid under the CWA unless "certified" by the state, these boards may effectively veto or add conditions to any Corps permit.

Pursuant to the Porter-Cologne Act, each of California's nine RWQCBs must prepare and periodically update basin plans that set forth water quality standards for surface water and groundwater, as well as actions to control non-point and point sources of pollution to achieve and maintain these standards. Basin plans offer an opportunity to achieve wetlands protection through enforcement of water quality standards.

The Central Coast RWQCB wetland policy states that there should be no net loss of wetland acreage or value. For significant impacts, the RWQCB generally requires mitigation (in-kind and preferably on-site). Mitigation measures may include a map, specific description of acreage that would be affected; the amount, location, and type of wetland restoration and/or creation proposed; a detailed planting plan; and long-term monitoring and maintenance plans. A water quality certification will be required from the RWQCB for the Proposed Action. The approval

[5] Defines "Water Quality Certification" as a certification that there is a reasonable assurance that an activity which may result in a discharge to navigable waters of the United States will not violate water quality standards, where the activity requires a federal license or permit.

will include requirement that impacts to wetlands be mitigated on-site or off-site at a specified ratio.

5.12 Floodplains

Executive Order 11988: Floodplain Management

Executive Order 11988 was enacted in 1977 for the purpose of preventing federal agencies from contributing to the "adverse impacts associated with the occupancy and modification of floodplains" and the "direct or indirect support of floodplain development." Executive Order 11988 defines floodplains as "the lowland and relatively flat areas adjoining inland and coastal waters including flood prone areas of offshore islands, including at a minimum, the areas subject to a one percent or greater chance of flooding in any given year" i.e., the area that would be inundated by a 100-year flood. Executive Order 11988 requires that federal agencies "take action to reduce the risk of flood loss, to minimize the impact of floods to human safety, health and welfare, and to restore and preserve the natural and beneficial values served by floodplains."

Waterway Management Plan for San Luis Obispo Creek Watershed

The *Waterway Management Plan* was prepared by the City of San Luis Obispo Department of Public Works and San Luis Obispo County Flood Control District – Zone 9 for the purpose of developing a comprehensive, watershed-based management plan for San Luis Obispo Creek and its tributaries. The *Waterway Management Plan* forms the basis for future project planning, decision making, and permitting within the San Luis Obispo Creek watershed. In its entirety, the *Waterway Management Plan* is comprised of three separate volumes. Volume I focuses on inventory information, detailed hydrologic/hydraulic analysis of the watershed and its main tributaries, and an identification of the management problems and management needs of the waterways. Volume II focuses on stream management and maintenance, such as vegetation management, bank repair, and sediment removal. Volume III is a Drainage Design Manual that contains procedures for hydrologic and hydraulic analysis, and specific guidelines and design criteria for channel design, drainage infrastructure, detention facilities, bank repair and stream restoration, and erosion control. All proposed development at the Airport must comply with the conditions of the *Waterway Management Plan*.

5.13 Coastal Zone Management Program

Detailed procedures for determining Federal consistency with approved coastal zone management programs are contained in the NOAA Regulations (15 C.F.R. Part 930). The sections most relevant to airport actions are subpart D, Consistency for Activities Requiring a Federal License or Permit, and subpart F, Consistency for Federal Assistance to State and Local Governments. The CZMA is a federal program that is implemented locally. San Luis Obispo County implements the CZMP through its Local Coastal Program (LCP).

5.14 Coastal Barriers

The Coastal Barrier Resources Act of 1982 (CBRA), as amended by the Coastal Barrier Improvement Act of 1990 (16 U.S.C. 3501-3510; PL 97348) prohibits, with some exceptions, Federal financial assistance for development within the Coastal Barrier Resources System that contains undeveloped coastal resources along the Atlantic and Gulf coasts and the Great Lakes.

5.15 Wild and Scenic Rivers

The Wild and Scenic Rivers Act of 1968, as amended, and its implementing regulations at 36 CFR Part 297 describes those river segments designated or eligible to be included in the Wild and Scenic Rivers System. Federal agencies must consult with NPS when proposals may affect a river segment included in the Nationwide Rivers Inventory.

The State of California also has adopted the California Wild and Scenic Rivers Act (Public Resources Code Section 5093.50 et seq.) in 1972 to preserve designated rivers possessing extraordinary scenic, recreation fishery, or wildlife values. The policy seeks to preserve such rivers in their free-flowing condition.

5.16 Farmlands

The Farmland Protection Policy act (FPPA) regulates Federal actions with the potential to convert farmland to non-agricultural uses. Consultation with the U.S. Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) should occur to determine whether the FPPA applies to the land the proposed action would convert to non-agricultural use of whether an exemption to the FPPA exists. If a proposed action will convert farmland to non-agriculture use, it must be determined whether the land is protected by the FPPA. To be protected, it must be either “prime farmland” which is not committed to urban development or water storage, or unique farmland, or farmland which is of state or local importance.

5.17 Energy Supply and Natural Resources

Transportation-related energy is generally regulated at the federal level. For example, federal legislation and regulations seek to reduce energy consumed by on-road motor vehicles through implementation of Corporate Average Fuel Economy (CAFE) standards that specify minimum fuel consumption efficiency standards for manufacturers of new automobiles sold in the United States. With respect to aviation, there have been no specific energy-related policies or regulations since the Federal Aviation Administration (FAA) canceled its *Aviation Energy Policy* (Order 1053.2) in February 1995. However, FAA Order 1050.1E (2004) notes that Executive Order (EO) 13123, *Greening the Government through Efficient Energy Management,* encourages each federal agency to expand the use of renewable energy within its facilities. EO 13123 also requires each federal agency to reduce petroleum use, total energy use, and associated air emissions, and water consumption at its facilities.

Building energy consumption is generally regulated at the state level. In California, building energy consumption is regulated under the State of California's Building Energy Efficiency Standards which are set forth in Part 6 of Title 24 of the *California Code of Regulations* (CCR). Title 24 of the CCR is known as the *Building Standards Administrative Code*. The efficiency standards apply to new construction of both residential and non-residential buildings, and regulate energy consumed for heating, cooling, ventilation, water heating, and lighting. The building energy efficiency standards are enforced through the local building permit process.

5.18 Light Emissions

The Federal Aviation Administration (FAA) Order 5050.4A (*Airport Environmental Handbook*) and FAA Order 1050.1E (*Environmental Impacts: Policies and Procedures*) require project sponsors to identify the light emissions (e.g., strobe lights, high-intensity airfield or facility lighting) associated with a proposed project that could create an annoyance for people in the vicinity of an installation as a potential impact of airport development. Proposed changes associated with lighting emissions also must be considered based upon their potential to affect properties addressed by Section 404 of the DOT Act (Section 49f) properties (refer to Section 5.7 of this document for a discussion of Section4(f) resources). FAA Order 1051.E also requires FAA to consider whether visual or aesthetic impacts would result from a proposed action.

The California Environmental Quality Act (CEQA) requires project sponsors to evaluate a project's potential to cause aesthetic impacts by affecting scenic resources, vistas, and visual character, or by creating a new source of light or glare.

San Luis Obispo County does not have specific regulatory requirements related to view protection at the Airport, and has not promulgated regulations for the roads approaching the Airport.

5.19 Hazardous Materials and Solid Waste

Hazardous Materials

As described in FAA Order 1050.1E Appendix A, Section 10, four primary laws have been passed governing the handling and disposal of hazardous materials, chemicals, substances, and wastes. The two statues of most importance here are the Resource Conservation and Recovery Act (RCRA) and the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). RCRA governs the generation, treatment, storage, and disposal of hazardous wastes. CERCLA provides for consultation with natural resources trustees and cleanup of any release of a hazardous substance (excluding petroleum) into the environment. In addition, EO 12088 directs Federal agencies to: comply with applicable pollution control standards.

These regulations are implemented through various health and safety programs and other procedures which are the principal means of ensuring the health and safety of airport workers, the public, and the environment. The primary health and safety plans and policies in place at the Airport include an Injury and Illness Prevention Plan, a Hazard Communication Plan, Hazardous Materials Management Plans, a Storm Water Pollution Prevention Plan, and an Emergency

Response Plan. These plans are on file in Airport Operations, California Department of Forestry (CDF)/San Luis Obispo County Fire Department, and the City Office of Emergency Services.

Regulatory compliance is one measure of program performance, and active regulatory oversight is an important mechanism for maintaining a healthy and safe environment. Inspections by the CDF Fire Department, the San Luis Obispo County Health Department, and the California Division of Occupational Safety and Health are summarized below.

- The CDF Fire Department conducts numerous inspections of Airport facilities. These inspections usually focus on fire safety, hazardous materials storage, or both. Inspections are sufficiently rigorous to note, more often than not, violations at both Airport and tenant facilities. The Fire Department revisits facilities to ensure that problems are corrected. Fire Department inspections ensure that Airport facilities are operated in compliance with fire codes and hazardous materials and waste management requirements.
- The San Luis Obispo County Health Department occasionally inspects hazardous waste generators.
- California Division of Occupational Safety and Health inspections focus on safety or health.

Hazardous Materials Air Transport

Certain hazardous materials, termed "dangerous goods" by the airline industry, are transported by air, primarily by all-cargo carriers. SBP does not routinely receive aircraft carrying dangerous goods. If such an event were to occur, the Airport would be notified by an airline, as required by law, that a hazardous materials shipment is scheduled to occur. On those occasions, in coordination with the FCT Airport Traffic Control Tower, the aircraft would be parked in a remote area, with trucks or other surface vehicles escorted directly to and from the aircraft. Such flights are usually conducted by an all-cargo or cargo charter airline.

The transportation of hazardous materials by air, including packaging, labeling, and reporting, is regulated under Section 172.101 of the Hazardous Materials Transportation Act in the Code of Federal Regulations (CFR) Title 49. The regulation specifies restrictions on the type of hazardous materials that may be carried on aircraft and requires notification of airports where a transfer of the materials is planned. In addition to complying with federal regulations, air carriers operating at the Airport also comply with the guidelines of the International Air Transport Association (IATA), which are consistent with CFR Title 49 and are based on the Chicago Convention on International Civil Aviation. IATA has developed and issued detailed transport guidelines for association members worldwide that categorically prohibit air transport of certain hazardous materials that are considered too dangerous to be transported by air and that provide detailed instructions for transporting those materials that are allowed on aircraft. Restrictions on the type of hazardous materials that may be carried on aircraft vary somewhat between passenger and cargo flights. Prohibited goods include most explosives, any substance that could evolve heat or gas under conditions of normal transport, inhalation poisons, many flammable materials, and a long list of other chemicals. The IATA guidelines are recognized worldwide and are reviewed and updated annually.

Individual air cargo carriers also have health and safety guidelines that cover handling of hazardous materials, employee health and safety, and specific in-flight storage for each make and model of aircraft.

In addition, the San Luis Obispo County Health Department has established a hazardous materials/waste program to protect the public and the environment from the release of hazardous wastes by regulating industries that generate hazardous waste. These objectives are accomplished through inspection, surveillance, incident investigation, and assistance to industry, enforcement, and public education.

Solid Waste

After 10 years of implementing its waste management program, San Luis Obispo County has complied with California's Integrated Waste Management Act of 1989 (Stat 1989, c. 1095) that requires the reduction or diversion of 50 percent of the solid waste stream (Whittlesey, 2004). As of January 1, 2005, the County of San Luis Obispo requires that construction and demolition projects of at least $50,000 in value or $1,000 square feet in size recycle 50 percent of the project's waste stream.

5.20 Construction

Noise levels, traffic, air emissions, water quality degradation and soil erosion, habitat loss and other impacts to biological resources, and exposure of workers to hazardous materials are all regulated at the federal, state, and local levels.

5.21 Geology and Seismicity

The following state and local regulations apply to the Proposed Action and are designed for the protection of health and safety from geologic and seismic hazards:

Government Code Section 65302 requires a safety element within a general plan for the protection of the community from geologic hazards, and must include features designed to minimize risks associated with these hazards. In addition, the general plan must include a seismic safety element that identifies and assesses seismic hazards and recommends policies to reduce adverse impacts associated with seismic events. San Luis Obispo County first adopted its seismic safety element in 1971 and its safety element in 1975.

The California Building Code (CBC) has been codified in the California Code of Regulations (CCR) as Title 24, Part 2, which is a portion of the California Building Standards Code. Title 24 is assigned to the California Building Standards Commission, which, by law, is responsible for coordinating all building standards. Under state law, all building standards must be centralized in Title 24 or they are not enforceable. The purpose of the CBC is to provide minimum standards to safeguard life or limb, health, property and public welfare by regulating and controlling the design, construction, quality of materials, use and occupancy, location, and maintenance of all building and structures within its jurisdiction. Published by the International Conference of Building Officials, the Uniform Building Code is a widely adopted model building code in the

United States. The CBC is based on the 1997 Uniform Building Code (UBC) with necessary California amendments. These amendments include significant building design criteria that have been tailored for California earthquake conditions.

The project area is located within Zone 4, one of the four seismic zones designated in the United States. Zone 4 is expected to experience the greatest effects from earthquake ground shaking and, therefore, has the most stringent requirements for seismic design. The national model code standards adopted into Title 24 apply to all structures for human occupancy in California except for modifications adopted by state agencies and local governing bodies.

Chapter 8 of the County's Framework For Planning (Inland Area) establishes objectives for areas within the Geologic Study Area combining designation. Proposed projects in such areas are subject to site specific soil and geologic evaluations by a registered civil engineer or engineering geologist as to the suitability of the site for development in accordance with the Land Use Ordinance.

5.22 Cumulative Impacts

Although similar, NEPA and CEQA definitions of "cumulative impact" differ slightly. The NEPA definition of a cumulative impact comes from the Council on Environmental Quality (CEQ), which defines cumulative impact as:

> …the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time (40 CFR 1508.7).

The CEQA definition of cumulative impact comes from Section 15355 of the CEQA *Guidelines*:

> Cumulative impacts refer to two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts.
>
> (a) The individual effects may be changes resulting from a single project or a number of separate projects.
>
> (b) The cumulative impact from several projects is the change in the environment which results from the incremental impact of the project when added to other closely related past, present, and reasonably foreseeable future projects. Cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time.

APPENDIX P

Minority and Low-income Population Data

Residential development is not permitted on Airport property, but residential development is present within each of the block groups included in the environmental justice analysis. According to the 2000 Census, the total population within the block groups nearest the Airport totaled 10,486 (U.S. Census Bureau, 2000).

Minority Population Data

Demographic data pertaining to race and ethnicity were evaluated at the census block group and county levels to quantify and compare the minority population in the immediate Airport vicinity to the minority population for the County as a whole. Table P-1 contains data relating to the racial and ethnic demographics of the population in the Airport vicinity.

As shown in Table P-1, the racial diversity in the Airport vicinity appears to be less than the diversity for San Luis Obispo County as a whole for all groups. Census Tract 111.03, Block Group 1 appears to be the only portion of the Airport vicinity in which the portion of the population composed of minorities (20.1%) exceeds the portion of the population composed of minorities for the County as a whole (15.5). This block group also contains a greater Latino/Hispanic population (18.8%) compared to San Luis Obispo County as a whole (15.6%). However, the Census data for all five block groups within the Airport vicinity indicates that minorities comprise approximately 11.7% of the total population within the Airport vicinity, compared to 15.5% of the County as a whole. In addition, the Latino or Hispanic population in the study area is 10.2%, compared to 15.7 percent of the County as a whole. Therefore, for the purposes of an environmental justice evaluation, this Census Tract 113.01, Block Group 1 meets the criteria for a minority area.

TABLE P-1
DEMOGRAPHIC DATA IN FOR THE POPULATION IN THE AIRPORT VICINITY
(2000 CENSUS DATA)

Area	Total Popula-tion	White Non-Hispanic (%)	Hispanic or Latino any race (%)	Black (%)	American Indian or Alaskan Native (%)	Asian (%)	Native Hawaiian or Pacific Islander (%)	Other (%)
San Luis Obispo County	**255,822**	**84.5**	**15.7**	**2.3**	**1.9**	**3.4**	**0.3**	**6.2**
Census Tract 111.03, Block Group 1	2,582	79.9	18.8	1.9	2.0	3.9	<0.1	11.6
Census Tract 115.01, Block Group 1	1,782	87.0	12.8	1.0	2.0	2.6	<0.1	6.7
Census Tract 115.02, Block Group 1	3,745	90.2	7.7	1.4	1.0	3.6	<0.1	3.2
Census Tract 116, Block Group 2	756	93.1	7.6	<0.1	0.7	2.2	0	3.7
Census Tract 116, Block Group 4	1,621	96.2	3.0	0	0.7	2.6	0	0.3
Total for Airport Vicinity	**10,486**	**88.3**	**10.2**	**1.1**	**1.4**	**3.3**	**0.2**	**5.5**

SOURCE: U.S. Census Bureau, 2000 (www.factfinder.census.gov), Summary File 1 (SF 1), 100% data.

Low-Income Population Data

Table P-2 provides the median household income and the percentage of people living below the poverty level within the five block groups that comprise the project vicinity. Median income is based on the distribution of the total number of households and families, including those with no income.

U.S. Census Bureau data on poverty status is derived in part from the Census 2000 long form, which provides information on the amount of income people received from various sources. The total number of people below the poverty level is the sum of the number of people in poor families and the number of unrelated individuals with incomes below the poverty threshold. When calculating the percentage of people below the poverty level, the U.S. Census Bureau does not include individuals residing in institutional group quarters. The poverty threshold is not adjusted for regional, state, or local variation in the cost of living. The 1999 U.S. Census poverty threshold (weighted average) for one person was $8,501; for a two-person family unit was $10,869; and for a three-person family unit it was $13,290.

TABLE P-2
DEMOGRAPHIC DATA IN FOR THE POPULATION IN THE AIRPORT VICINITY
(2000 CENSUS DATA)

Area	Total Population	Median Household Income (1999)	% of Individuals Below Poverty Level (1999)
San Luis Obispo County	**231,960**	**$42,428**	**12.8%**
Census Tract 111.03, Block Group 1	2,459	$28,191	20.2%
Census Tract 115.01, Block Group 1	1,688	$ 37,560	17.7%
Census Tract 115.02, Block Group 1	3,609	$62,347	5.3%
Census Tract 116, Block Group 2	774	$79,329	9.3%
Census Tract 116, Block Group 4	1,589	$87,489	2.2%
Total for Project Area	**10,119**	**NA**	**10.7%**

Notes: The data for total population differs between Table 5.3-2-1 and 5.3-2-2 because different census data sets were used. SF 3 is based on a long form completed by a portion of the population and upon which data is calculated, whereas the population data used in Table 5.3-2-1 is based on Census 2000 Summary File 1 (SF 1) – 100 Percent Data.

SOURCE: U.S. Census Bureau, 2000 (www.factfinder.gov), Census 2000 Summary File 3 (SF 3) – Sample Data.

As shown in Table P-2, the Census data indicate that the percentage of the persons living below poverty level in two of the five census tracts included in the project area (Census Tract 11.03, Block Group 1 and Census Tract 115.01, Block Group 1) exceed the percentage of persons living below the poverty line as identified for the County as a whole. The remaining three block groups

included a higher median household income and a smaller portion of persons living below the poverty level than those reported for the County as a whole.

Environmental Justice Populations

As shown on Tables P-1 and P-2, Census Tract 111.03, Block Group 1 contains both a minority population (20.1% minority) and portion of individuals living below the poverty level (20.2%) that are greater than those identified for the County as a whole. Census Tract 115.01, Block Group 1 also contains a greater percentage of persons living the poverty level (17.7%) compared that is greater than those identified for the County as a whole. Based on this data, the populations of Census Tract 111.03, Block Group 1 and Census Tract 115.01, Block Group 1 are considered environmental justice populations.

APPENDIX Q

Screening Health Risk Assessment

The health effects of incremental changes in toxic air contaminant (TAC also known as hazardous air pollutants or HAPs) emissions and exposure to people that spend time near the Airport can be assessed through the use of dispersion modeling and development of a human health risk assessment (HHRA). A HHRA uses information on the amounts of substances people may be exposed to and the toxicity of those substances to evaluate the potential for adverse health effects. Both chronic (long-term) and acute (short-term) health effects were evaluated.

Under CEQA, the results of a HHRA are used to compare the potential changes in health impacts between the Baseline (2004) and future-year (2010 and 2023) conditions. For this reason, it is termed an "incremental" HHRA.

Because the emissions of airport-related HAPs are directly linked to the emissions of other regulated pollutants (i.e., hydrocarbons (HC) and particulate matter (PM), this analysis is based on dispersion modeling of those pollutants. In addition, the HHRA was conducted in accordance with technical guidelines developed by the U.S. and California Environmental Protection Agencies and the San Luis Obispo Air Pollution Control District (U.S. EPA, CalEPA, and SLOAPCD) is in support of this specialized topic.[1,2 3] This HHRA was conducted based on information contained in Appendix F.

Terms and Definitions

The following terms and definitions are used in this section to describe various concepts and elements of the HHRA:

Acute effect – a health effect produced within a short period of time (few minutes to several days) following an exposure.

Cancer risk – the probability of an individual contracting cancer from lifetime exposure to HAPs in the ambient air.[4]

Cancer risk estimates – the probability of developing cancer from exposure to a substance or mixture of compounds over a specified period of time.

Chronic effect – a health effect produced from a continuous exposure occurring over an extended period of time (weeks, months, years).

Criteria air pollutants – a series of common air pollutants regulated by the Federal or California Clean Air Acts (i.e., CO, NO_2, ozone, particulate matter, etc.).

Hazard Index (HI) – the unitless ratio of an exposure level over the acceptable reference dose (RfC). If an HI is less than 1, no adverse health effect would occur.

---

[1] *Air Toxics Hot Spots Program Risk Assessment Guidelines*, Parts I-IV and Appendices, California Environmental Protection Agency, Office of Environmental Health Hazard Assessment, 1997 - 2003.

[2] *Air Toxics Risk Assessment Reference Library, Technical Resource Manual*, U.S. Environmental Protection Agency, 2004.

[3] *CEQA Air Quality Handbook: A Guide for Assessing the Air Quality Impacts for Projects Subject to CEQA Review*, San Luis Obispo Air Pollution Control District, April 2003..

[4] An individual lifetime cancer risk of 100 in 1 million indicates that an individual continuously exposed to the specified concentration if HAPs over the course of a 70-year lifetime would have a 100 in 1 million increase in risk of contracting cancer. According to the American Cancer Society, Americans are subject to a cancer risk of 250,000 in 1 million.

Hazardous Air Pollutants (HAPs) – any air pollutant that can cause health effects in humans that is not regulated as a "criteria" pollutant

Human Health Risk Assessment (HHRA) – an analysis designed to predict and evaluate the dispersion of HAPs in the outdoor environment and to determine the concentration of HAPs. An HHRA assesses and quantifies both the individual and population-wide health risks associated with those levels of exposure.

Incremental – under CEQA, the net difference (or change) in conditions or impacts when comparing the baseline to future year conditions.

Maximum exposed individual – an individual is assumed to be located at the point of highest concentrations of HAPs, and risk at this location is reported as the MEI.

Non-cancer risks – health risks other than cancer, such as eye irritation, respiratory or heart ailments, and other non-cancer related diseases.

Pathway – the means by which humans come into contact with HAPs (e.g., inhalation, ingestion or absorption).

Receptors – the locations where potential impacts or risks are predicted (schools, residences and work-sites).

Reference concentration (RfC) – an estimate of the amount of contaminate that the body is exposed to that is not likely to cause adverse heath effects.

Reference exposure level (REL) – an air concentration, that, when inhaled would not cause adverse health effects.

Speciation profiles – the numerical fraction of HAPs as part of total hydrocarbons or particulate matter.

Notably, many other terms apply to this and other HHRAs but they are used less frequently or have some other special or unique applications that are not used in this case. Therefore, they are not defined here for purposes of brevity.

Limitations and Uncertainties

There are also a number of important limitations and uncertainties commonly associated with a HHRA due to the wide variability of human exposures to HAPs and extended timeframes over which they occur. These factors are no more pronounced then when conducting a HHRA for airports – facilities that are generally not subject to such an analysis and for which "real world" information is just beginning to emerge. Among these elements of this analysis are the following:

- Neither airports, aircraft nor GSE meet the definitions of the source types that are regulated under Section 112 (*Hazardous Air Pollutants*) of the Federal CAA or the California Air Toxics Hot Spots Information and Assessment Act,[5] [6]

[5] *Clean Air Act*, as amended (42 U.S.C. 7401 et seq.) Section 112, Hazardous Air Pollutants, http://www.epa.gov/oar/caa/caa112.txt

[6] Air Toxics Hot Spots Information and Assessment Act of 1987, California Environmental Protection Agency, Office of Environmental Health Hazard Assessment, http://www.arb.ca.gov/ab2588/general.htm

- The current guidance and methodologies for modeling HAPs are principally designed to assess stationary (i.e., "point") sources of air emissions. By comparison, an airport is primarily made up of an assemblage of moving line and area sources.
- HAPs speciation profiles for aircraft engines are currently very limited and based upon a few aircraft types that are not commonly associated with commercial aviation.
- The HHRA exposure estimates do not take into account that people do not usually reside at the same location for 70 years and that other exposures (i.e., school children and workers) are of much shorter durations than is assumed.
- Other limitations and uncertainties associated with HHRA and identified by the CalEPA include: lack of reliable data, extrapolation of toxicity data in animals to humans, estimation errors in HAPs emissions, errors with dispersion models, errors in exposure estimates, and the range of variability in the human population.[7]

According to CalEPA guidelines, the results of a HHRA should not be interpreted as the expected rates of cancer or other potential human health effects, but rather as estimates of potential risk based on current knowledge, a number of assumptions, and the best assessment tools presently available.[8]

Significance Criteria

CARB has developed CEQA guidelines that address air quality, including impacts associated with HAPs. According to these guidelines, a project may have potentially significant impacts if it could:

- Expose sensitive receptors (i.e., schools, hospitals, day-care facilities, etc.) to substantial pollutant concentrations, including HAPs such as diesel particulates.

Because the term "substantial pollutant concentrations" is not well defined, the following significance criteria for evaluating human health risks developed by the *OEHHA* are also used.[9]

- Increase in cancer risk of 10 in 1 million; and
- A Hazard Index (HI) greater than one (1) for acute or chronic non-cancer risks.

Importantly, these criteria are based upon the incremental changes in health risks that are determined by comparing the Baseline to future year (2010 and 2023) conditions with the planned Airport improvements.

Human Health Risk Assessment

The HHRA was conducted in general accordance with guidelines established by the U.S. and California Environmental Protection Agencies (U.S. EPA and CalEPA).[10,11,] Following these guidelines, the assessment consisted of four following primary components:

- **Hazard Identification** – This step involves the identification of HAPs associated with the Airport that pose the greatest potential risk to public health on, and in the vicinity of, the Airport. The outcome is comprised of a listing of the HAPs of Primary Concern and

[7] CalEPA OEHHA Air Toxics Hot Spots HRA Guidelines, Ibid.
[8] Ibid.
[9] *2006 CEQA Guidelines*, Consulting Engineers and Land Surveyors of California, 2006.
[10] *Air Toxics Hot Spots Program Risk Assessment Guidelines*, Parts I-IV and Appendices, California Environmental Protection Agency, 1997 - 2003.
[11] *Air Toxics Risk Assessment Reference Library, Technical Resource Manual*, U.S. Environmental Protection Agency, 2004.

is based in large part upon the results of HHRAs recently conducted for other airports in California.[12] Another important source of information that was consulted during this step is the FAA Resource Document on Airport HAPs.[13] Based on the information contained in these resources, the HAPs selected for this analysis comprise the following:

- 1,3-Butadiene – most commonly formed during the combustion of fossil fuels and found in tobacco smoke and a known human carcinogen by inhalation.
- Acetaldehyde – a byproduct of combustion, including tobacco smoke. Acute exposure may result in eye and respiratory tract irritation. Chronic exposure may result in skin irritations.
- Acrolein - formed during the combustion of fossil fuels, wood, tobacco, and from the heating of cooking oils. A possible non-cancer health hazard usually limited to eye irritation.
- Benzene - a human carcinogen formed during the combustion of fossil fuels, contained in motor vehicle exhaust and an evaporative component of gasoline. Acute exposures result in irritation of the respiratory tract and chronic exposures can result in blood disorders.
- Diesel Particulate Matter – regulated as a human carcinogen in California and formed from the combustion of diesel fuels in motor vehicles, construction and farm equipment and other off-road machinery.
- Formaldehyde – similar to acrolein (discussed above) and considered to be the most prevalent species of HAPs in aircraft engine exhaust.

These six HAPs have the combined characteristics of being those that are most predominantly associated with airports and represent the greatest potential risk to human health. The premise to this approach is that other HAPs that were not analyzed represent much lower levels of potential risk, by comparison.

- **Exposure Assessment** – This step involves an assessment of the potential pathways humans might be exposed to airport-related HAPs on or near the Airport. This analysis relies on the analysis of HHRAs previously conducted for other airports in California. Based on these results, inhalation (i.e., breathing) is determined to be the principal pathway for human exposure to airport-related HAPs in the vicinity of SLO. Other potential exposures through dermal (i.e., skin) contact and absorption or ingestion (i.e., eating and drinking) of food or water are not considered to be significant pathways. This interpretation is also consistent with recent efforts by federal and state agencies to assess the potential effects of HAPs in the areas of large metropolitan airports.[14]

[12] The HHRAs relied upon for this information include the following: 1.) Ambient Air Quality Human Health Risk Assessment prepared for the Port of Oakland, Oakland California, contained in the *Draft Oakland International Airport – Airport Development Program Supplemental Environmental Impact Report*, September 2003; 2.) Human Health Risk Assessment for the *Los Angeles International Airport Proposed Master Plan Improvements, Supplemental Environmental Impact Report*, prepared for the City of Los Angeles, 2003.

[13] FAA, *Select Resource Materials and Annotated Bibliography on the Topic of Hazardous Air Pollutants (HAPs) Associated with Aircraft, Airports and Aviation,* prepared for the Office of Environment and Energy, July 1, 2003.

- **Toxicity Assessment** – This step addresses the potential toxicity of the analyzed HAPs based upon the highest predicted receptor concentrations within the study area. The EDMS and ISCST3 dispersion programs were used to predict HC and PM concentrations, then these results were converted to individual HAPs using appropriate speciation profiles.[15] Five years of meteorological data was used.

- **Risk Characterization** – This final step involves the evaluation of the potential magnitude of the estimated health risks to the receptors from airport-related HAPs. In accordance with OEHHA guidelines, this was accomplished by applying the highest estimated concentrations of HAPs at the receptors analyzed to established cancer risk toxicities (for cancer risks) and reference concentrations (for non-cancer health effects). These toxicity factors are contained in the OEHHA Hot-Spots Health Risk Analysis Module.[16]

In order to compare the outcome of the HHRA to the appropriate significance criteria, the results are expressed as the incremental risk (or chance) that a cancer incident would occur if one was exposed to the predicted levels. For non-cancer health effects, the Hazard Index is used to assess the relative chronic and acute health effects.

A brief description of each pollutant's characteristics, potential for human exposure, and U.S. EPA's classifications with respect to the pollutant's carcinogenic properties[17] is provided below.

1,3-butadiene[18]

1,3-butadiene is a colorless gas. At room temperature, the gas has a gasoline-like odor. This pollutant is a byproduct of petroleum processing and is used in the production of synthetic rubber and plastics. It is also found in automobile exhaust, gasoline vapor, fossil fuel incineration products, and cigarette smoke. The majority of 1,3-butadiene is released into the air and humans are typically exposed to the pollutant via inhalation. Breathing very high levels of 1,3-butadiene for a short time may cause central nervous system damage, blurred vision, nausea, fatigue, headache, decreased blood pressure and pulse rate, and unconsciousness. Breathing lower levels of this pollutant may cause irritation of the eyes, nose, and throat. The U.S. EPA has classified 1,3-butadiene as a "known" human carcinogen.

---

[14] These studies include the following: (1.) Rhode Island Department of Environmental Management Air Monitoring Program Near T.F. Green Airport, Providence, R.I. (2.) Massachusetts Department of Health Assessment of Health Impacts from Airport-Related Emissions in the vicinity of Boston-Logan International Airport. (3.) Assessment of HAPs in the Vicinity of Los Angeles International Airport by the U.S. EPA, FAA, CARB, South Coast Air Quality Management District and Los Angeles World Airports (in planning).

[15] The HC/PM-to-HAPs speciation profiles used in the analysis for aircraft are based on the CARB-recommended data developed for the Oakland International Airport Supplemental EIR HHRA and for GSE, motor vehicles and stationary sources are those listed in the CARB Organic Gas Speciation Database.

[16] CalEPA HARP User Guide, Hotspots Analysis and Reporting Program, Air Resources Board, December 2003.

[17] The USEPA uses the classification "known" with respect to carcinogens when there is sufficient evidence from epidemiologic studies to support a causal association between exposure to the agents and cancer. The classification "probable" is used when the weight of evidence of human carcinogenicity based on epidemiologic studies is limited or when the weight of evidence of carcinogenicity based on animal studies is "sufficient". HAPs are classified as "possible" carcinogens when there is limited evidence of carcinogenicity in animals in the absence of human data. Finally, the U.S. EPA uses the classification "not classifiable" when there is inadequate human and animal evidence of carcinogenicity or for which no data are available. (http://cfpub.epa.gov/ncea/cfm/recordisplay.cfm?deid=55445)

[18] Summary based on the Agency for Toxic Substance and Disease Registry *ToxFAQ for 1,3-butadiene*, http://www.atsdr.cdc.gov/tfacts28.html, September 1995.

Acetaldehyde[19]

Acetaldehyde is a colorless, volatile liquid with a characteristic pungent, fruity odor. Acetaldehyde is used primarily as a chemical intermediate in the production of acetic acid, as well as a synthetic flavoring agent. Acetaldehyde is released to the environment in vehicle exhaust and as a product of open burning of gas, fuel oil, and coal. Acute exposure to acetaldehyde can cause eye, nose, and throat irritation and subsequent inflammation of the eyes and coughing. This pollutant can also cause central nervous system depression, delayed pulmonary edema, and moderate unconsciousness. Chronic dermal exposure can lead to skin burns and dermatitis. Carcinogenicity studies in rats have shown that acetaldehyde causes respiratory tract tumors. The U.S. EPA has classified acetaldehyde as a "probable" human carcinogen.

Acrolein[20]

Acrolein is a clear or yellow liquid with a disagreeable odor. Acrolein is used as an intermediate in the production of acrylic acid, as well as a pesticide to control algae, weeds, bacteria, and mollusks. Small amounts of acrolein can be formed and emitted into the air when trees, tobacco, other plants, gasoline, and oil are burned. Acrolein may also be released in to the environment in emissions and effluents from its manufacturing and use facilities and in emissions from combustion processes. Exposure to high concentrations of acrolein may damage the lungs and could cause death. Breathing lower amounts may cause eye watering and burning of the nose and throat and a decreased breathing rate. The U.S. EPA has classified acrolein as "not classifiable" as to human carcinogenicity.

Benzene[21]

Benzene is a volatile, colorless, flammable liquid that has a sweet odor. It is a chemical intermediate in the synthesis of compounds such as plastics, resins, nylon, synthetic fibers, synthetic rubbers, lubricants, dyes, detergents, drugs, and pesticides. Major sources of atmospheric releases include vehicle exhaust emissions, evaporative gasoline fumes, emissions from vehicle service stations, and industrial emissions. Other sources of atmospheric benzene include cigarette smoke and landfill emissions. Acute inhalation exposure to benzene can result in death, while high levels can cause drowsiness, dizziness, rapid heart rate, headaches, tremors, confusion, and unconsciousness. Eating or drinking foods containing high levels of benzene can cause vomiting, irritation of the stomach, dizziness, sleepiness, convulsions, rapid heart rate, and death. The U.S. EPA has classified benzene as a "known" human carcinogen.

---

[19] Summary based on the Hazardous Substances Database – Acetaldehyde, http://toxnet.nlm.nih.gov, August 2003.
[20] Summary based on the Agency for Toxic Substance and Disease Registry *ToxFAQ for Acrolein*, http://www.atsdr.cdc.gov/tfacts124.html, July 1999.
[21] Summary based on the Agency for Toxic Substance and Disease Registry *ToxFAQ for Benzene*, http://www.atsdr.cdc.gov/tfacts3.html, September 1997.

Diesel Particulate Matter[22]

Diesel exhaust is a complex mixture of thousands of individual gaseous and particulate compounds emitted from diesel-fueled combustion engines. Diesel particulate matter is formed primarily through the incomplete combustion of diesel fuel. Particulate matter in diesel exhaust can be emitted from on- and off-road vehicles, stationary area sources, and stationary point sources. Diesel exhaust particulate matter is removed from the atmosphere through physical processes including atmospheric fall-out and washout by rain. Humans can be exposed to airborne diesel particulate matter or via deposited diesel particulates on water, soil, and vegetation. Acute inhalation exposure to diesel particulates has shown increased symptoms of irritation, cough, phlegm, chronic bronchitis, and inhibited pulmonary function. The U.S EPA has concluded that diesel particulate matter is likely to be carcinogenic to humans by inhalation.

In August 1998, the California Air Resource Board (CARB) identified DPM (particulate material emitted from diesel-fueled engines) as a TACs. The CARB developed *Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles* and *Risk Management Guidance for the Permitting of New Stationary Diesel-Fueled Engines* and approved these documents on September 28, 2000. The documents represent proposals to reduce diesel particulate emissions, with the goal of reducing emissions and the associated health risk by 75 percent in 2010 and by 85 percent in 2020. The program aims to require the use of state-of-the-art catalyzed diesel particulate filters and ultra-low-sulfur diesel fuel.

Formaldehyde[23]

At room temperature, formaldehyde is a colorless, flammable gas that has a distinct, pungent smell. Formaldehyde is a product of incomplete combustion and is emitted into the air by burning wood, coal, kerosene, and natural gas, by automobiles, and by cigarettes; it is also a naturally occurring substance. Formaldehyde can be released to soil, water, and air by industrial sources and can off-gas[24] from materials made with it. Humans can be exposed to formaldehyde through inhalation of contaminated air and smog. Low levels of formaldehyde can cause irritation of the eyes, nose, throat, and skin. Some epidemiological studies found an increased incidence of nose and throat cancer in exposed individuals, whereas other studies could not confirm this finding. The U.S. EPA has classified formaldehyde as a "probable" human carcinogen.

Emission Estimates and Speciation Factors

To identify a quantity of an individual HAP, speciation factors are used. These factors estimate the fraction of HC and/or PM that consists of an individual HAP. HAP emissions were quantified for several source categories including aircraft, auxiliary power units (APU), ground support equipment (GSE), ground service vehicles, and on-road motor vehicles. HAP emissions from

---

[22] Summary based on the California Air Resources Board and Office of Environmental Health Hazard Assessment. *Proposed Identification of Diesel Exhaust as a Toxic Air Contaminant,* approved by the Scientific Review Panel in April 1998 and USEPA, *Health Assessment Document for Diesel Engine Exhaust,* EPA/600/8-90/057F, May 2002.

[23] Summary based on the Agency for Toxic Substance and Disease Registry *ToxFAQ for Formaldehyde*, http://www.atsdr.cdc.gov/tfacts111.html, July 1999.

[24] The emission of chemicals from building materials, furniture, textiles and bedding

other sources such as stationary sources of emergency generators, boilers, and storage tanks were not expected to change significantly from the Project and were not included.

Limited testing has been performed to identify and quantify HAP emissions levels associated with airport sources in general and aircraft engines in particular. Although the HAP speciation profiles are based on the best data, information, and techniques currently available, the factors are subject to a high degree of imprecision and uncertainty. Aircraft speciation factors are separated in operating modes: taxiing, approach, climbout, and takeoff. Turbine aircraft speciation factors were developed based on the *Port of Oakland, Report on Dispersion Analyses of Hazardous Air Pollutants for the Oakland International Airport*, dated April 29, 2004). These factors present a composite speciation profile based on the data from USAF testing (Gerstle and Spicer). Speciation factors for piston aircraft were developed from the CARB *Speciation Profiles and Size Fractions* (profile #413), dated December, 2000. APU speciation factors utilized the aircraft speciation factors within the climbout mode.

With respect to GSE emissions, the analysis did not assume any reductions in emissions with replacement of conventionally-fueled vehicles with alternatively-fueled vehicles in the future. As such, the levels of GSE emissions can be considered conservatively high. Speciation factors for GSE were developed from the CARB *Speciation Profiles and Size Fractions* (profile #818 for diesel and #413 for gasoline), dated December, 2000. The total DPM emissions were based on the total emissions from diesel powered GSE. Generally, approximately 90 percent of the total PM emissions from GSE were attributed to diesel powered equipment based on the GSE fleet mix.

With respect to DPM, some tests consider this pollutant as a single pollutant while other tests consider the myriad of individual compounds that adhere to particles. A portion of the estimated benzene and other polycyclic aromatic hydrocarbons generated with the speciation profiles is based on calculations of these compounds as constituents of DPM.

Speciation factors for motor vehicles were developed from the CARB *Speciation Profiles and Size Fractions* (profile #882, 888, and 894 for 2004, 2010, and 2023, respectively for gasoline and #818 for diesel), dated December, 2000. The total DPM emissions were based on the total emissions from diesel powered motor vehicles as determined from EMFAC2002. Generally, approximately 25 to 35 percent of the total PM emissions from motor vehicles were attributed to diesel vehicles (depending on the year of analysis).

Based on the assigned speciation factors for the source categories; aircraft, GSE/APU, roadway motor vehicles, and parking lot motor vehicles, the fractions of HC and PM emissions were determined for the six HAP analyzed. These fractions were then applied to the HC and PM modeling impacts at specific receptors, along with the toxicity values to determine the incremental health impacts. The HAP emissions are displayed within the following information for the existing condition, the No Action, and the Proposed Project.

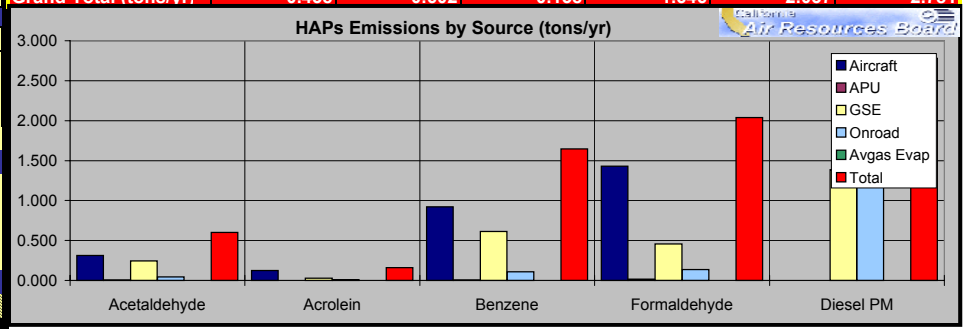
2004 Baseline Condition

Input Data

	Turbine Aircraft THC (kg)
Approach	1358
Climbout	189
Idle	10376
Takeoff	141
	Piston Aircraft VOC (kg)
Approach	4714
Climbout	2127
Idle	8175
Takeoff	131
Total	15147
	APU
THC (kg)	139
	GSE
THC (kg)	15036
VOC (kg)	14249
% Gas	88%
% Diesel	12%
PM (kg)	1433
	Onroad (tons/yr)
Gas, TOG	3.686
Diesel, TOG	0.485
Diesel, VOC	0.478
Diesel, PM	4.45
	Avgas
VOC (tons/yr)	

Output Data - HAPs Emissions (tons/yr)

Source	1,3-butadiene	Acetaldehyde	Acrolein	Benzene	Formaldehyde	Diesel PM	
Turbine Aircraft	0.167	0.204	0.100	0.209	1.256		
Piston Aircraft	0.136	0.106	0.025	0.712	0.174		
Total	0.304	0.311	0.124	0.921	1.430		
APU	0.0003	0.0030	0.0008	0.0021	0.0149		
Gas GSE	0.109	0.085	0.020	0.571	0.140		
Diesel GSE	0.004	0.159	0.007	0.043	0.318	1.387	87.8%
Total	0.113	0.244	0.026	0.614	0.457	1.387	
Gas Onroad	0.020	0.009	0.005	0.098	0.063		
Diesel Onroad	0.001	0.036	0.002	0.010	0.071	1.3940	34%
Total	0.021	0.045	0.007	0.108	0.135	1.3940	3%
Total Avgas Evap				0.000			
Grand Total (tons/yr)	**0.438**	**0.602**	**0.158**	**1.646**	**2.037**	**2.781**	



Speciation Profiles

Turbine Aircraft HAPs mass fraction (lb/lb THC)

Based on:	1,3-butadiene	Acetaldehyde	Acrolein	Benzene	Formaldehyde
Approach THC	7.12E-03	1.57E-02	4.88E-03	1.54E-02	1.12E-01
Climbout THC	2.22E-03	1.97E-02	5.13E-03	1.39E-02	9.73E-02
Tax/Idle THC	1.35E-02	1.53E-02	7.92E-03	1.59E-02	9.28E-02
Takeoff THC	1.03E-02	1.21E-02	4.85E-03	7.55E-03	4.05E-02
	1.65E-02	2.41E-02	9.68E-03	1.94E-02	1.37E-01

Piston Aircraft HAPs mass fraction (lb/lb TOG)

Based on:	1,3-butadiene	Acetaldehyde	Acrolein	Benzene	Formaldehyde
Complete LTO TOG	7.20E-03	5.60E-03	1.30E-03	3.76E-02	9.20E-03
	8.17E-03	6.35E-03	1.48E-03	4.27E-02	1.04E-02
	1.19E-02	1.42E-02	5.11E-03	3.24E-02	6.65E-02

Auxiliary Power Units mass fraction (lb/lb THC)

Based on:	1,3-butadiene	Acetaldehyde	Acrolein	Benzene	Formaldehyde
Climbout THC	2.22E-03	1.97E-02	5.13E-03	1.39E-02	9.73E-02

GSE Gasoline mass fraction (lb/lb TOG)

Based on:	1,3-butadiene	Acetaldehyde	Acrolein	Benzene	Formaldehyde
Total Gasoline TOG	7.20E-03	5.60E-03	1.30E-03	3.76E-02	9.20E-03

GSE Diesel mass fraction (lb/lb TOG or VOC)

Based on:	1,3-butadiene	Acetaldehyde	Acrolein	Benzene	Formaldehyde
Total Diesel TOG or VOC	1.90E-03	7.35E-02	3.50E-03	2.00E-02	1.47E-01
	6.80E-03	1.48E-02	1.65E-03	3.68E-02	2.83E-02

Onroad Gasoline mass fraction (lb/lb TOG)

Based on:	1,3-butadiene	Acetaldehyde	Acrolein	Benzene	Formaldehyde
Total Gas TOG	5.50E-03	2.50E-03	1.40E-03	2.67E-02	1.72E-02

Onroad Diesel mass fraction (lb/lb TOG or VOC)

Based on:	1,3-butadiene	Acetaldehyde	Acrolein	Benzene	Formaldehyde
Total Diesel TOG or VOC	1.90E-03	7.35E-02	3.50E-03	2.00E-02	1.47E-01
	5.08E-03	1.08E-02	1.64E-03	2.59E-02	3.23E-02

Avgas Evaporation mass fraction (lb/lb VOC)

Based on:	1,3-butadiene	Acetaldehyde	Acrolein	Benzene	Formaldehyde
Total VOC				9.00E-03	

Onroad	Gas	Diesel		
	99%	1%	VOC =	0.984 * TOG
			(for diesel onroad)	
			TOG =	1.043 * THC
			(for gas onroad)	
			TOG =	1.07 * THC
			(for diesel onroad)	

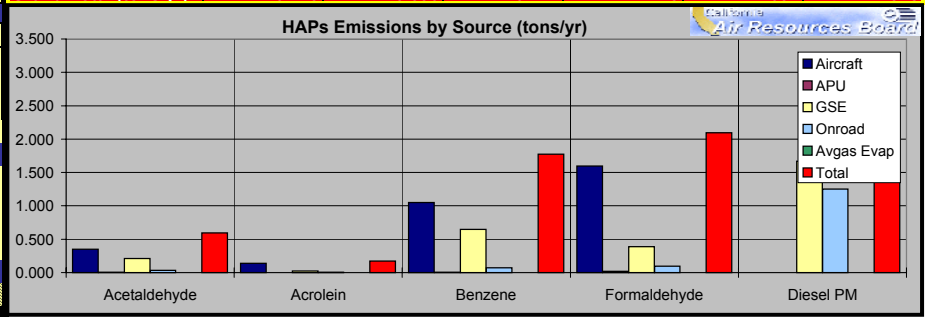
2010 No Action

Input Data

Turbine Aircraft THC (kg)	
Approach	1436
Climbout	205
Idle	11631
Takeoff	152
Piston Aircraft VOC (kg)	
Approach	5023
Climbout	2267
Idle	8709
Takeoff	1395
Total	17394
APU	
THC (kg)	160
GSE	
THC (kg)	15593
VOC (kg)	14714
% Gas	91%
% Diesel	9%
PM (kg)	1712
Onroad (tons/yr)	
Gas, TOG	2.478
Diesel, TOG	0.354
Diesel, VOC	0.348
Diesel, PM	5.70
Avgas	
VOC (tons/yr)	

Output Data - HAPs Emissions (tons/yr)

Source	1,3-butadiene	Acetaldehyde	Acrolein	Benzene	Formaldehyde	Diesel PM	
Turbine Aircraft	0.187	0.227	0.111	0.233	1.396		
Piston Aircraft	0.157	0.122	0.028	0.818	0.200		
Total	0.343	0.349	0.140	1.051	1.596		
APU	0.0004	0.0035	0.0009	0.0025	0.0172		
Gas GSE	0.118	0.092	0.021	0.614	0.150		
Diesel GSE	0.003	0.120	0.005	0.033	0.239	1.667	88.3%
Total	0.121	0.211	0.026	0.647	0.390	1.667	
Gas Onroad	0.014	0.006	0.003	0.066	0.043		
Diesel Onroad	0.001	0.026	0.001	0.007	0.052	1.2513	24%
Total	0.014	0.032	0.005	0.073	0.095	1.2513	1%
Total Avgas Evap				0.000			
Grand Total (tons/yr)	**0.479**	**0.596**	**0.171**	**1.773**	**2.097**	**2.918**	



Speciation Profiles

Turbine Aircraft HAPs mass fraction (lb/lb THC)

Based on:	1,3-butadiene	Acetaldehyde	Acrolein	Benzene	Formaldehyde
Approach THC	7.12E-03	1.57E-02	4.88E-03	1.54E-02	1.12E-01
Climbout THC	2.22E-03	1.97E-02	5.13E-03	1.39E-02	9.73E-02
Tax/Idle THC	1.35E-02	1.53E-02	7.92E-03	1.59E-02	9.28E-02
Takeoff THC	1.03E-02	1.21E-02	4.85E-03	7.55E-03	4.05E-02
	1.65E-02	2.41E-02	9.68E-03	1.94E-02	1.37E-01

Piston Aircraft HAPs mass fraction (lb/lb TOG)

Based on:	1,3-butadiene	Acetaldehyde	Acrolein	Benzene	Formaldehyde
Complete LTO TOG	7.20E-03	5.60E-03	1.30E-03	3.76E-02	9.20E-03
	8.17E-03	6.35E-03	1.48E-03	4.27E-02	1.04E-02
	1.18E-02	1.41E-02	5.05E-03	3.25E-02	6.55E-02

Auxiliary Power Units mass fraction (lb/lb THC)

Based on:	1,3-butadiene	Acetaldehyde	Acrolein	Benzene	Formaldehyde
Climbout THC	2.22E-03	1.97E-02	5.13E-03	1.39E-02	9.73E-02

GSE Gasoline mass fraction (lb/lb TOG)

Based on:	1,3-butadiene	Acetaldehyde	Acrolein	Benzene	Formaldehyde
Total Gasoline TOG	7.20E-03	5.60E-03	1.30E-03	3.76E-02	9.20E-03

GSE Diesel mass fraction (lb/lb TOG or VOC)

Based on:	1,3-butadiene	Acetaldehyde	Acrolein	Benzene	Formaldehyde
Total Diesel TOG or VOC	1.90E-03	7.35E-02	3.50E-03	2.00E-02	1.47E-01
	6.97E-03	1.24E-02	1.58E-03	3.74E-02	2.35E-02

Onroad Gasoline mass fraction (lb/lb TOG)

Based on:	1,3-butadiene	Acetaldehyde	Acrolein	Benzene	Formaldehyde
Total Gas TOG	5.50E-03	2.50E-03	1.40E-03	2.67E-02	1.72E-02

Onroad Diesel mass fraction (lb/lb TOG or VOC)

Based on:	1,3-butadiene	Acetaldehyde	Acrolein	Benzene	Formaldehyde
Total Diesel TOG or VOC	1.90E-03	7.35E-02	3.50E-03	2.00E-02	1.47E-01
	5.05E-03	1.14E-02	1.66E-03	2.59E-02	3.34E-02

Avgas Evaporation mass fraction (lb/lb VOC)

Based on:	1,3-butadiene	Acetaldehyde	Acrolein	Benzene	Formaldehyde
Total VOC				9.00E-03	

Onroad	Gas	Diesel		
	99%	1%	VOC =	0.984 * TOG (for diesel onroad)
			TOG =	1.043 * THC (for gas onroad)
			TOG =	1.07 * THC (for diesel onroad)

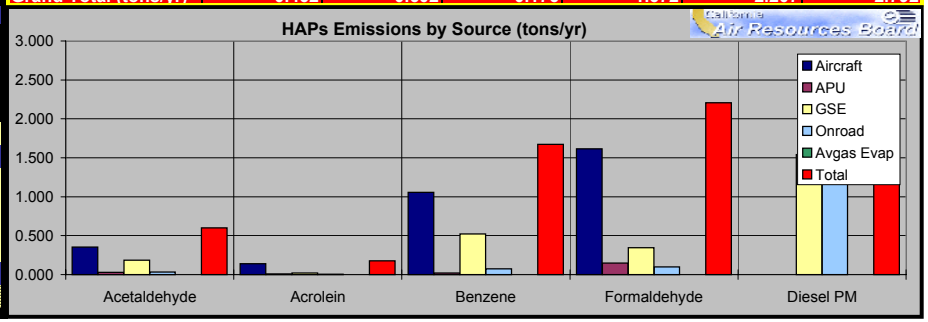
2010 Project

Input Data

Turbine Aircraft THC (kg)	
Approach	1365
Climbout	182
Idle	11942
Takeoff	136
Piston Aircraft VOC (kg)	
Approach	5023
Climbout	2267
Idle	8709
Takeoff	1395
Total	17394
APU	
THC (kg)	1395
GSE	
THC (kg)	12673
VOC (kg)	11979
% Gas	90%
% Diesel	10%
PM (kg)	1573
Onroad (tons/yr)	
Gas, TOG	2.478
Diesel, TOG	0.368
Diesel, VOC	0.362
Diesel, PM	5.70
Avgas	
VOC (tons/yr)	

Output Data - HAPs Emissions (tons/yr)

Source	1,3-butadiene	Acetaldehyde	Acrolein	Benzene	Formaldehyde	Diesel PM	
Turbine Aircraft	0.190	0.231	0.113	0.236	1.416		
Piston Aircraft	0.157	0.122	0.028	0.818	0.200		
Total	0.347	0.353	0.142	1.054	1.616		
APU	0.0034	0.0303	0.0079	0.0214	0.1496		
Gas GSE	0.094	0.073	0.017	0.492	0.120		
Diesel GSE	0.003	0.112	0.005	0.031	0.225	1.541	88.9%
Total	0.097	0.185	0.022	0.522	0.345	1.541	
Gas Onroad	0.014	0.006	0.003	0.066	0.043		
Diesel Onroad	0.001	0.027	0.001	0.007	0.054	1.2513	24%
Total	0.014	0.033	0.005	0.074	0.097	1.2513	1%
Total Avgas Evap				0.000			
Grand Total (tons/yr)	0.462	0.602	0.176	1.672	2.207	2.792	



Speciation Profiles

Turbine Aircraft HAPs mass fraction (lb/lb THC)

Based on:	1,3-butadiene	Acetaldehyde	Acrolein	Benzene	Formaldehyde
Approach THC	7.12E-03	1.57E-02	4.88E-03	1.54E-02	1.12E-01
Climbout THC	2.22E-03	1.97E-02	5.13E-03	1.39E-02	9.73E-02
Tax/Idle THC	1.35E-02	1.53E-02	7.92E-03	1.59E-02	9.28E-02
Takeoff THC	1.03E-02	1.21E-02	4.85E-03	7.55E-03	4.05E-02
	1.65E-02	2.41E-02	9.68E-03	1.94E-02	1.37E-01

Piston Aircraft HAPs mass fraction (lb/lb TOG)

Based on:	1,3-butadiene	Acetaldehyde	Acrolein	Benzene	Formaldehyde
Complete LTO TOG	7.20E-03	5.60E-03	1.30E-03	3.76E-02	9.20E-03
	8.17E-03	6.35E-03	1.48E-03	4.27E-02	1.04E-02
	1.18E-02	1.41E-02	5.08E-03	3.25E-02	6.60E-02

Auxiliary Power Units mass fraction (lb/lb THC)

Based on:	1,3-butadiene	Acetaldehyde	Acrolein	Benzene	Formaldehyde
Climbout THC	2.22E-03	1.97E-02	5.13E-03	1.39E-02	9.73E-02

GSE Gasoline mass fraction (lb/lb TOG)

Based on:	1,3-butadiene	Acetaldehyde	Acrolein	Benzene	Formaldehyde
Total Gasoline TOG	7.20E-03	5.60E-03	1.30E-03	3.76E-02	9.20E-03

GSE Diesel mass fraction (lb/lb TOG or VOC)

Based on:	1,3-butadiene	Acetaldehyde	Acrolein	Benzene	Formaldehyde
Total Diesel TOG or VOC	1.90E-03	7.35E-02	3.50E-03	2.00E-02	1.47E-01
	6.46E-03	1.39E-02	1.95E-03	3.49E-02	3.23E-02

Onroad Gasoline mass fraction (lb/lb TOG)

Based on:	1,3-butadiene	Acetaldehyde	Acrolein	Benzene	Formaldehyde
Total Gas TOG	5.50E-03	2.50E-03	1.40E-03	2.67E-02	1.72E-02

Onroad Diesel mass fraction (lb/lb TOG or VOC)

Based on:	1,3-butadiene	Acetaldehyde	Acrolein	Benzene	Formaldehyde
Total Diesel TOG or VOC	1.90E-03	7.35E-02	3.50E-03	2.00E-02	1.47E-01
	5.03E-03	1.17E-02	1.67E-03	2.58E-02	3.40E-02

Avgas Evaporation mass fraction (lb/lb VOC)

Based on:	1,3-butadiene	Acetaldehyde	Acrolein	Benzene	Formaldehyde
Total VOC				9.00E-03	

Onroad	Gas	Diesel		
	99%	1%	VOC =	0.984 * TOG
			(for diesel onroad)	
			TOG =	1.043 * THC
			(for gas onroad)	
			TOG =	1.07 * THC
			(for diesel onroad)	

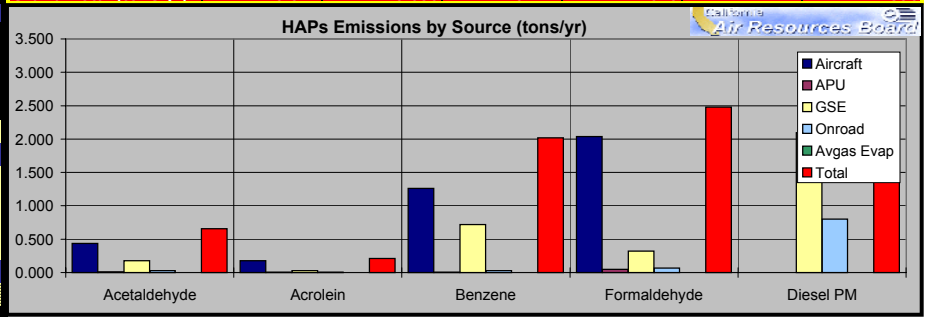
2023 Project

Input Data

	Turbine Aircraft THC (kg)
Approach	1576
Climbout	199
Idle	15467
Takeoff	155
	Piston Aircraft VOC (kg)
Approach	5896
Climbout	2661
Idle	10224
Takeoff	1639
Total	20420
	APU
THC (kg)	437
	GSE
THC (kg)	17051
VOC (kg)	16013
% Gas	95%
% Diesel	5%
PM (kg)	2142
	Onroad (tons/yr)
Gas, TOG	0.836
Diesel, TOG	0.368
Diesel, VOC	0.362
Diesel, PM	8.00
	Avgas
VOC (tons/yr)	

Output Data - HAPs Emissions (tons/yr)

Source	1,3-butadiene	Acetaldehyde	Acrolein	Benzene	Formaldehyde	Diesel PM	
Turbine Aircraft	0.245	0.295	0.145	0.302	1.805		
Piston Aircraft	0.184	0.143	0.033	0.960	0.235		
Total	0.429	0.438	0.179	1.263	2.040		
APU	0.0011	0.0095	0.0025	0.0067	0.0469		
Gas GSE	0.134	0.104	0.024	0.699	0.171		
Diesel GSE	0.002	0.075	0.003	0.021	0.151	2.094	88.7%
Total	0.136	0.180	0.027	0.720	0.322	2.094	
Gas Onroad	0.005	0.002	0.001	0.022	0.014		
Diesel Onroad	0.001	0.027	0.001	0.007	0.054	0.8024	11%
Total	0.005	0.029	0.002	0.030	0.068	0.8024	1%
Total Avgas Evap				0.000			
Grand Total (tons/yr)	**0.571**	**0.656**	**0.211**	**2.019**	**2.477**	**2.896**	



Speciation Profiles

Turbine Aircraft HAPs mass fraction (lb/lb THC)

Based on:	1,3-butadiene	Acetaldehyde	Acrolein	Benzene	Formaldehyde
Approach THC	7.12E-03	1.57E-02	4.88E-03	1.54E-02	1.12E-01
Climbout THC	2.22E-03	1.97E-02	5.13E-03	1.39E-02	9.73E-02
Tax/Idle THC	1.35E-02	1.53E-02	7.92E-03	1.59E-02	9.28E-02
Takeoff THC	1.03E-02	1.21E-02	4.85E-03	7.55E-03	4.05E-02
	1.65E-02	2.41E-02	9.68E-03	1.94E-02	1.37E-01

Piston Aircraft HAPs mass fraction (lb/lb TOG)

Based on:	1,3-butadiene	Acetaldehyde	Acrolein	Benzene	Formaldehyde
Complete LTO TOG	7.20E-03	5.60E-03	1.30E-03	3.76E-02	9.20E-03
	8.17E-03	6.35E-03	1.48E-03	4.27E-02	1.04E-02
	1.20E-02	1.45E-02	5.25E-03	3.20E-02	6.86E-02

Auxiliary Power Units mass fraction (lb/lb THC)

Based on:	1,3-butadiene	Acetaldehyde	Acrolein	Benzene	Formaldehyde
Climbout THC	2.22E-03	1.97E-02	5.13E-03	1.39E-02	9.73E-02

GSE Gasoline mass fraction (lb/lb TOG)

Based on:	1,3-butadiene	Acetaldehyde	Acrolein	Benzene	Formaldehyde
Total Gasoline TOG	7.20E-03	5.60E-03	1.30E-03	3.76E-02	9.20E-03

GSE Diesel mass fraction (lb/lb TOG or VOC)

Based on:	1,3-butadiene	Acetaldehyde	Acrolein	Benzene	Formaldehyde
Total Diesel TOG or VOC	1.90E-03	7.35E-02	3.50E-03	2.00E-02	1.47E-01
	7.10E-03	9.83E-03	1.56E-03	3.77E-02	1.93E-02

Onroad Gasoline mass fraction (lb/lb TOG)

Based on:	1,3-butadiene	Acetaldehyde	Acrolein	Benzene	Formaldehyde
Total Gas TOG	5.50E-03	2.50E-03	1.40E-03	2.67E-02	1.72E-02

Onroad Diesel mass fraction (lb/lb TOG or VOC)

Based on:	1,3-butadiene	Acetaldehyde	Acrolein	Benzene	Formaldehyde
Total Diesel TOG or VOC	1.90E-03	7.35E-02	3.50E-03	2.00E-02	1.47E-01
	4.40E-03	2.42E-02	2.04E-03	2.47E-02	5.69E-02

Avgas Evaporation mass fraction (lb/lb VOC)

Based on:	1,3-butadiene	Acetaldehyde	Acrolein	Benzene	Formaldehyde
Total VOC				9.00E-03	

Gas	Diesel		
99%	1%	VOC =	0.984 * TOG
		(for diesel onroad)	
		TOG =	1.043 * THC
		(for gas onroad)	
		TOG =	1.07 * THC
		(for diesel onroad)	

Toxicity Values

The source of the toxicity values used in this evaluation was the California Environmental Protection Agency (CalEPA).[25] The CalEPA, through its Office of Environmental Health Hazard Assessment (OEHHA) identifies "candidate chemicals" to be considered as carcinogens or as "developmental and reproductive toxicants" (non-carcinogens). The toxicity values (carcinogenic, chronic, and acute non-cancinogen) used in this HHRA are provided in Table Q-1. The assumed exposure pathway was inhalation. Notably, carcinogenic and non-carcinogenic emissions were evaluated separately (some HAPs produce both carcinogenic and non-carcinogenic health effects).

The toxicity values used in this evaluation are based on chronic (long-term) effects and acute (short-term) toxicity. Since inhalation would be the primary exposure route for these chemicals, other exposure pathways (e.g. ingestion, dermal) would only be small contributors and were not considered in this analysis. Also, previous studies have found that alternate exposure routes do not typically change the overall risk.[26]

TABLE Q-1
TOXICITY THRESHOLDS

Pollutant	Carcinogenic Toxicity Value (µg/m³)	Classification	Chronic Inhalation REL (µg/m³)	Acute REL (µg/m³)
1,3-Butadiene	0.00017	Known	20	---
Acetaldehyde	0.0000027	Probable	9	---
Acrolien	---	Unlikely	0.06	0.19 (1 hour)
Benzene	0.000029	Known	60	1300 (6 hour)
Diesel Particulate Matter	0.0033	Probable	5	---
Formaldehyde	0.000006	Probable	3	94 (1 hour)

Sources: CalEPA Office of Environmental Health Hazard Assessment (OEHHA), Toxicity Criteria Database, http://www.oehha.ca.gov/risk/ChemicalDB/

Exposure Assumptions

Based on types of human activity and land-use patterns in the vicinity of the Airport the following off-Airport populations are evaluated in the HHRA: residential adult and children, school children, off-Airport workers, and (for acute effects only) open space/recreational area users.

The exposure assumptions used to calculate health impacts include exposure frequency, exposure time, exposure duration, and averaging time. The exposure assumptions did not account for differences in population breathing rate or individual body weight. Each land use classification considered in the HHRA has its own unique exposure assumptions. The HHRA assumes a 70-year, 24-hour per day, 350 days per year exposure duration to calculate carcinogenic effects for

[25] CalEPA Office of Environmental Health Hazard Assessment (OEHHA), Toxicity Criteria Database, http://www.oehha.ca.gov/risk/ChemicalDB/.

[26] LAWA, 2004, *LAX Master Plan Final EIS/EIR, Human Health Risk Assessment*, Technical Report 14a., prepared for the Los Angeles World Airports Authority.

residents. This exposure duration is equivalent to residents being present in their home seven days a week for 50 weeks a year (or about 96 percent of the time) with approximately 15 days spent away from home. Potential health impacts to an offsite worker will vary depending on the worker's schedule and the operating hours of the facility. Offsite workers are assumed to work a regular 8 hour per day, 5 day per week, 49 week per year, 40 year schedule. School children exposure assumptions were based on 8 hour per day, 5 days per week, and 280 days per year over 14 years.

The results of the screening health risk assessment are presented within Table Q-2.

TABLE Q-2

SCREENING HEALTH RISK ASSESSMENT RESULTS

Receptor Group	Project Condition	Cancer Risk	Noncancer Health Index	Acute Impact
School	2010	0.02	<0.01	0.03
Residence		0.63	<0.01	0.11
Offsite Worker		0.17	<0.01	0.12
Recreational Area		--	--	0.06
School	2023	0.19	<0.01	0.13
Residence		3.79	<0.01	0.15
0ffsite Worker		0.96	<0.01	0.15
Recreational Area		--	--	0.07

Cancer Risks

The cancer risks can be estimated from the following equation:

$$CR = \sum_{i=1}^{\text{No. of exposure periods}} C_i \bullet URF \bullet LEA \bullet \text{Exposure Duration}_i/70 \text{ years}$$

where,

CR	Cancer risk; the probability of an individual developing cancer as a result of exposure.
C_i	Annual average concentration in $\mu g/m^3$ during the *i*-th exposure period
URF	Unit risk factor; estimated probability that a person will contract cancer as a result of inhaling a concentration of 1 $\mu g/m^3$ continuously over a period of 70 years
Exposure Periods	Number of discrete time periods where exposure to different levels will occur within the overall 70-year exposure period
Exposure Duration$_i$	Number of years for the *i*-th exposure period (total exposure duration will be 70 years)
LEA	Lifetime exposure adjustment

According to the results of the HHRA, the greatest potential impact to cancer risks is from diesel PM with 1,3-butadiene and formaldehyde making minor contributions. In the case of the residential receptor, the incremental risk of 3.79 in a million is well below the significance threshold of 10 in 1 million. The incremental cancer risk at the school is 0.19 in a million, and the cancer risk to off-site workers is 0.96 in a million, all well below the significance thresholds.

The diesel emissions are mostly from GSE operating at the airport with some contributions from motor vehicles. However, it is very likely that these impacts are overstated as the assessment does not take into account the anticipated replacement of GSE with low- and zero-emitting vehicles and equipment by the airlines over the next several years. Moreover, the analysis also does not account for the progressive reduction of diesel emissions state-wide attributable to the CARB Diesel PM10 Risk Reduction Program.

Non-Cancer Risks

The relationship for the non-cancer health effects is given by the following equation:

$$HI = C/REL$$

where,

HI	Hazard index; an expression of the potential for non-cancer health effects.
C	Annual average concentration ($\mu g/m^3$).
REL	Reference exposure level (REL); the concentration at which no adverse health effects are anticipated.

The non-cancer chronic (long-term) health impacts are well within the recommended HI for all the receptors (i.e., residential, school, and off-site worker) analyzed. The non-cancer acute (short term) health impacts are also well within the recommended HI for all receptors. These non-cancer impacts are driven principally by acrolein with lesser contributions from formaldehyde.

Information displaying the modeled concentration of VOC and PM, as well as the HAP are shown in the following figures.

2004 Existing Condition

	X (m)	Y (m)	Parking Lots Annual Concentration of VOC	1,3-butadiene	Acetaldehyde	Acrolein	Benzene	Formaldehyde
1	1708	-1708	0.00018	9.15E-07	1.94E-06	2.96E-07	4.67E-06	5.82E-06
3	156	-308	0.00004	2.03E-07	4.31E-07	6.58E-08	1.04E-06	1.29E-06
5	-390	-328	0.00003	1.52E-07	3.23E-07	4.93E-08	7.78E-07	9.70E-07
7	-246	1862	0.00003	1.52E-07	3.23E-07	4.93E-08	7.78E-07	9.70E-07
9	598	796	0.00003	1.52E-07	3.23E-07	4.93E-08	7.78E-07	9.70E-07
11	-200	-806	0.00003	1.52E-07	3.23E-07	4.93E-08	7.78E-07	9.70E-07
13	1059	-1530	0.00007	3.56E-07	7.53E-07	1.15E-07	1.81E-06	2.26E-06
15	679	-1527	0.00005	2.54E-07	5.38E-07	8.22E-08	1.30E-06	1.62E-06
17	428	-931	0.00002	1.02E-07	2.15E-07	3.29E-08	5.18E-07	6.46E-07
			Roadway Annual Concentration of VOC					
1	1708	-1708	0.00949	4.82E-05	1.02E-04	1.56E-05	2.46E-04	3.07E-04
3	156	-308	0.00341	1.73E-05	3.67E-05	5.61E-06	8.84E-05	1.10E-04
5	-390	-328	0.0032	1.63E-05	3.44E-05	5.26E-06	8.29E-05	1.03E-04
7	-246	1862	0.00281	1.43E-05	3.02E-05	4.62E-06	7.28E-05	9.08E-05
9	598	796	0.01529	7.77E-05	1.65E-04	2.51E-05	3.96E-04	4.94E-04
11	-200	-806	0.00304	1.54E-05	3.27E-05	5.00E-06	7.88E-05	9.82E-05
13	1059	-1530	0.00511	2.60E-05	5.50E-05	8.40E-06	1.32E-04	1.65E-04
15	679	-1527	0.00363	1.84E-05	3.91E-05	5.97E-06	9.41E-05	1.17E-04
17	428	-931	0.01258	6.39E-05	1.35E-04	2.07E-05	3.26E-04	4.07E-04
			Gates Annual Concentration of VOC					
1	1708	-1708	0.19541	1.33E-03	2.88E-03	3.23E-04	7.20E-03	5.52E-03
3	156	-308	0.27333	1.86E-03	4.03E-03	4.51E-04	1.01E-02	7.73E-03
5	-390	-328	0.0725	4.93E-04	1.07E-03	1.20E-04	2.67E-03	2.05E-03
7	-246	1862	0.02536	1.72E-04	3.74E-04	4.19E-05	9.34E-04	7.17E-04
9	598	796	0.05761	3.92E-04	8.50E-04	9.51E-05	2.12E-03	1.63E-03
11	-200	-806	0.06925	4.71E-04	1.02E-03	1.14E-04	2.55E-03	1.96E-03
13	1059	-1530	0.16253	1.10E-03	2.40E-03	2.68E-04	5.99E-03	4.59E-03
15	679	-1527	0.12602	8.57E-04	1.86E-03	2.08E-04	4.64E-03	3.56E-03
17	428	-931	0.04505	3.06E-04	6.65E-04	7.44E-05	1.66E-03	1.27E-03
			Aircraft Annual Concentration of VOC					
1	1708	-1708	0.1144	1.36E-03	1.63E-03	5.85E-04	3.70E-03	7.61E-03
3	156	-308	0.10006	1.19E-03	1.42E-03	5.12E-04	3.24E-03	6.66E-03
5	-390	-328	0.04106	4.87E-04	5.84E-04	2.10E-04	1.33E-03	2.73E-03
7	-246	1862	0.01418	1.68E-04	2.02E-04	7.25E-05	4.59E-04	9.43E-04
9	598	796	0.0284	3.37E-04	4.04E-04	1.45E-04	9.19E-04	1.89E-03
11	-200	-806	0.03137	3.72E-04	4.46E-04	1.60E-04	1.02E-03	2.09E-03
13	1059	-1530	0.07488	8.88E-04	1.06E-03	3.83E-04	2.42E-03	4.98E-03
15	679	-1527	0.04275	5.07E-04	6.08E-04	2.19E-04	1.38E-03	2.84E-03
17	428	-931	0.02394	2.84E-04	3.40E-04	1.22E-04	7.75E-04	1.59E-03
			Total Annual Concentration of VOC					
1	1708	-1708	3.19E-01	2.73E-03	4.61E-03	9.23E-04	1.11E-02	1.34E-02
3	156	-308	3.77E-01	3.06E-03	5.49E-03	9.69E-04	1.34E-02	1.45E-02
5	-390	-328	1.17E-01	9.96E-04	1.69E-03	3.35E-04	4.08E-03	4.88E-03
7	-246	1862	4.24E-02	3.55E-04	6.06E-04	1.19E-04	1.47E-03	1.75E-03
9	598	796	1.01E-01	8.06E-04	1.42E-03	2.66E-04	3.44E-03	4.01E-03
11	-200	-806	1.04E-01	8.59E-04	1.50E-03	2.80E-04	3.65E-03	4.14E-03
13	1059	-1530	2.43E-01	2.02E-03	3.52E-03	6.60E-04	8.54E-03	9.74E-03
15	679	-1527	1.72E-01	1.38E-03	2.51E-03	4.33E-04	6.12E-03	6.52E-03
17	428	-931	8.16E-02	6.54E-04	1.14E-03	2.18E-04	2.76E-03	3.27E-03

Parking Lots 1-Hour Concentration of VOC

1	1708	-1708	0.0098	4.98E-05	1.05E-04	1.61E-05	2.54E-04	3.17E-04
3	156	-308	0.02082	1.06E-04	2.24E-04	3.42E-05	5.40E-04	6.73E-04
5	-390	-328	0.01041	5.29E-05	1.12E-04	1.71E-05	2.70E-04	3.36E-04
7	-246	1862	0.00982	4.99E-05	1.06E-04	1.61E-05	2.55E-04	3.17E-04
9	598	796	0.01681	8.54E-05	1.81E-04	2.76E-05	4.36E-04	5.43E-04
11	-200	-806	0.00726	3.69E-05	7.81E-05	1.19E-05	1.88E-04	2.35E-04
13	1059	-1530	0.01147	5.83E-05	1.23E-04	1.89E-05	2.97E-04	3.71E-04
15	679	-1527	0.00719	3.65E-05	7.74E-05	1.18E-05	1.86E-04	2.32E-04
17	428	-931	0.00921	4.68E-05	9.91E-05	1.51E-05	2.39E-04	2.98E-04

Roadways 1-Hour Concentration of VOC

1	1708	-1708	1.00193	5.09E-03	1.08E-02	1.65E-03	2.60E-02	3.24E-02
3	156	-308	0.38314	1.95E-03	4.12E-03	6.30E-04	9.93E-03	1.24E-02
5	-390	-328	0.23385	1.19E-03	2.52E-03	3.85E-04	6.06E-03	7.56E-03
7	-246	1862	0.72764	3.70E-03	7.83E-03	1.20E-03	1.89E-02	2.35E-02
9	598	796	0.40277	2.05E-03	4.34E-03	6.62E-04	1.04E-02	1.30E-02
11	-200	-806	0.25894	1.32E-03	2.79E-03	4.26E-04	6.71E-03	8.37E-03
13	1059	-1530	0.46665	2.37E-03	5.02E-03	7.67E-04	1.21E-02	1.51E-02
15	679	-1527	0.29964	1.52E-03	3.23E-03	4.93E-04	7.77E-03	9.68E-03
17	428	-931	0.44727	2.27E-03	4.81E-03	7.35E-04	1.16E-02	1.45E-02

Gates 1-Hour Concentration of VOC

1	1708	-1708	5.41062	3.68E-02	7.98E-02	8.93E-03	1.99E-01	1.53E-01
3	156	-308	9.12234	6.20E-02	1.35E-01	1.51E-02	3.36E-01	2.58E-01
5	-390	-328	10.9851	7.47E-02	1.62E-01	1.81E-02	4.05E-01	3.10E-01
7	-246	1862	7.4206	5.04E-02	1.09E-01	1.22E-02	2.73E-01	2.10E-01
9	598	796	8.88925	6.04E-02	1.31E-01	1.47E-02	3.27E-01	2.51E-01
11	-200	-806	7.52761	5.12E-02	1.11E-01	1.24E-02	2.77E-01	2.13E-01
13	1059	-1530	9.15174	6.22E-02	1.35E-01	1.51E-02	3.37E-01	2.59E-01
15	679	-1527	6.75356	4.59E-02	9.96E-02	1.11E-02	2.49E-01	1.91E-01
17	428	-931	12.21723	8.31E-02	1.80E-01	2.02E-02	4.50E-01	3.45E-01

Aircraft 1-Hour Concentration of VOC

1	1708	-1708	3.54378	4.20E-02	5.04E-02	1.81E-02	1.15E-01	2.36E-01
3	156	-308	2.90683	3.45E-02	4.13E-02	1.49E-02	9.41E-02	1.93E-01
5	-390	-328	2.26205	2.68E-02	3.22E-02	1.16E-02	7.32E-02	1.50E-01
7	-246	1862	2.18934	2.60E-02	3.11E-02	1.12E-02	7.09E-02	1.46E-01
9	598	796	2.26474	2.69E-02	3.22E-02	1.16E-02	7.33E-02	1.51E-01
11	-200	-806	2.37817	2.82E-02	3.38E-02	1.22E-02	7.70E-02	1.58E-01
13	1059	-1530	3.69103	4.38E-02	5.25E-02	1.89E-02	1.19E-01	2.46E-01
15	679	-1527	2.63478	3.13E-02	3.75E-02	1.35E-02	8.53E-02	1.75E-01
17	428	-931	2.67796	3.18E-02	3.81E-02	1.37E-02	8.67E-02	1.78E-01

Total 1-Hour Concentration of VOC

1	1708	-1708	9.97E+00	8.40E-02	1.41E-01	2.87E-02	3.40E-01	4.21E-01
3	156	-308	1.24E+01	9.86E-02	1.80E-01	3.06E-02	4.40E-01	4.64E-01
5	-390	-328	1.35E+01	1.03E-01	1.97E-01	3.01E-02	4.84E-01	4.69E-01
7	-246	1862	1.03E+01	8.02E-02	1.49E-01	2.47E-02	3.63E-01	3.79E-01
9	598	796	1.16E+01	8.94E-02	1.68E-01	2.69E-02	4.12E-01	4.15E-01
11	-200	-806	1.02E+01	8.07E-02	1.48E-01	2.50E-02	3.61E-01	3.80E-01
13	1059	-1530	1.33E+01	1.08E-01	1.93E-01	3.48E-02	4.69E-01	5.20E-01
15	679	-1527	9.70E+00	7.87E-02	1.40E-01	2.51E-02	3.42E-01	3.76E-01
17	428	-931	1.54E+01	1.17E-01	2.23E-01	3.46E-02	5.48E-01	5.38E-01

2004 Existing Condition

	X (m)	Y (m)	Parking Lots Annual Concentration of VOC	1,3-butadi	Acetaldeh	Acrolein	Benzene	Formaldehyde
2	-60	608	0.00001	9.15E-07	1.94E-06	2.96E-07	4.67E-06	5.82E-06
4	-112	-318	0.00003	2.03E-07	4.31E-07	6.58E-08	1.04E-06	1.29E-06
6	-1358	-122	0.00002	1.52E-07	3.23E-07	4.93E-08	7.78E-07	9.70E-07
8	-495.5	-806	0.00003	1.52E-07	3.23E-07	4.93E-08	7.78E-07	9.70E-07
10	-350	-806	0.00003	1.52E-07	3.23E-07	4.93E-08	7.78E-07	9.70E-07
12	827.5	-1440	0.00007	1.52E-07	3.23E-07	4.93E-08	7.78E-07	9.70E-07
14	843	-1585	0.00006	3.56E-07	7.53E-07	1.15E-07	1.81E-06	2.26E-06
16	379	639	0.00001	2.54E-07	5.38E-07	8.22E-08	1.30E-06	1.62E-06

			Roadway Annual Concentration of VOC					
2	-60	608	0.0033	4.82E-05	1.02E-04	1.56E-05	2.46E-04	3.07E-04
4	-112	-318	0.00316	1.73E-05	3.67E-05	5.61E-06	8.84E-05	1.10E-04
6	-1358	-122	0.0028	1.63E-05	3.44E-05	5.26E-06	8.29E-05	1.03E-04
8	-495.5	-806	0.00301	1.43E-05	3.02E-05	4.62E-06	7.28E-05	9.08E-05
10	-350	-806	0.00302	7.77E-05	1.65E-04	2.51E-05	3.96E-04	4.94E-04
12	827.5	-1440	0.00448	1.54E-05	3.27E-05	5.00E-06	7.88E-05	9.82E-05
14	843	-1585	0.00416	2.60E-05	5.50E-05	8.40E-06	1.32E-04	1.65E-04
16	379	639	0.00967	1.84E-05	3.91E-05	5.97E-06	9.41E-05	1.17E-04

			Gates Annual Concentration of VOC					
2	-60	608	0.03226	1.33E-03	2.88E-03	3.23E-04	7.20E-03	5.52E-03
4	-112	-318	0.19952	1.86E-03	4.03E-03	4.51E-04	1.01E-02	7.73E-03
6	-1358	-122	0.02911	4.93E-04	1.07E-03	1.20E-04	2.67E-03	2.05E-03
8	-495.5	-806	0.04136	1.72E-04	3.74E-04	4.19E-05	9.34E-04	7.17E-04
10	-350	-806	0.05152	3.92E-04	8.50E-04	9.51E-05	2.12E-03	1.63E-03
12	827.5	-1440	0.15199	4.71E-04	1.02E-03	1.14E-04	2.55E-03	1.96E-03
14	843	-1585	0.13536	1.10E-03	2.40E-03	2.68E-04	5.99E-03	4.59E-03
16	379	639	0.05792	8.57E-04	1.86E-03	2.08E-04	4.64E-03	3.56E-03

			Aircraft Annual Concentration of VOC					
2	-60	608	0.02223	1.36E-03	1.63E-03	5.85E-04	3.70E-03	7.61E-03
4	-112	-318	0.05827	1.19E-03	1.42E-03	5.12E-04	3.24E-03	6.66E-03
6	-1358	-122	0.01555	4.87E-04	5.84E-04	2.10E-04	1.33E-03	2.73E-03
8	-495.5	-806	0.02442	1.68E-04	2.02E-04	7.25E-05	4.59E-04	9.43E-04
10	-350	-806	0.02707	3.37E-04	4.04E-04	1.45E-04	9.19E-04	1.89E-03
12	827.5	-1440	0.06026	3.72E-04	4.46E-04	1.60E-04	1.02E-03	2.09E-03
14	843	-1585	0.04995	8.88E-04	1.06E-03	3.83E-04	2.42E-03	4.98E-03
16	379	639	0.03031	5.07E-04	6.08E-04	2.19E-04	1.38E-03	2.84E-03

			Total Annual Concentration of VOC					
2	-60	608	5.78E-02	2.73E-03	4.61E-03	9.23E-04	1.11E-02	1.34E-02
4	-112	-318	2.61E-01	3.06E-03	5.49E-03	9.69E-04	1.34E-02	1.45E-02
6	-1358	-122	4.75E-02	9.96E-04	1.69E-03	3.35E-04	4.08E-03	4.88E-03
8	-495.5	-806	6.88E-02	3.55E-04	6.06E-04	1.19E-04	1.47E-03	1.75E-03
10	-350	-806	8.16E-02	8.06E-04	1.42E-03	2.66E-04	3.44E-03	4.01E-03
12	827.5	-1440	2.17E-01	8.59E-04	1.50E-03	2.80E-04	3.65E-03	4.14E-03
14	843	-1585	1.90E-01	2.02E-03	3.52E-03	6.60E-04	8.54E-03	9.74E-03
16	379	639	9.79E-02	1.38E-03	2.51E-03	4.33E-04	6.12E-03	6.52E-03

Parking Lots 1-Hour Concentration of VOC

2	-60	608	0.00768	4.98E-05	1.05E-04	1.61E-05	2.54E-04	3.17E-04
4	-112	-318	0.01406	1.06E-04	2.24E-04	3.42E-05	5.40E-04	6.73E-04
6	-1358	-122	0.0104	5.29E-05	1.12E-04	1.71E-05	2.70E-04	3.36E-04
8	-495.5	-806	0.01412	4.99E-05	1.06E-04	1.61E-05	2.55E-04	3.17E-04
10	-350	-806	0.0091	8.54E-05	1.81E-04	2.76E-05	4.36E-04	5.43E-04
12	827.5	-1440	0.00949	3.69E-05	7.81E-05	1.19E-05	1.88E-04	2.35E-04
14	843	-1585	0.00816	5.83E-05	1.23E-04	1.89E-05	2.97E-04	3.71E-04
16	379	639	0.0106	3.65E-05	7.74E-05	1.18E-05	1.86E-04	2.32E-04

Roadways 1-Hour Concentration of VOC

2	-60	608	0.59184	5.09E-03	1.08E-02	1.65E-03	2.60E-02	3.24E-02
4	-112	-318	0.27427	1.95E-03	4.12E-03	6.30E-04	9.93E-03	1.24E-02
6	-1358	-122	0.22789	1.19E-03	2.52E-03	3.85E-04	6.06E-03	7.56E-03
8	-495.5	-806	0.24537	3.70E-03	7.83E-03	1.20E-03	1.89E-02	2.35E-02
10	-350	-806	0.26225	2.05E-03	4.34E-03	6.62E-04	1.04E-02	1.30E-02
12	827.5	-1440	0.33719	1.32E-03	2.79E-03	4.26E-04	6.71E-03	8.37E-03
14	843	-1585	0.34132	2.37E-03	5.02E-03	7.67E-04	1.21E-02	1.51E-02
16	379	639	0.51851	1.52E-03	3.23E-03	4.93E-04	7.77E-03	9.68E-03

Gates 1-Hour Concentration of VOC

2	-60	608	9.75462	3.68E-02	7.98E-02	8.93E-03	1.99E-01	1.53E-01
4	-112	-318	9.80597	6.20E-02	1.35E-01	1.51E-02	3.36E-01	2.58E-01
6	-1358	-122	13.27798	7.47E-02	1.62E-01	1.81E-02	4.05E-01	3.10E-01
8	-495.5	-806	8.82075	5.04E-02	1.09E-01	1.22E-02	2.73E-01	2.10E-01
10	-350	-806	5.75405	6.04E-02	1.31E-01	1.47E-02	3.27E-01	2.51E-01
12	827.5	-1440	7.23787	5.12E-02	1.11E-01	1.24E-02	2.77E-01	2.13E-01
14	843	-1585	5.73232	6.22E-02	1.35E-01	1.51E-02	3.37E-01	2.59E-01
16	379	639	10.02611	4.59E-02	9.96E-02	1.11E-02	2.49E-01	1.91E-01

Aircraft 1-Hour Concentration of VOC

2	-60	608	2.45484	4.20E-02	5.04E-02	1.81E-02	1.15E-01	2.36E-01
4	-112	-318	1.99848	3.45E-02	4.13E-02	1.49E-02	9.41E-02	1.93E-01
6	-1358	-122	3.82728	2.68E-02	3.22E-02	1.16E-02	7.32E-02	1.50E-01
8	-495.5	-806	2.09011	2.60E-02	3.11E-02	1.12E-02	7.09E-02	1.46E-01
10	-350	-806	2.27541	2.69E-02	3.22E-02	1.16E-02	7.33E-02	1.51E-01
12	827.5	-1440	3.11476	2.82E-02	3.38E-02	1.22E-02	7.70E-02	1.58E-01
14	843	-1585	3.0584	4.38E-02	5.25E-02	1.89E-02	1.19E-01	2.46E-01
16	379	639	2.581	3.13E-02	3.75E-02	1.35E-02	8.53E-02	1.75E-01

Total 1-Hour Concentration of VOC

2	-60	608	1.28E+01	8.40E-02	1.41E-01	2.87E-02	3.40E-01	4.21E-01
4	-112	-318	1.21E+01	9.86E-02	1.80E-01	3.06E-02	4.40E-01	4.64E-01
6	-1358	-122	1.73E+01	1.03E-01	1.97E-01	3.01E-02	4.84E-01	4.69E-01
8	-495.5	-806	1.12E+01	8.02E-02	1.49E-01	2.47E-02	3.63E-01	3.79E-01
10	-350	-806	8.30E+00	8.94E-02	1.68E-01	2.69E-02	4.12E-01	4.15E-01
12	827.5	-1440	1.07E+01	8.07E-02	1.48E-01	2.50E-02	3.61E-01	3.80E-01
14	843	-1585	9.14E+00	1.08E-01	1.93E-01	3.48E-02	4.69E-01	5.20E-01
16	379	639	1.31E+01	7.87E-02	1.40E-01	2.51E-02	3.42E-01	3.76E-01

2010 Proposed Project

	X (m)	Y (m)	Parking Lots Annual Concentration of VOC	1,3-butadiene	Acetaldehyde	Acrolein	Benzene	Formaldehyde
1	1708	-1708	0.00014	7.05E-07	1.63E-06	2.34E-07	3.62E-06	4.76E-06
3	156	-308	0.00003	1.51E-07	3.50E-07	5.01E-08	7.75E-07	1.02E-06
5	-390	-328	0.00002	1.01E-07	2.34E-07	3.34E-08	5.17E-07	6.80E-07
7	-246	1862	0.00002	1.01E-07	2.34E-07	3.34E-08	5.17E-07	6.80E-07
9	598	796	0.00002	1.01E-07	2.34E-07	3.34E-08	5.17E-07	6.80E-07
11	-200	-806	0.00002	1.01E-07	2.34E-07	3.34E-08	5.17E-07	6.80E-07
13	1059	-1530	0.00005	2.52E-07	5.84E-07	8.36E-08	1.29E-06	1.70E-06
15	679	-1527	0.00004	2.01E-07	4.67E-07	6.69E-08	1.03E-06	1.36E-06
17	428	-931	0.00001	5.03E-08	1.17E-07	1.67E-08	2.58E-07	3.40E-07
			Roadway Annual Concentration of VOC					
1	1708	-1708	0.00648	3.26E-05	7.57E-05	1.08E-05	1.67E-04	2.20E-04
3	156	-308	0.00232	1.17E-05	2.71E-05	3.88E-06	5.99E-05	7.88E-05
5	-390	-328	0.00218	1.10E-05	2.55E-05	3.64E-06	5.63E-05	7.41E-05
7	-246	1862	0.00191	9.62E-06	2.23E-05	3.19E-06	4.93E-05	6.49E-05
9	598	796	0.01045	5.26E-05	1.22E-04	1.75E-05	2.70E-04	3.55E-04
11	-200	-806	0.00207	1.04E-05	2.42E-05	3.46E-06	5.35E-05	7.04E-05
13	1059	-1530	0.00348	1.75E-05	4.06E-05	5.82E-06	8.99E-05	1.18E-04
15	679	-1527	0.00248	1.25E-05	2.90E-05	4.14E-06	6.41E-05	8.43E-05
17	428	-931	0.0086	4.33E-05	1.00E-04	1.44E-05	2.22E-04	2.92E-04
			Gates Annual Concentration of VOC					
1	1708	-1708	0.16425	1.06E-03	2.29E-03	3.20E-04	5.74E-03	5.30E-03
3	156	-308	0.25844	1.67E-03	3.60E-03	5.03E-04	9.03E-03	8.34E-03
5	-390	-328	0.06693	4.32E-04	9.34E-04	1.30E-04	2.34E-03	2.16E-03
7	-246	1862	0.02134	1.38E-04	2.98E-04	4.15E-05	7.46E-04	6.89E-04
9	598	796	0.05086	3.28E-04	7.09E-04	9.90E-05	1.78E-03	1.64E-03
11	-200	-806	0.06274	4.05E-04	8.75E-04	1.22E-04	2.19E-03	2.02E-03
13	1059	-1530	0.14529	9.38E-04	2.03E-03	2.83E-04	5.08E-03	4.69E-03
15	679	-1527	0.11492	7.42E-04	1.60E-03	2.24E-04	4.02E-03	3.71E-03
17	428	-931	0.03985	2.57E-04	5.56E-04	7.75E-05	1.39E-03	1.29E-03
			Aircraft Annual Concentration of VOC					
1	1708	-1708	0.13084	1.55E-03	1.85E-03	6.65E-04	4.25E-03	8.63E-03
3	156	-308	0.12548	1.48E-03	1.77E-03	6.37E-04	4.07E-03	8.28E-03
5	-390	-328	0.04906	5.80E-04	6.94E-04	2.49E-04	1.59E-03	3.24E-03
7	-246	1862	0.01664	1.97E-04	2.35E-04	8.45E-05	5.40E-04	1.10E-03
9	598	796	0.03459	4.09E-04	4.89E-04	1.76E-04	1.12E-03	2.28E-03
11	-200	-806	0.0377	4.46E-04	5.33E-04	1.92E-04	1.22E-03	2.49E-03
13	1059	-1530	0.08956	1.06E-03	1.27E-03	4.55E-04	2.91E-03	5.91E-03
15	679	-1527	0.05117	6.05E-04	7.24E-04	2.60E-04	1.66E-03	3.38E-03
17	428	-931	0.03122	3.69E-04	4.42E-04	1.59E-04	1.01E-03	2.06E-03
			Total Annual Concentration of VOC					
1	1708	-1708	3.02E-01	2.64E-03	4.22E-03	9.95E-04	1.02E-02	1.42E-02
3	156	-308	3.86E-01	3.17E-03	5.41E-03	1.14E-03	1.32E-02	1.67E-02
5	-390	-328	1.18E-01	1.02E-03	1.65E-03	3.83E-04	3.99E-03	5.47E-03
7	-246	1862	3.99E-02	3.44E-04	5.55E-04	1.29E-04	1.34E-03	1.85E-03
9	598	796	9.59E-02	7.90E-04	1.32E-03	2.92E-04	3.17E-03	4.28E-03
11	-200	-806	1.03E-01	8.62E-04	1.43E-03	3.17E-04	3.47E-03	4.58E-03
13	1059	-1530	2.38E-01	2.02E-03	3.33E-03	7.44E-04	8.08E-03	1.07E-02
15	679	-1527	1.69E-01	1.36E-03	2.36E-03	4.88E-04	5.74E-03	7.17E-03
17	428	-931	7.97E-02	6.70E-04	1.10E-03	2.51E-04	2.63E-03	3.64E-03

Parking Lots 1-Hour Concentration of VOC

1	1708	-1708	0.0077	3.88E-05	8.99E-05	1.29E-05	1.99E-04	2.62E-04
3	156	-308	0.01636	8.24E-05	1.91E-04	2.73E-05	4.23E-04	5.56E-04
5	-390	-328	0.00818	4.12E-05	9.55E-05	1.37E-05	2.11E-04	2.78E-04
7	-246	1862	0.00771	3.88E-05	9.00E-05	1.29E-05	1.99E-04	2.62E-04
9	598	796	0.01321	6.65E-05	1.54E-04	2.21E-05	3.41E-04	4.49E-04
11	-200	-806	0.0057	2.87E-05	6.66E-05	9.53E-06	1.47E-04	1.94E-04
13	1059	-1530	0.00901	4.54E-05	1.05E-04	1.51E-05	2.33E-04	3.06E-04
15	679	-1527	0.00565	2.84E-05	6.60E-05	9.44E-06	1.46E-04	1.92E-04
17	428	-931	0.00724	3.65E-05	8.45E-05	1.21E-05	1.87E-04	2.46E-04

Roadways 1-Hour Concentration of VOC

1	1708	-1708	0.68553	3.45E-03	8.00E-03	1.15E-03	1.77E-02	2.33E-02
3	156	-308	0.26215	1.32E-03	3.06E-03	4.38E-04	6.77E-03	8.91E-03
5	-390	-328	0.16001	8.06E-04	1.87E-03	2.67E-04	4.13E-03	5.44E-03
7	-246	1862	0.49786	2.51E-03	5.81E-03	8.32E-04	1.29E-02	1.69E-02
9	598	796	0.27558	1.39E-03	3.22E-03	4.61E-04	7.12E-03	9.37E-03
11	-200	-806	0.17717	8.92E-04	2.07E-03	2.96E-04	4.58E-03	6.02E-03
13	1059	-1530	0.31929	1.61E-03	3.73E-03	5.34E-04	8.25E-03	1.09E-02
15	679	-1527	0.20502	1.03E-03	2.39E-03	3.43E-04	5.30E-03	6.97E-03
17	428	-931	0.30603	1.54E-03	3.57E-03	5.11E-04	7.91E-03	1.04E-02

Gates 1-Hour Concentration of VOC

1	1708	-1708	4.79031	3.09E-02	6.68E-02	9.32E-03	1.67E-01	1.55E-01
3	156	-308	9.08006	5.86E-02	1.27E-01	1.77E-02	3.17E-01	2.93E-01
5	-390	-328	8.34165	5.39E-02	1.16E-01	1.62E-02	2.92E-01	2.69E-01
7	-246	1862	7.3862	4.77E-02	1.03E-01	1.44E-02	2.58E-01	2.38E-01
9	598	796	7.17605	4.63E-02	1.00E-01	1.40E-02	2.51E-01	2.32E-01
11	-200	-806	5.71617	3.69E-02	7.97E-02	1.11E-02	2.00E-01	1.84E-01
13	1059	-1530	6.96599	4.50E-02	9.72E-02	1.36E-02	2.43E-01	2.25E-01
15	679	-1527	6.72059	4.34E-02	9.37E-02	1.31E-02	2.35E-01	2.17E-01
17	428	-931	9.28173	5.99E-02	1.29E-01	1.81E-02	3.24E-01	2.99E-01

Aircraft 1-Hour Concentration of VOC

1	1708	-1708	3.90094	4.62E-02	5.52E-02	1.98E-02	1.27E-01	2.57E-01
3	156	-308	3.6083	4.27E-02	5.10E-02	1.83E-02	1.17E-01	2.38E-01
5	-390	-328	2.44286	2.89E-02	3.45E-02	1.24E-02	7.93E-02	1.61E-01
7	-246	1862	2.39423	2.83E-02	3.39E-02	1.22E-02	7.77E-02	1.58E-01
9	598	796	2.43053	2.88E-02	3.44E-02	1.23E-02	7.89E-02	1.60E-01
11	-200	-806	2.49461	2.95E-02	3.53E-02	1.27E-02	8.10E-02	1.65E-01
13	1059	-1530	4.04314	4.78E-02	5.72E-02	2.05E-02	1.31E-01	2.67E-01
15	679	-1527	3.30363	3.91E-02	4.67E-02	1.68E-02	1.07E-01	2.18E-01
17	428	-931	2.8852	3.41E-02	4.08E-02	1.47E-02	9.37E-02	1.90E-01

Total 1-Hour Concentration of VOC

1	1708	-1708	9.38E+00	8.06E-02	1.30E-01	3.03E-02	3.12E-01	4.36E-01
3	156	-308	1.30E+01	1.03E-01	1.81E-01	3.65E-02	4.42E-01	5.41E-01
5	-390	-328	1.10E+01	8.36E-02	1.53E-01	2.89E-02	3.75E-01	4.36E-01
7	-246	1862	1.03E+01	7.86E-02	1.43E-01	2.74E-02	3.49E-01	4.14E-01
9	598	796	9.90E+00	7.65E-02	1.38E-01	2.68E-02	3.37E-01	4.02E-01
11	-200	-806	8.39E+00	6.73E-02	1.17E-01	2.41E-02	2.85E-01	3.55E-01
13	1059	-1530	1.13E+01	9.45E-02	1.58E-01	3.46E-02	3.83E-01	5.03E-01
15	679	-1527	1.02E+01	8.35E-02	1.43E-01	3.02E-02	3.48E-01	4.42E-01
17	428	-931	1.25E+01	9.56E-02	1.74E-01	3.32E-02	4.26E-01	5.01E-01

2010 Proposed Project

	X (m)	Y (m)	Parking Lots Annual Concentration of VOC	1,3-butadi	Acetaldeh	Acrolein	Benzene	Formaldehyde
2	-60	608	0	7.05E-07	1.63E-06	2.34E-07	3.62E-06	4.76E-06
4	-112	-318	0.00002	1.51E-07	3.50E-07	5.01E-08	7.75E-07	1.02E-06
6	-1358	-122	0.00002	1.01E-07	2.34E-07	3.34E-08	5.17E-07	6.80E-07
8	-495.5	-806	0.00002	1.01E-07	2.34E-07	3.34E-08	5.17E-07	6.80E-07
10	-350	-806	0.00002	1.01E-07	2.34E-07	3.34E-08	5.17E-07	6.80E-07
12	827.5	-1440	0.00005	1.01E-07	2.34E-07	3.34E-08	5.17E-07	6.80E-07
14	843	-1585	0.00005	2.52E-07	5.84E-07	8.36E-08	1.29E-06	1.70E-06
16	379	639	0.00001	2.01E-07	4.67E-07	6.69E-08	1.03E-06	1.36E-06

			Roadway Annual Concentration of VOC					
2	-60	608	0.00225	3.26E-05	7.57E-05	1.08E-05	1.67E-04	2.20E-04
4	-112	-318	0.00216	1.17E-05	2.71E-05	3.88E-06	5.99E-05	7.88E-05
6	-1358	-122	0.00191	1.10E-05	2.55E-05	3.64E-06	5.63E-05	7.41E-05
8	-495.5	-806	0.00205	9.62E-06	2.23E-05	3.19E-06	4.93E-05	6.49E-05
10	-350	-806	0.00206	5.26E-05	1.22E-04	1.75E-05	2.70E-04	3.55E-04
12	827.5	-1440	0.00305	1.04E-05	2.42E-05	3.46E-06	5.35E-05	7.04E-05
14	843	-1585	0.00283	1.75E-05	4.06E-05	5.82E-06	8.99E-05	1.18E-04
16	379	639	0.00661	1.25E-05	2.90E-05	4.14E-06	6.41E-05	8.43E-05

			Gates Annual Concentration of VOC					
2	-60	608	0.0307	1.06E-03	2.29E-03	3.20E-04	5.74E-03	5.30E-03
4	-112	-318	0.19231	1.67E-03	3.60E-03	5.03E-04	9.03E-03	8.34E-03
6	-1358	-122	0.02469	4.32E-04	9.34E-04	1.30E-04	2.34E-03	2.16E-03
8	-495.5	-806	0.03599	1.38E-04	2.98E-04	4.15E-05	7.46E-04	6.89E-04
10	-350	-806	0.04612	3.28E-04	7.09E-04	9.90E-05	1.78E-03	1.64E-03
12	827.5	-1440	0.13945	4.05E-04	8.75E-04	1.22E-04	2.19E-03	2.02E-03
14	843	-1585	0.12429	9.38E-04	2.03E-03	2.83E-04	5.08E-03	4.69E-03
16	379	639	0.05276	7.42E-04	1.60E-03	2.24E-04	4.02E-03	3.71E-03

			Aircraft Annual Concentration of VOC					
2	-60	608	0.03249	1.55E-03	1.85E-03	6.65E-04	4.25E-03	8.63E-03
4	-112	-318	0.07194	1.48E-03	1.77E-03	6.37E-04	4.07E-03	8.28E-03
6	-1358	-122	0.01878	5.80E-04	6.94E-04	2.49E-04	1.59E-03	3.24E-03
8	-495.5	-806	0.02807	1.97E-04	2.35E-04	8.45E-05	5.40E-04	1.10E-03
10	-350	-806	0.03186	4.09E-04	4.89E-04	1.76E-04	1.12E-03	2.28E-03
12	827.5	-1440	0.07319	4.46E-04	5.33E-04	1.92E-04	1.22E-03	2.49E-03
14	843	-1585	0.06049	1.06E-03	1.27E-03	4.55E-04	2.91E-03	5.91E-03
16	379	639	0.03798	6.05E-04	7.24E-04	2.60E-04	1.66E-03	3.38E-03

			Total Annual Concentration of VOC					
2	-60	608	6.54E-02	2.64E-03	4.22E-03	9.95E-04	1.02E-02	1.42E-02
4	-112	-318	2.66E-01	3.17E-03	5.41E-03	1.14E-03	1.32E-02	1.67E-02
6	-1358	-122	4.54E-02	1.02E-03	1.65E-03	3.83E-04	3.99E-03	5.47E-03
8	-495.5	-806	6.61E-02	3.44E-04	5.55E-04	1.29E-04	1.34E-03	1.85E-03
10	-350	-806	8.01E-02	7.90E-04	1.32E-03	2.92E-04	3.17E-03	4.28E-03
12	827.5	-1440	2.16E-01	8.62E-04	1.43E-03	3.17E-04	3.47E-03	4.58E-03
14	843	-1585	1.88E-01	2.02E-03	3.33E-03	7.44E-04	8.08E-03	1.07E-02
16	379	639	9.74E-02	1.36E-03	2.36E-03	4.88E-04	5.74E-03	7.17E-03

Parking Lots 1-Hour Concentration of VOC

2	-60	608	0.00603	3.88E-05	8.99E-05	1.29E-05	1.99E-04	2.62E-04
4	-112	-318	0.01105	8.24E-05	1.91E-04	2.73E-05	4.23E-04	5.56E-04
6	-1358	-122	0.00817	4.12E-05	9.55E-05	1.37E-05	2.11E-04	2.78E-04
8	-495.5	-806	0.0111	3.88E-05	9.00E-05	1.29E-05	1.99E-04	2.62E-04
10	-350	-806	0.00715	6.65E-05	1.54E-04	2.21E-05	3.41E-04	4.49E-04
12	827.5	-1440	0.00746	2.87E-05	6.66E-05	9.53E-06	1.47E-04	1.94E-04
14	843	-1585	0.00641	4.54E-05	1.05E-04	1.51E-05	2.33E-04	3.06E-04
16	379	639	0.00833	2.84E-05	6.60E-05	9.44E-06	1.46E-04	1.92E-04

Roadways 1-Hour Concentration of VOC

2	-60	608	0.40494	3.45E-03	8.00E-03	1.15E-03	1.77E-02	2.33E-02
4	-112	-318	0.18766	1.32E-03	3.06E-03	4.38E-04	6.77E-03	8.91E-03
6	-1358	-122	0.15592	8.06E-04	1.87E-03	2.67E-04	4.13E-03	5.44E-03
8	-495.5	-806	0.16788	2.51E-03	5.81E-03	8.32E-04	1.29E-02	1.69E-02
10	-350	-806	0.17943	1.39E-03	3.22E-03	4.61E-04	7.12E-03	9.37E-03
12	827.5	-1440	0.23071	8.92E-04	2.07E-03	2.96E-04	4.58E-03	6.02E-03
14	843	-1585	0.23354	1.61E-03	3.73E-03	5.34E-04	8.25E-03	1.09E-02
16	379	639	0.35477	1.03E-03	2.39E-03	3.43E-04	5.30E-03	6.97E-03

Gates 1-Hour Concentration of VOC

2	-60	608	9.7094	3.09E-02	6.68E-02	9.32E-03	1.67E-01	1.55E-01
4	-112	-318	9.76052	5.86E-02	1.27E-01	1.77E-02	3.17E-01	2.93E-01
6	-1358	-122	12.37811	5.39E-02	1.16E-01	1.62E-02	2.92E-01	2.69E-01
8	-495.5	-806	8.77986	4.77E-02	1.03E-01	1.44E-02	2.58E-01	2.38E-01
10	-350	-806	5.72738	4.63E-02	1.00E-01	1.40E-02	2.51E-01	2.32E-01
12	827.5	-1440	5.52743	3.69E-02	7.97E-02	1.11E-02	2.00E-01	1.84E-01
14	843	-1585	5.66793	4.50E-02	9.72E-02	1.36E-02	2.43E-01	2.25E-01
16	379	639	8.6873	4.34E-02	9.37E-02	1.31E-02	2.35E-01	2.17E-01

Aircraft 1-Hour Concentration of VOC

2	-60	608	2.65641	4.62E-02	5.52E-02	1.98E-02	1.27E-01	2.57E-01
4	-112	-318	2.73066	4.27E-02	5.10E-02	1.83E-02	1.17E-01	2.38E-01
6	-1358	-122	4.12556	2.89E-02	3.45E-02	1.24E-02	7.93E-02	1.61E-01
8	-495.5	-806	2.29269	2.83E-02	3.39E-02	1.22E-02	7.77E-02	1.58E-01
10	-350	-806	2.45565	2.88E-02	3.44E-02	1.23E-02	7.89E-02	1.60E-01
12	827.5	-1440	3.59302	2.95E-02	3.53E-02	1.27E-02	8.10E-02	1.65E-01
14	843	-1585	3.50752	4.78E-02	5.72E-02	2.05E-02	1.31E-01	2.67E-01
16	379	639	2.78183	3.91E-02	4.67E-02	1.68E-02	1.07E-01	2.18E-01

Total 1-Hour Concentration of VOC

2	-60	608	1.28E+01	8.06E-02	1.30E-01	3.03E-02	3.12E-01	4.36E-01
4	-112	-318	1.27E+01	1.03E-01	1.81E-01	3.65E-02	4.42E-01	5.41E-01
6	-1358	-122	1.67E+01	8.36E-02	1.53E-01	2.89E-02	3.75E-01	4.36E-01
8	-495.5	-806	1.13E+01	7.86E-02	1.43E-01	2.74E-02	3.49E-01	4.14E-01
10	-350	-806	8.37E+00	7.65E-02	1.38E-01	2.68E-02	3.37E-01	4.02E-01
12	827.5	-1440	9.36E+00	6.73E-02	1.17E-01	2.41E-02	2.85E-01	3.55E-01
14	843	-1585	9.42E+00	9.45E-02	1.58E-01	3.46E-02	3.83E-01	5.03E-01
16	379	639	1.18E+01	8.35E-02	1.43E-01	3.02E-02	3.48E-01	4.42E-01

2023 Proposed Project

	X (m)	Y (m)	Parking Lots Annual Concentration of VOC	1,3-butadiene	Acetaldehyde	Acrolein	Benzene	Formaldehyde
1	1708	-1708	0.00006	2.64E-07	1.45E-06	1.22E-07	1.48E-06	3.41E-06
3	156	-308	0.00001	4.40E-08	2.42E-07	2.04E-08	2.47E-07	5.69E-07
5	-390	-328	0.00001	4.40E-08	2.42E-07	2.04E-08	2.47E-07	5.69E-07
7	-246	1862	0.00001	4.40E-08	2.42E-07	2.04E-08	2.47E-07	5.69E-07
9	598	796	0.00001	4.40E-08	2.42E-07	2.04E-08	2.47E-07	5.69E-07
11	-200	-806	0.00001	4.40E-08	2.42E-07	2.04E-08	2.47E-07	5.69E-07
13	1059	-1530	0.00002	8.80E-08	4.84E-07	4.08E-08	4.93E-07	1.14E-06
15	679	-1527	0.00002	8.80E-08	4.84E-07	4.08E-08	4.93E-07	1.14E-06
17	428	-931	0.00001	4.40E-08	2.42E-07	2.04E-08	2.47E-07	5.69E-07
			Roadway Annual Concentration of VOC					
1	1708	-1708	0.00234	1.03E-05	5.66E-05	4.78E-06	5.77E-05	1.33E-04
3	156	-308	0.00084	3.70E-06	2.03E-05	1.71E-06	2.07E-05	4.78E-05
5	-390	-328	0.00079	3.48E-06	1.91E-05	1.61E-06	1.95E-05	4.49E-05
7	-246	1862	0.00069	3.04E-06	1.67E-05	1.41E-06	1.70E-05	3.92E-05
9	598	796	0.00376	1.65E-05	9.10E-05	7.68E-06	9.27E-05	2.14E-04
11	-200	-806	0.00075	3.30E-06	1.81E-05	1.53E-06	1.85E-05	4.27E-05
13	1059	-1530	0.00126	5.54E-06	3.05E-05	2.57E-06	3.11E-05	7.17E-05
15	679	-1527	0.0009	3.96E-06	2.18E-05	1.84E-06	2.22E-05	5.12E-05
17	428	-931	0.00309	1.36E-05	7.47E-05	6.31E-06	7.62E-05	1.76E-04
			Gates Annual Concentration of VOC					
1	1708	-1708	0.22732	1.61E-03	2.23E-03	3.55E-04	8.56E-03	4.38E-03
3	156	-308	0.30197	2.14E-03	2.97E-03	4.72E-04	1.14E-02	5.82E-03
5	-390	-328	0.08105	5.75E-04	7.96E-04	1.27E-04	3.05E-03	1.56E-03
7	-246	1862	0.02946	2.09E-04	2.89E-04	4.60E-05	1.11E-03	5.68E-04
9	598	796	0.06559	4.65E-04	6.45E-04	1.02E-04	2.47E-03	1.26E-03
11	-200	-806	0.07793	5.53E-04	7.66E-04	1.22E-04	2.93E-03	1.50E-03
13	1059	-1530	0.18416	1.31E-03	1.81E-03	2.88E-04	6.94E-03	3.55E-03
15	679	-1527	0.14149	1.00E-03	1.39E-03	2.21E-04	5.33E-03	2.73E-03
17	428	-931	0.05123	3.64E-04	5.03E-04	8.01E-05	1.93E-03	9.87E-04
			Aircraft Annual Concentration of VOC					
1	1708	-1708	0.15822	1.90E-03	2.30E-03	8.31E-04	5.06E-03	1.09E-02
3	156	-308	0.14982	1.80E-03	2.17E-03	7.87E-04	4.79E-03	1.03E-02
5	-390	-328	0.05853	7.03E-04	8.49E-04	3.07E-04	1.87E-03	4.02E-03
7	-246	1862	0.02018	2.42E-04	2.93E-04	1.06E-04	6.45E-04	1.38E-03
9	598	796	0.04174	5.01E-04	6.06E-04	2.19E-04	1.33E-03	2.86E-03
11	-200	-806	0.04525	5.43E-04	6.57E-04	2.38E-04	1.45E-03	3.11E-03
13	1059	-1530	0.10763	1.29E-03	1.56E-03	5.65E-04	3.44E-03	7.39E-03
15	679	-1527	0.06139	7.37E-04	8.91E-04	3.22E-04	1.96E-03	4.21E-03
17	428	-931	0.03775	4.53E-04	5.48E-04	1.98E-04	1.21E-03	2.59E-03
			Total Annual Concentration of VOC					
1	1708	-1708	3.88E-01	3.52E-03	4.59E-03	1.19E-03	1.37E-02	1.54E-02
3	156	-308	4.53E-01	3.95E-03	5.16E-03	1.26E-03	1.62E-02	1.61E-02
5	-390	-328	1.40E-01	1.28E-03	1.67E-03	4.36E-04	4.94E-03	5.62E-03
7	-246	1862	5.03E-02	4.54E-04	5.99E-04	1.53E-04	1.77E-03	1.99E-03
9	598	796	1.11E-01	9.83E-04	1.34E-03	3.29E-04	3.90E-03	4.34E-03
11	-200	-806	1.24E-01	1.10E-03	1.44E-03	3.61E-04	4.40E-03	4.65E-03
13	1059	-1530	2.93E-01	2.60E-03	3.40E-03	8.56E-04	1.04E-02	1.10E-02
15	679	-1527	2.04E-01	1.75E-03	2.30E-03	5.45E-04	7.31E-03	6.99E-03
17	428	-931	9.21E-02	8.30E-04	1.13E-03	2.85E-04	3.21E-03	3.75E-03

Parking Lots 1-Hour Concentration of VOC

1	1708	-1708	0.0035	1.54E-05	8.47E-05	7.14E-06	8.63E-05	1.99E-04
3	156	-308	0.00744	3.27E-05	1.80E-04	1.52E-05	1.83E-04	4.23E-04
5	-390	-328	0.00372	1.64E-05	9.00E-05	7.59E-06	9.17E-05	2.12E-04
7	-246	1862	0.00351	1.54E-05	8.49E-05	7.16E-06	8.65E-05	2.00E-04
9	598	796	0.006	2.64E-05	1.45E-04	1.22E-05	1.48E-04	3.41E-04
11	-200	-806	0.00259	1.14E-05	6.26E-05	5.29E-06	6.39E-05	1.47E-04
13	1059	-1530	0.0041	1.80E-05	9.92E-05	8.37E-06	1.01E-04	2.33E-04
15	679	-1527	0.00257	1.13E-05	6.22E-05	5.25E-06	6.34E-05	1.46E-04
17	428	-931	0.00329	1.45E-05	7.96E-05	6.72E-06	8.11E-05	1.87E-04

Roadways 1-Hour Concentration of VOC

1	1708	-1708	0.24609	1.08E-03	5.95E-03	5.02E-04	6.07E-03	1.40E-02
3	156	-308	0.0941	4.14E-04	2.28E-03	1.92E-04	2.32E-03	5.35E-03
5	-390	-328	0.05744	2.53E-04	1.39E-03	1.17E-04	1.42E-03	3.27E-03
7	-246	1862	0.17872	7.87E-04	4.32E-03	3.65E-04	4.41E-03	1.02E-02
9	598	796	0.09892	4.35E-04	2.39E-03	2.02E-04	2.44E-03	5.63E-03
11	-200	-806	0.0636	2.80E-04	1.54E-03	1.30E-04	1.57E-03	3.62E-03
13	1059	-1530	0.11462	5.04E-04	2.77E-03	2.34E-04	2.83E-03	6.52E-03
15	679	-1527	0.0736	3.24E-04	1.78E-03	1.50E-04	1.81E-03	4.19E-03
17	428	-931	0.10986	4.83E-04	2.66E-03	2.24E-04	2.71E-03	6.25E-03

Gates 1-Hour Concentration of VOC

1	1708	-1708	6.5266	4.63E-02	6.41E-02	1.02E-02	2.46E-01	1.26E-01
3	156	-308	10.18051	7.23E-02	1.00E-01	1.59E-02	3.83E-01	1.96E-01
5	-390	-328	13.29321	9.43E-02	1.31E-01	2.08E-02	5.01E-01	2.56E-01
7	-246	1862	8.3831	5.95E-02	8.24E-02	1.31E-02	3.16E-01	1.62E-01
9	598	796	10.58761	7.51E-02	1.04E-01	1.65E-02	3.99E-01	2.04E-01
11	-200	-806	9.10926	6.46E-02	8.95E-02	1.42E-02	3.43E-01	1.76E-01
13	1059	-1530	11.06541	7.85E-02	1.09E-01	1.73E-02	4.17E-01	2.13E-01
15	679	-1527	7.28272	5.17E-02	7.16E-02	1.14E-02	2.74E-01	1.40E-01
17	428	-931	14.78176	1.05E-01	1.45E-01	2.31E-02	5.57E-01	2.85E-01

Aircraft 1-Hour Concentration of VOC

1	1708	-1708	4.76776	5.72E-02	6.92E-02	2.50E-02	1.52E-01	3.27E-01
3	156	-308	4.34829	5.22E-02	6.31E-02	2.28E-02	1.39E-01	2.98E-01
5	-390	-328	2.92068	3.51E-02	4.24E-02	1.53E-02	9.34E-02	2.00E-01
7	-246	1862	2.91614	3.50E-02	4.23E-02	1.53E-02	9.33E-02	2.00E-01
9	598	796	2.89387	3.47E-02	4.20E-02	1.52E-02	9.25E-02	1.99E-01
11	-200	-806	2.98369	3.58E-02	4.33E-02	1.57E-02	9.54E-02	2.05E-01
13	1059	-1530	4.85162	5.82E-02	7.04E-02	2.55E-02	1.55E-01	3.33E-01
15	679	-1527	3.96295	4.76E-02	5.75E-02	2.08E-02	1.27E-01	2.72E-01
17	428	-931	3.43914	4.13E-02	4.99E-02	1.81E-02	1.10E-01	2.36E-01

Total 1-Hour Concentration of VOC

1	1708	-1708	1.15E+01	1.05E-01	1.39E-01	3.57E-02	4.04E-01	4.67E-01
3	156	-308	1.46E+01	1.25E-01	1.66E-01	3.89E-02	5.25E-01	5.00E-01
5	-390	-328	1.63E+01	1.30E-01	1.74E-01	3.62E-02	5.96E-01	4.60E-01
7	-246	1862	1.15E+01	9.53E-02	1.29E-01	2.88E-02	4.13E-01	3.72E-01
9	598	796	1.36E+01	1.10E-01	1.49E-01	3.20E-02	4.94E-01	4.09E-01
11	-200	-806	1.22E+01	1.01E-01	1.34E-01	3.00E-02	4.40E-01	3.84E-01
13	1059	-1530	1.60E+01	1.37E-01	1.82E-01	4.30E-02	5.75E-01	5.53E-01
15	679	-1527	1.13E+01	9.96E-02	1.31E-01	3.23E-02	4.03E-01	4.17E-01
17	428	-931	1.83E+01	1.47E-01	1.98E-01	4.14E-02	6.69E-01	5.27E-01

2023 Proposed Project

	X (m)	Y (m)	Parking Lots Annual Concentration of VOC	1,3-butadi	Acetaldeh	Acrolein	Benzene	Formaldehyde
2	-60	608	0	2.64E-07	1.45E-06	1.22E-07	1.48E-06	3.41E-06
4	-112	-318	0.00001	4.40E-08	2.42E-07	2.04E-08	2.47E-07	5.69E-07
6	-1358	-122	0.00001	4.40E-08	2.42E-07	2.04E-08	2.47E-07	5.69E-07
8	-495.5	-806	0.00001	4.40E-08	2.42E-07	2.04E-08	2.47E-07	5.69E-07
10	-350	-806	0.00001	4.40E-08	2.42E-07	2.04E-08	2.47E-07	5.69E-07
12	827.5	-1440	0.00002	4.40E-08	2.42E-07	2.04E-08	2.47E-07	5.69E-07
14	843	-1585	0.00002	8.80E-08	4.84E-07	4.08E-08	4.93E-07	1.14E-06
16	379	639	0	8.80E-08	4.84E-07	4.08E-08	4.93E-07	1.14E-06
			Roadway Annual Concentration of VOC					
2	-60	608	0.00081	1.03E-05	5.66E-05	4.78E-06	5.77E-05	1.33E-04
4	-112	-318	0.00078	3.70E-06	2.03E-05	1.71E-06	2.07E-05	4.78E-05
6	-1358	-122	0.00069	3.48E-06	1.91E-05	1.61E-06	1.95E-05	4.49E-05
8	-495.5	-806	0.00074	3.04E-06	1.67E-05	1.41E-06	1.70E-05	3.92E-05
10	-350	-806	0.00075	1.65E-05	9.10E-05	7.68E-06	9.27E-05	2.14E-04
12	827.5	-1440	0.0011	3.30E-06	1.81E-05	1.53E-06	1.85E-05	4.27E-05
14	843	-1585	0.00102	5.54E-06	3.05E-05	2.57E-06	3.11E-05	7.17E-05
16	379	639	0.00238	3.96E-06	2.18E-05	1.84E-06	2.22E-05	5.12E-05
			Gates Annual Concentration of VOC					
2	-60	608	0.03553	1.61E-03	2.23E-03	3.55E-04	8.56E-03	4.38E-03
4	-112	-318	0.21848	2.14E-03	2.97E-03	4.72E-04	1.14E-02	5.82E-03
6	-1358	-122	0.03368	5.75E-04	7.96E-04	1.27E-04	3.05E-03	1.56E-03
8	-495.5	-806	0.04741	2.09E-04	2.89E-04	4.60E-05	1.11E-03	5.68E-04
10	-350	-806	0.0583	4.65E-04	6.45E-04	1.02E-04	2.47E-03	1.26E-03
12	827.5	-1440	0.17019	5.53E-04	7.66E-04	1.22E-04	2.93E-03	1.50E-03
14	843	-1585	0.15151	1.31E-03	1.81E-03	2.88E-04	6.94E-03	3.55E-03
16	379	639	0.06505	1.00E-03	1.39E-03	2.21E-04	5.33E-03	2.73E-03
			Aircraft Annual Concentration of VOC					
2	-60	608	0.03923	1.90E-03	2.30E-03	8.31E-04	5.06E-03	1.09E-02
4	-112	-318	0.08568	1.80E-03	2.17E-03	7.87E-04	4.79E-03	1.03E-02
6	-1358	-122	0.02271	7.03E-04	8.49E-04	3.07E-04	1.87E-03	4.02E-03
8	-495.5	-806	0.03376	2.42E-04	2.93E-04	1.06E-04	6.45E-04	1.38E-03
10	-350	-806	0.03827	5.01E-04	6.06E-04	2.19E-04	1.33E-03	2.86E-03
12	827.5	-1440	0.08778	5.43E-04	6.57E-04	2.38E-04	1.45E-03	3.11E-03
14	843	-1585	0.07256	1.29E-03	1.56E-03	5.65E-04	3.44E-03	7.39E-03
16	379	639	0.04585	7.37E-04	8.91E-04	3.22E-04	1.96E-03	4.21E-03
			Total Annual Concentration of VOC					
2	-60	608	7.56E-02	3.52E-03	4.59E-03	1.19E-03	1.37E-02	1.54E-02
4	-112	-318	3.05E-01	3.95E-03	5.16E-03	1.26E-03	1.62E-02	1.61E-02
6	-1358	-122	5.71E-02	1.28E-03	1.67E-03	4.36E-04	4.94E-03	5.62E-03
8	-495.5	-806	8.19E-02	4.54E-04	5.99E-04	1.53E-04	1.77E-03	1.99E-03
10	-350	-806	9.73E-02	9.83E-04	1.34E-03	3.29E-04	3.90E-03	4.34E-03
12	827.5	-1440	2.59E-01	1.10E-03	1.44E-03	3.61E-04	4.40E-03	4.65E-03
14	843	-1585	2.25E-01	2.60E-03	3.40E-03	8.56E-04	1.04E-02	1.10E-02
16	379	639	1.13E-01	1.75E-03	2.30E-03	5.45E-04	7.31E-03	6.99E-03

Parking Lots 1-Hour Concentration of VOC

2	-60	608	0.00274	1.54E-05	8.47E-05	7.14E-06	8.63E-05	1.99E-04
4	-112	-318	0.00502	3.27E-05	1.80E-04	1.52E-05	1.83E-04	4.23E-04
6	-1358	-122	0.00371	1.64E-05	9.00E-05	7.59E-06	9.17E-05	2.12E-04
8	-495.5	-806	0.00504	1.54E-05	8.49E-05	7.16E-06	8.65E-05	2.00E-04
10	-350	-806	0.00325	2.64E-05	1.45E-04	1.22E-05	1.48E-04	3.41E-04
12	827.5	-1440	0.00339	1.14E-05	6.26E-05	5.29E-06	6.39E-05	1.47E-04
14	843	-1585	0.00292	1.80E-05	9.92E-05	8.37E-06	1.01E-04	2.33E-04
16	379	639	0.00379	1.13E-05	6.22E-05	5.25E-06	6.34E-05	1.46E-04

Roadways 1-Hour Concentration of VOC

2	-60	608	0.14536	1.08E-03	5.95E-03	5.02E-04	6.07E-03	1.40E-02
4	-112	-318	0.06736	4.14E-04	2.28E-03	1.92E-04	2.32E-03	5.35E-03
6	-1358	-122	0.05597	2.53E-04	1.39E-03	1.17E-04	1.42E-03	3.27E-03
8	-495.5	-806	0.06027	7.87E-04	4.32E-03	3.65E-04	4.41E-03	1.02E-02
10	-350	-806	0.06441	4.35E-04	2.39E-03	2.02E-04	2.44E-03	5.63E-03
12	827.5	-1440	0.08282	2.80E-04	1.54E-03	1.30E-04	1.57E-03	3.62E-03
14	843	-1585	0.08383	5.04E-04	2.77E-03	2.34E-04	2.83E-03	6.52E-03
16	379	639	0.12735	3.24E-04	1.78E-03	1.50E-04	1.81E-03	4.19E-03

Gates 1-Hour Concentration of VOC

2	-60	608	10.51759	4.63E-02	6.41E-02	1.02E-02	2.46E-01	1.26E-01
4	-112	-318	10.80975	7.23E-02	1.00E-01	1.59E-02	3.83E-01	1.96E-01
6	-1358	-122	15.00492	9.43E-02	1.31E-01	2.08E-02	5.01E-01	2.56E-01
8	-495.5	-806	9.51067	5.95E-02	8.24E-02	1.31E-02	3.16E-01	1.62E-01
10	-350	-806	6.20411	7.51E-02	1.04E-01	1.65E-02	3.99E-01	2.04E-01
12	827.5	-1440	8.74116	6.46E-02	8.95E-02	1.42E-02	3.43E-01	1.76E-01
14	843	-1585	6.51951	7.85E-02	1.09E-01	1.73E-02	4.17E-01	2.13E-01
16	379	639	11.95688	5.17E-02	7.16E-02	1.14E-02	2.74E-01	1.40E-01

Aircraft 1-Hour Concentration of VOC

2	-60	608	3.18533	5.72E-02	6.92E-02	2.50E-02	1.52E-01	3.27E-01
4	-112	-318	3.29007	5.22E-02	6.31E-02	2.28E-02	1.39E-01	2.98E-01
6	-1358	-122	4.89207	3.51E-02	4.24E-02	1.53E-02	9.34E-02	2.00E-01
8	-495.5	-806	2.74204	3.50E-02	4.23E-02	1.53E-02	9.33E-02	2.00E-01
10	-350	-806	2.93764	3.47E-02	4.20E-02	1.52E-02	9.25E-02	1.99E-01
12	827.5	-1440	4.31513	3.58E-02	4.33E-02	1.57E-02	9.54E-02	2.05E-01
14	843	-1585	4.20855	5.82E-02	7.04E-02	2.55E-02	1.55E-01	3.33E-01
16	379	639	3.3185	4.76E-02	5.75E-02	2.08E-02	1.27E-01	2.72E-01

Total 1-Hour Concentration of VOC

2	-60	608	1.39E+01	1.05E-01	1.39E-01	3.57E-02	4.04E-01	4.67E-01
4	-112	-318	1.42E+01	1.25E-01	1.66E-01	3.89E-02	5.25E-01	5.00E-01
6	-1358	-122	2.00E+01	1.30E-01	1.74E-01	3.62E-02	5.96E-01	4.60E-01
8	-495.5	-806	1.23E+01	9.53E-02	1.29E-01	2.88E-02	4.13E-01	3.72E-01
10	-350	-806	9.21E+00	1.10E-01	1.49E-01	3.20E-02	4.94E-01	4.09E-01
12	827.5	-1440	1.31E+01	1.01E-01	1.34E-01	3.00E-02	4.40E-01	3.84E-01
14	843	-1585	1.08E+01	1.37E-01	1.82E-01	4.30E-02	5.75E-01	5.53E-01
16	379	639	1.54E+01	9.96E-02	1.31E-01	3.23E-02	4.03E-01	4.17E-01

2004 Existing Condition

	X (m)	Y (m)	Concentration		DPM		X (m)	Y (m)	Concentration	DPM
Parking Lots Annual Concentration of PM10										
1	1708	-1708	0.0001	1	0.000003	2	-60	608	0	0
3	156	-308	0.00002		0.0000006	4	-112	-318	0.00002	0.0000006
5	-390	-328	0.00002		0.0000006	6	-1358	-122	0.00001	0.0000003
7	-246	1862	0.00002		0.0000006	8	-495.5	-806	0.00002	0.0000006
9	598	796	0.00002		0.0000006	10	-350	-806	0.00002	0.0000006
11	-200	-806	0.00002		0.0000006	12	827.5	-1440	0.00004	0.0000012
13	1059	-1530	0.00004		0.0000012	14	843	-1585	0.00004	0.0000012
15	679	-1527	0.00003		0.0000009	16	379	639	0.00001	0.0000003
17	428	-931	0.00001		0.0000003					
Roadways Annual Concentration of PM10										
1	1708	-1708	0.00542		0.00182329	2	-60	608	0.00189	0.000635796
3	156	-308	0.00195		0.00065598	4	-112	-318	0.00181	0.000608884
5	-390	-328	0.00183		0.00061561	6	-1358	-122	0.00161	0.000541604
7	-246	1862	0.00161		0.0005416	8	-495.5	-806	0.00172	0.000578608
9	598	796	0.00873		0.00293677	10	-350	-806	0.00173	0.000581972
11	-200	-806	0.00174		0.00058534	12	827.5	-1440	0.00256	0.000861184
13	1059	-1530	0.00292		0.00098229	14	843	-1585	0.00238	0.000800632
15	679	-1527	0.00208		0.00069971	16	379	639	0.00552	0.001856928
17	428	-931	0.00718		0.00241535					
Gates Annual Concentration of PM10										
1	1708	-1708	0.01705	1	0.01496542	2	-60	608	0.00509	0.004467683
3	156	-308	0.04205		0.03690885	4	-112	-318	0.03293	0.02890389
5	-390	-328	0.01008		0.00884759	6	-1358	-122	0.00274	0.002405
7	-246	1862	0.00225		0.00197491	8	-495.5	-806	0.0044	0.003862044
9	598	796	0.00664		0.00582818	10	-350	-806	0.00635	0.005573632
11	-200	-806	0.00902		0.00791719	12	827.5	-1440	0.02078	0.018239381
13	1059	-1530	0.01975		0.01733531	14	843	-1585	0.01859	0.016317137
15	679	-1527	0.0168		0.01474599	16	379	639	0.00769	0.0067498
17	428	-931	0.00526		0.0046169					
Total Annual Concentration of PM10										
1	1708	-1708			0.01679171	2	-60	608		0.005103479
3	156	-308			0.03756543	4	-112	-318		0.029513374
5	-390	-328			0.0094638	6	-1358	-122		0.002946904
7	-246	1862			0.00251711	8	-495.5	-806		0.004441252
9	598	796			0.00876555	10	-350	-806		0.006156204
11	-200	-806			0.00850313	12	827.5	-1440		0.019101765
13	1059	-1530			0.0183188	14	843	-1585		0.017118969
15	679	-1527			0.0154466	16	379	639		0.008607028
17	428	-931			0.00703255					

2010 Proposed Project

	X (m)	Y (m)	Concentration		DPM		X (m)	Y (m)	Concentration	DPM
Parking Lots Annual Concentration of PM10										
1	1708	-1708	0.00014	1	0.0000014	2	-60	608	0	0
3	156	-308	0.00003		0.0000003	4	-112	-318	0.00002	0.0000002
5	-390	-328	0.00002		0.0000002	6	-1358	-122	0.00002	0.0000002
7	-246	1862	0.00002		0.0000002	8	-495.5	-806	0.00002	0.0000002
9	598	796	0.00002		0.0000002	10	-350	-806	0.00002	0.0000002
11	-200	-806	0.00002		0.0000002	12	827.5	-1440	0.00005	0.0000005
13	1059	-1530	0.00005		0.0000005	14	843	-1585	0.00005	0.0000005
15	679	-1527	0.00004		0.0000004	16	379	639	0.00001	0.0000001
17	428	-931	0.00001		0.0000001					
Roadways Annual Concentration of PM10										
1	1708	-1708	0.00689		0.00162432	2	-60	608	0.00239	0.000563443
3	156	-308	0.00247		0.0005823	4	-112	-318	0.00229	0.000539868
5	-390	-328	0.00232		0.00054694	6	-1358	-122	0.00203	0.000478573
7	-246	1862	0.00203		0.00047857	8	-495.5	-806	0.00218	0.000513935
9	598	796	0.01112		0.00262154	10	-350	-806	0.00219	0.000516293
11	-200	-806	0.0022		0.00051865	12	827.5	-1440	0.00324	0.00076383
13	1059	-1530	0.0037		0.00087228	14	843	-1585	0.00301	0.000709608
15	679	-1527	0.00263		0.00062002	16	379	639	0.00703	0.001657323
17	428	-931	0.00915		0.00215711					
Gates Annual Concentration of PM10										
1	1708	-1708	0.01868	1	0.01659789	2	-60	608	0.00565	0.00502024
3	156	-308	0.04662		0.04142364	4	-112	-318	0.03655	0.032476066
5	-390	-328	0.01115		0.0099072	6	-1358	-122	0.00301	0.0026745
7	-246	1862	0.00246		0.0021858	8	-495.5	-806	0.00485	0.00430941
9	598	796	0.00731		0.00649521	10	-350	-806	0.00701	0.006228652
11	-200	-806	0.00996		0.00884984	12	827.5	-1440	0.023	0.020436375
13	1059	-1530	0.02181		0.01937902	14	843	-1585	0.02057	0.018277228
15	679	-1527	0.01858		0.01650904	16	379	639	0.0085	0.007552574
17	428	-931	0.0058		0.00515352					
Total Annual Concentration of PM10										
1	1708	-1708			0.01822361	2	-60	608		0.005583683
3	156	-308			0.04200625	4	-112	-318		0.033016134
5	-390	-328			0.01045434	6	-1358	-122		0.003153272
7	-246	1862			0.00266458	8	-495.5	-806		0.004823545
9	598	796			0.00911695	10	-350	-806		0.006745144
11	-200	-806			0.00936869	12	827.5	-1440		0.021200705
13	1059	-1530			0.02025179	14	843	-1585		0.018987335
15	679	-1527			0.01712946	16	379	639		0.009209996
17	428	-931			0.00731073					

2023 Proposed Project

	X (m)	Y (m)	Concentration		DPM		X (m)	Y (m)	Concentration	DPM
	Parking Lots Annual Concentration of PM10									
1	1708	-1708	0.00023	1	0.0000023	2	-60	608	0.00001	0.0000001
3	156	-308	0.00005		0.0000005	4	-112	-318	0.00003	0.0000003
5	-390	-328	0.00004		0.0000004	6	-1358	-122	0.00003	0.0000003
7	-246	1862	0.00004		0.0000004	8	-495.5	-806	0.00004	0.0000004
9	598	796	0.00004		0.0000004	10	-350	-806	0.00004	0.0000004
11	-200	-806	0.00004		0.0000004	12	827.5	-1440	0.00008	0.0000008
13	1059	-1530	0.00009		0.0000009	14	843	-1585	0.00008	0.0000008
15	679	-1527	0.00007		0.0000007	16	379	639	0.00002	0.0000002
17	428	-931	0.00002		0.0000002					
	Roadways Annual Concentration of PM10									
1	1708	-1708	0.00965		0.00103944	2	-60	608	0.00335	0.000360843
3	156	-308	0.00346		0.00037269	4	-112	-318	0.00321	0.000345763
5	-390	-328	0.00325		0.00035007	6	-1358	-122	0.00284	0.000305909
7	-246	1862	0.00285		0.00030699	8	-495.5	-806	0.00305	0.000328529
9	598	796	0.01555		0.00167496	10	-350	-806	0.00307	0.000330683
11	-200	-806	0.00308		0.00033176	12	827.5	-1440	0.00455	0.0004901
13	1059	-1530	0.00519		0.00055904	14	843	-1585	0.00422	0.000454554
15	679	-1527	0.00369		0.00039747	16	379	639	0.00984	0.001059909
17	428	-931	0.01279		0.00137767					
	Gates Annual Concentration of PM10									
1	1708	-1708	0.03102	1	0.02751444	2	-60	608	0.00833	0.00738863
3	156	-308	0.06904		0.06123782	4	-112	-318	0.05352	0.047471726
5	-390	-328	0.01678		0.0148837	6	-1358	-122	0.00491	0.004355123
7	-246	1862	0.00408		0.00361892	8	-495.5	-806	0.00768	0.006812086
9	598	796	0.01142		0.01012943	10	-350	-806	0.01079	0.009570626
11	-200	-806	0.01519		0.01347338	12	827.5	-1440	0.03474	0.030814046
13	1059	-1530	0.03366		0.0298561	14	843	-1585	0.03105	0.027541052
15	679	-1527	0.0282		0.02501313	16	379	639	0.0129	0.011442176
17	428	-931	0.00903		0.00800952					
	Total Annual Concentration of PM10									
1	1708	-1708			0.02855618	2	-60	608		0.007749573
3	156	-308			0.06161101	4	-112	-318		0.047817789
5	-390	-328			0.01523417	6	-1358	-122		0.004661331
7	-246	1862			0.00392631	8	-495.5	-806		0.007141015
9	598	796			0.01180479	10	-350	-806		0.009901709
11	-200	-806			0.01380554	12	827.5	-1440		0.031304946
13	1059	-1530			0.03041603	14	843	-1585		0.027996406
15	679	-1527			0.02541129	16	379	639		0.012502285
17	428	-931			0.00938739					