

**NAPA COUNTY AIRPORT MASTER PLAN
DRAFT ENVIRONMENTAL ASSESSMENT
NAPA, NAPA COUNTY, CALIFORNIA
January 2008**



**Federal Lead Agency
U.S. DEPARTMENT OF TRANSPORTATION
Federal Aviation Administration
San Francisco Airports District Office**

**NAPA COUNTY AIRPORT MASTER PLAN
DRAFT ENVIRONMENTAL ASSESSMENT
NAPA, NAPA COUNTY, CALIFORNIA**

January 2008

Federal Lead Agency

U.S. Department of Transportation
Federal Aviation Administration
(650) 876-2778

Environmental Consultant

JIM WALLACE ENVIRONMENTAL CONSULTING SERVICES
233 North Andrew Avenue
Port Townsend, WA 98368
Contact: Jim Wallace
(360) 379-0623

This Environmental Assessment becomes a federal document when evaluated and signed by the responsible Federal Aviation Administration official.

Responsible FAA Official: _____ Date: _____

CONTENTS

	Page
Summary	i
Table S-1: Summary of Impacts and Mitigation Measures	
Preface	
List of Acronyms	
1.0 Purpose and Need	
Introduction	1-1
Napa County Airport Area Overview	1-2
Airport Facilities	1-3
Air Traffic	1-3
Federally Designated Critical Habitat	1-4
Purposes and Need for Airport Improvements	1-5
Schedule: Near-Term Development	1-8
Figure 1-1: Regional Location Map	
Figure 1-2: Napa County Airport	
2.0 Proposed Action and Alternatives	
Alternatives Development	2-1
Alternative 1- No Action	2-1
Airport Layout Plan	2-1
Taxiway ‘J’ Extension	2-1
Perimeter (Security) Fence	2-2
Property Acquisition: Borges Atkins	2-2
Widen Airport Road Bridge.....	2-2
Runway 6: Runway Safety Area Grading.....	2-2
Extend Runway 36R	2-2
Glide Slope Indicator	2-2
Alternative 2- Proposed Action	2-2
Airport Layout Plan	2-2
Taxiway ‘J’ Extension	2-2
Perimeter Fencing	2-3
Property Acquisition: Borges Atkins	2-3
Widen Airport Road Bridge.....	2-3
Runway 6: Runway Safety Area Grading.....	2-4
Extend Runway 36R	2-4
Glide Slope Indicator	2-4
Alternatives 3 through 9, Modified Action.....	2-5
Alternative 3: Do not extend Taxiway ‘J’	2-5
Alternative 4: Do not Construct Security Fence	2-5
Alternative 5: Do not Acquire Borges Atkins Property.....	2-5
Alternative 6: Do not Widen Airport Road Bridge.....	2-6

Contents (continued)

	Page
Alternative 7: Do not Grade RSA for Runway 6.....	2-6
Alternative 8: Do not Extend Runway 36R.....	2-6
Alternative 9: Do not install a Glide Slope Indicator	2-6
Actions Considered but Dismissed.....	2-6
Figure 2-1: Airport Layout Plan	
Figure 2-2: Existing and Proposed Condition	

3.0 Affected Environments**3.1 Noise**

Background.....	3.1-1
Federal Guidelines	3.1-1
State Guidelines and Regulations	3.1-1
Local Guidelines and Regulations	3.1-2
Airport land Use Compatibility Plan	3.1-3
Existing Conditions.....	3.1-4
Future Conditions	3.1-5
Noise and Land Use	3.1-5
Figure 3.1-1: 60 Ldn Noise Contour	
Figure 3.1-2: Noise Contours: Existing Conditions	
Figure 3.1-3: 5-Year Noise Contour – 2012	
Figure 3.1-4: Noise Contours - 2022	

3.2 Compatible Land Use

Land Ownership	3.2-1
Land Uses at the Napa County Airport.....	3.2-1
Land Uses in the Vicinity of the Napa County Airport	3.2-2
Relevant land Use Plans and Regulations.....	3.2-4
Napa County AIASP	3.2-7
Napa County ALUC	3.2-7
Napa County Zoning Ordinance	3.2-8
Land Use Compatibly	3.2-8
Table 3.2-1: Land Use Compatibility Criteria	
Figure 3.2-1: ALUC Compatibility Plan	
Figure 3.2-2: Land Uses	
Figure 3.2-3: Zoning Districts	

3.3 Socioeconomic Environmental Justice, and Children’s Health and Safety Risks

Socioeconomics	3.3-1
----------------------	-------

Contents (continued)

	Page
3.0 Affected Environments (continued)	
Environmental Justice.....	3.3-2
Induced Socioeconomic Impacts	3.3-3
Table 3.3-1 Population Trends	
3.4 Air Quality	
Climate and Meteorological Conditions	3.4-1
Federal and State Ambient Air Quality Standards	3.4-1
Air Quality Management at the State Level	3.4-1
Existing Air Quality Conditions in Napa Valley	3.4-2
Climate and Meteorological Conditions	3.4.2
Ozone	3.4-2
Carbon Monoxide	3.4-3
Inhalable Particulate Matter	3.4-3
General Conformity Threshold	3.4-4
Table 3.4-1: Air Quality Standards	
3.5 Water Quality	
Introduction.....	3.5-1
Climate – Rainfall.....	3.5-1
Surface Water.....	3.5-1
Internal Airport Drainage	3.5-2
Fagan Marsh Ecological Reserve	3.5-3
Flooding.....	3.5-4
Groundwater	3.5-4
Figure 3.5-1: Surface Water Features	
3.6 Department of Transportation Act, Section 4(f) [Recodified at 49 USC 303]	
Introduction.....	3.6-1
Fagan Marsh Ecological Reserve.....	3.6-1
3.7 Historical, Archaeological, and Cultural Resources	
Regulatory Frame Work	3.7-1
Cultural Resources Identified in the Vicinity	3.7-2
3.8 Fish, Wildlife and Plants	
Biological Resource Management	3.8-1
Federally Designated Critical Habitat.....	3.8-1
Critical Habitat: California Grassland	3.8-2
Other Biotic Communities	3.8-4
Perennial Salt Marsh	3.8-4
Seasonal Salt Marsh	3.8-5
Riparian Corridor	3.8-5
Table 3.8-1: Plant Species Compilation List	
Figure 3.8-1: Critical Habitat	

Contents (continued)

	Page
3.0 Affected Environments (continued)	
3.9 Special Status Species of Flora and Fauna	
Federally Listed Plants.....	3.9-1
Federally Listed Animals.....	3.9-3
California Endangered Species Act	3.9-8
Napa County: Conservation Management	3.9-9
Biological Assessment and Biological Opinion	3.9-10
Table 3.9-1: Federally Listed Species	
Table 3.9-2: Non-Federal Sensitive Species	
Table 3.9-3: California Sensitive Species	
3.10 Wetlands, Jurisdictional or Non-Jurisdictional	
Sheehy Creek Wetlands	3.10-1
Airport Wetlands.....	3.10-2
Interstate or Foreign Commerce Connection.....	3.10-4
Figure 3.10-1: Preliminary Wetland Delineation	
3.11 Floodplains	
Introduction.....	3.11-1
100-Year Flood Plain.....	3.11-1
Figure 3.11-1: 100-Year Flood Extent	
3.12 Coastal Resources	
Coastal Zone Management	3.12-1
Coastal Barriers.....	3.12-1
3.13 Farmlands.....	3.13-1
3.14 Wild and Scenic Rivers.....	3.14-1
3.15 Natural Resources and Energy Supply.....	3.15-1
3.16 Hazardous Materials and Solid Waste	
Hazardous Materials	3.16-1
Solid Waste	3.16-1

Contents (continued)**Page****4.0 Environmental Consequences****4.1 Noise**

Introduction.....	4.1-1
Effect 4.1-1: Construction Noise	4.1-1
Mitigation Measure 4.1-1	4.1-2
Mitigation Measure 4.1-2	4.1-2
Mitigation Measure 4.1-3	4.1-2
Effect 4.1-2: Aircraft Operations on Existing Land Uses	4.1-2
Effect 4.1-3: Aircraft Operations on Future Land Uses	4.1-3
Figure 4.1-1: Preliminary Flight Tracks	

4.2 Compatible Land Use

Introduction.....	4.2-1
Effect 4.2-1: Property Acquisitions	4.2-1
Effect 4.2-2: Potential Land Use Conflicts	4.2-1
Effect 4.2-3: Consistency with Napa County Plans.....	4.2-2
Effect 4.2-4: Change in Flight Tracks	4.2-3

4.3 Air Quality

Introduction.....	4.3-1
Effect 4.3-1: Construction Equipment Emissions	4.3-3
Mitigation Measure 4.3-1: Reduce Air Emissions	4.3-3

4.4 Water Quality

Effect 4.4-1: Direct Effects on Surface Waters	4.4-1
Effect 4.4-2: Alter Surface Water Drainage Patterns	4.4-2
Effect 4.4-3: Increased Impermeable Surfaces	4.4-2
Mitigation Measure 4.4-1: Bridge Over Fagan Creek	4.4-2
Mitigation Measure 4.4-2: Wetlands and Perennial Marsh	4.4-2
Mitigation Measure 4.4-3: Filling waters of the U.S.	4.4-2

4.5 Historical, Archaeological, and Cultural Resources

Effect 4.5-1: Impacts on Archeological Resources.....	4.5-1
Mitigation Measure 4.5-1: Halt Construction	4.5-1
Mitigation Measure 4.5-2: Applicable Laws	4.5-1

4.6 Fish, Wildlife and Plants

Introduction.....	4.6-1
Effect 4.6-1: USFWS Critical Habitat	4.6-1
Effect 4.6-2: Loss of California Annual Grassland	4.6-2
Mitigation Measure 4.6-1: Annual Grassland Habitat	4.6-3
Effect 4.6-3: Loss of Marsh Habitat	4.6-6
Mitigation Measure 4.6-2: Marsh Habitat	4.6-6
Effect 4.6-4: Riparian Corridor	4.6-10

Contents (continued)**Page****4.0 Environmental Consequences (continued)****4.7 Endangered and Threatened Species**

Special Status Species: Plants	4.7-1
Special Status Species Animals	4.7-1
Effect 4.7-1: Vernal pool fairy shrimp	4.7-1
Effect 4.7-2: California clapper rail	4.7-2
Effect 4.7-3: Salt marsh harvest mouse	4.7-2
Effect 4.7-4: California red legged frog	4.7-2
Mitigation Measure 4.7-1: Vernal pool fairy shrimp	4.7-2
Mitigation Measure 4.7-2: Clapper rail, harvest mouse	4.7-6
Effects on Non-Federal Species.....	4.7-9

4.8 Wetlands, Jurisdictional or Non-Jurisdictional

Effect 4.8-1: Loss/Impacts on waters of the U.S	4.8-1
Mitigation Measure 4.8-1: Filling waters of the U.S.....	4.8-2
Mitigation Measure 4.8-2: Preservation and Conservation	4.8-2
Mitigation Measure 4.8-3: Vernal Pools.....	4.8-3
Mitigation Measure 4.8-4: Fagan Marsh	4.8-3

4.9 Construction Impacts

Introduction.....	4.9-1
Mitigation Measure 4.9-1: Construction Activities	4.9-1
Mitigation Measure 4.9-2: Fagan Marsh	4.9-2
Mitigation Measure 4.9-3: Fagan Creek Bridge	4.9-2

5.0 Alternatives Analysis

Alternative 1 (No Action Alternative)	5-1
Alternative 2 (Proposed Action)	5-1
Alternative 3 (Eliminate Taxiway 'J')	5-3
Alternative 4 (Do Not Construct Security Fence).....	5-3
Alternative 5 (Do Not Acquire Property)	5-4
Alternative 6 (Do Not Widen Bridge Over Fagan Creek)	5-4
Alternative 7 (Do Not Grade RSA)	5-4
Alternative 8 (Do Not Extend Runway 36R).....	5-5
Alternative 9 (Do Not Install Glide Slope Indicator).....	5-5
Summary	5-5

6.0 Environmental Consequences –Other Considerations

Cumulative Effects.....	6-1
Growth Inducing Effects	6-3

Known Areas of Controversy and Issues to be Resolved6-3
Contents (continued)

7.0 References Cited

8.0 List of Preparers

9.0 Public Participation

APPENDICES: Attached under separate cover

- Appendix A: Cultural Resources
- Appendix B: 5-Year Noise Model Calculations
- Appendix C: Hazardous Materials Database Search Results
- Appendix D: Sheehy Creek Permit and Monitoring Plan
- Appendix E: Biological Assessment and Biological Opinion
- Appendix F: Land Assurance Letter

Summary

Introduction

This summary presents an overview of the environmental impacts of the proposed development described in the Napa County Airport Master Plan. This Environmental Assessment briefly describes the purposes and need, alternatives, affected environment and the environmental impact analysis of the various proposed projects. The EA also includes mitigation measures to minimize impacts to various environmental resources.

This EA is prepared pursuant to the requirements of the National Environmental Policy Act of 1969 (NEPA) as implemented by the Council on Environmental Quality (CEQ) regulations and the Federal Aviation Administration (FAA) Order 1050.1E and Order 5050.4B for the preparation of Environmental Assessments. NEPA compliance is triggered by any ‘federal action’ that impacts the human environment. The federal action analyzed in this EA is the approval of specified near term and mid term projects depicted on the Napa County Airport Layout Plan (ALP), and FAA funding for those projects. The FAA is the federal lead agency for the proposed action.

All airports participating in the National Plan of Integrated Airports are required to prepare and maintain a current ALP and Airport Capital Improvements Plan in order to receive FAA Airport Improvement Program grants. The ALP depicts existing airport facilities and proposed future airport development. One of the purposes of the ALP is to guide future physical development of the Napa County Airport. The FAA must approve the ALP prior to funding Airport project components. The ALP is necessary for implementation of the goals outlined in the Napa County Airport Master Plan (Airport Master Plan).

Purpose and Need

The overall purpose of the proposed action is to implement the goals and objectives of the Airport Master Plan by planning for and constructing elements necessary to accommodate air traffic and Airport-related development during the next 10 years. The Airport Master Plan is intended to be a 20-year planning document in which projected needs and facility requirements are identified. The Napa County Airport Master Plan of 2007 replaces and updates one adopted in 1991. The projects proposed to implement the goals and objectives of the Airport Master Plan include extending runways and taxiways, installing a glide slope indicator (Runway 36L), improving a runway safety area, constructing perimeter security fencing, acquiring property for a Runway Protection Zone (RPZ) and providing improved ground access over Fagan Creek via a new bridge. The improvements proposed by the Airport Master Plan and the purpose and need of each improvement is listed below.

Taxiways ‘J’ and ‘C’ Extensions

There are two primary purposes to extend the taxiways:

1. Taxiway ‘J’ must be extended to connect with Runways 18R-36L and 6-24 (western end). The project includes the extension of Taxiway ‘C’ between Runway 6-24 and the extension of Taxiway ‘J’.
2. The Taxiway ‘J’ extension will provide aircraft access to the future hangars and aircraft parking along the southern portion of the Airport.

The taxiway extensions are needed to:

1. Accommodate future hangar development on the southeastern portion of the Airport.
2. Accommodate the increasing prevalence of larger business jets.
3. Improve the efficiency of airport operations.

Perimeter Fencing

The primary purpose of the perimeter fencing is to provide increased security around the western portions of the Airport, areas adjacent to public property that have not historically been fenced.

Due to increased security requirements it is necessary to install a chain link fence around the western portions of the Airport, areas that have not historically been fenced. The Transportation Safety Administration (TSA) explicitly requires the fence. The TSA issues and administers Transportation Security Regulations (TSRs), which are codified in Title 49 of the Code of Federal Regulations (CFR), Chapter XII, parts 1500 through 1699. Many TSRs are former rules of the FAA that were transferred to TSA when TSA assumed FAA’s civil aviation security function on February 17, 2002.

The chain-link fence limits access by unauthorized personnel and alerts Airport management to their presence. Napa County began construction of a complete perimeter fence in 2003. A discontinuous perimeter fence existed prior to September 2001, primarily along the eastern side of the Airport. Between 2002 and 2005, the Airport constructed the fence along the northern, southern and portions of the western property boundary. The fence, when completed will serve as a security element and will prevent wildlife (primarily deer) from entering active portions of the Airport.

Property Acquisition – Borges Atkins Property

The primary purpose to acquire the Borges-Atkins property is to gain land use control over the parcel that lies south of the Airport between the FAA tower and Runway 18L-36R.

This 24-acre parcel is needed to ensure that there are no land use conflicts within the 34:1 approach slope in the RPZ for Runway 18L-36R.

Napa County has a legal obligation via their grant assurances to ensure land use compatibility through zoning. Therefore, in accordance with FAA AC150/5300-13, paragraph 212, the FAA recommends control of the RPZ through the acquisition of sufficient property interest in the RPZ to prevent incompatible object and activities. Acquisition of the property will satisfy FAA requirements.

Widen Airport Road and Bridge over Fagan Creek

The primary purpose of this project is to widen the existing 24-foot wide bridge over Fagan Creek, Airport Road, which serves as the primary access to the Airport.

The widening project, originally proposed in 1991, is needed to meet the design requirements of Napa County and CalTrans to include a bridge width of at least 45 feet to accommodate increased traffic and bike lanes.

Runway Safety Area: Runway 6,

The primary purpose of this project is to begin to meet current FAA standards for Airport Reference Code (ARC) C-II facilities. Napa County Airport is currently an ARC-II facility for Runway 6. An ATC C-II airport is required to provide Runway Safety Areas (RSA) at the end of each runway. The RSA is needed to provide a measure of safety in the event of an aircraft excursion from the runway by significantly reducing the extent of personal injuries and aircraft damage during overruns, undershoots and veer-offs. The current FAA standard for an ARC C-II RSA is 500 feet wide by 1,000 feet long.

Currently, the Runway 6 RSA is about 200 feet long and 450 feet wide. The proposed project does not increase the current dimensions; it provides a graded area at the end of Runway 6 that is constrained by its location near the western Airport boundary.

Extend Runway 18L-36R Southward

There are two primary purposes for the runway extension:

1. To reduce congestion and delays on Runway 18R-36L (main runway);
2. Reduce the frequency of overflights of residential areas located west of the Airport.

Install Glide Slope Indicator for Approach on Runway 36L

Runway 18R-36L is Napa Airport's main runway. The glide slope indicator and distance measuring equipment (DME), when used in conjunction with the existing localizer, comprise an instrument landing system (ILS) that enables aircraft to fly precision approaches to Runway 36L. The glide slope indicator provides pilots with information regarding the proper descent path for the aircraft, typically a 3° descent. The DME provides pilots with a known fix to determine their distance from the Airport.

Napa Airport needs to install an ILS to provide safe aircraft approaches to Runway 36L. This ILS approach allows aircraft to land in poor weather conditions. Adding the ILS on Runway 36L will increase the amount of time the airport is open during poor weather conditions, and will provide a precision instrument approach when either Runway 6-24 or 18L-36R is closed due to construction or because of weather conditions.

Construction Schedule

Near-Term Projects (within 5 years)

- Perimeter Fencing: most fencing has been completed except through designated critical habitats
- Land acquisition: Borges Atkins property
- Runway 18L-36R extension
- Glide slope indicator

Mid-Range Projects (within 10 years)

- Taxiway 'J' extension
- Airport Access: new bridge over Fagan Creek
- Runway Safety Area, Runway 6

Reasonably Foreseeable Actions

The seven projects (action) described above and referenced throughout this environmental assessment including those which are planned “mid-term projects” are reasonably foreseeable as defined in Order 5050.4B (Chapter 1, Paragraph q):

A reasonably foreseeable action is defined for an on-airport action as one that the proponent would likely complete and that has been developed with enough specificity to provide meaningful information to a decision maker and the interested public.

[The mid-term projects] would affect all, some or one of the environmental resources that the proposed action would affect. (Therefore are included in this EA.)

According to FAA Order 1050.1E Paragraph 402 a and b:

A draft EA may be assumed valid for a period of three years. If the approving official has not issued an EA/FONSI within three years of receipt of the final EA, a written reevaluation of the draft must be prepared by the responsible FAA official to determine whether the considerations of alternatives, impacts, existing environment, and mitigation measures set forth in the EA remain applicable, accurate, and valid. If there have been changes in these factors that would be significant in the consideration of the proposal, a supplement to the EA or a new EA must be prepared in accordance with the procedures of this chapter.

For approved EA’s, two sets of conditions have been established:

- (1) If major steps toward implementation of the proposed action (such as the start of construction, substantial acquisition, or relocation activities) have not commenced within three years from the date of the issuance of the FONSI, a written reevaluation of the adequacy, accuracy, and validity of the EA will be prepared by the responsible FAA official. If there have been significant changes in the proposed action, the affected environment, anticipated impacts, or proposed mitigation measures, as appropriate, a new or supplemental EA will be prepared in accordance with the procedures of this chapter.
- (2) If the proposed action is to be implemented in stages or requires successive Federal approvals, a written reevaluation of the continued adequacy, accuracy, and validity of the EA will be made at each major approval point that occurs more than

three years after issuance of the FONSI and a new or supplemental EA prepared, if necessary.

Effects of the Proposed Project

This EA examines in detail all potentially adverse effects of the proposed action and recommends mitigation measures to reduce the severity of the effects where feasible. A summary of the environmental effects of the proposed action is presented in Table S-1. The table indicates the significance of each impact before mitigation, identifies appropriate mitigation measures, and lists the significance of each impact assuming implementation of the mitigation measures.

Agencies that May Use this Document

This document may be used by agencies other than the FAA. These agencies may include responsible or trustee agencies that also have review authority over the proposed action, including Napa County. The anticipated approvals for the proposed action are listed below. Other approvals for the proposed action may be required as the proposed action is implemented: this EA will serve as the environmental review document for other approvals that may be necessary or desirable.

Federal Agencies

- FAA – unconditional approval of the ALP, and approval of forecasts contained in the Napa County Airport Master Plan (2007)
- U.S. Army Corps of Engineers (Corps) – issuance of a Section 404 permit under the federal Clean Water Act
- U.S. Fish and Wildlife Service (USFWS) – issuance of a biological opinion for the effects on special status species and designated critical habitat

State Agencies

- Regional Water Quality Control Board (RWQCB) – issuance of a Section 401 water quality certification under the Clean Water Act, and issuance of a construction activity storm water permit
- California Department of Transportation (CalTrans) Division of Aeronautics – approval of airport development and bridge design

Local Agencies

- Napa County – overall approval of the proposed action, funding for construction projects and construction activities.

Table S-1: Summary of Impacts and Mitigation Measures

Note: There are no impacts resulting from the proposed action on the following environmental categories: Socioeconomics, Cultural Resources, DOT 303, Floodplains, Coastal Resources, Farmlands, Wild and Scenic Rivers, Energy Supplies, Hazardous Materials

Effect	Before Mitigation	Mitigation Measure	After Mitigation
4.1 Noise			
4.1-1: Construction Noise	Adverse	4.1-1: Employ Sound Control Devices on Engines 4.1-2 Shut off Equipment When Not in Use 4.1-3: Notify Business of Construction Schedule	Minor Minor Minor
4.1-2: Aircraft Operations Noise Effects on Existing Land Uses	Minor	None recommended: Enforce existing land use policies	
4.1-3 Aircraft Operations Noise Effects on Future Land Uses	Minor	None recommended: Enforce existing land use policies	
4.2 Compatible Land Use			
4.2-1 Property Acquisition	No adverse effect	None recommended	
4.2-2 Potential Land Use Conflicts	No adverse effect	None recommended	
4.2-3 Consistency with Napa County Plans and Zoning	No adverse effect	None recommended	
4.2-4 Change in Flight Tracks	No adverse effect	None recommended	

Table S-1: Summary of Impacts and Mitigation Measures

Effect	Before Mitigation	Mitigation Measure	After Mitigation
4.3 Air Quality			
4.3-1 Construction Equipment Emissions	Adverse	None recommended beyond existing air pollution control devices	Minor
Overall Construction effects	Adverse	4.3-1: 1. Water all active construction sites at least twice daily, except when naturally wet. 2. Limit on-site vehicle speed to less than or equal to 15 mph. 3. Suspend all construction activities when ambient wind speeds exceed 20 mph. 4. Plant vegetative cover on disturbed areas as soon as possible after work is completed using the grass mix currently applied to the Airport by the Napa Sanitation District. 5. Cover inactive storage piles, or stabilize such piles through watering of dust suppression agents. 6. Sweep or wash paved streets adjacent to or used as access to the construction site each day. 7. Post a sign visible to the public that gives the telephone number and name of the site contact regarding dust complaints. 8. Prior to project final approval, cover, landscape, or stabilize all disturbed ground surfaces to minimize dust emissions.	Minor

Table S-1: Summary of Impacts and Mitigation Measures

Effect	Before Mitigation	Mitigation Measure	After Mitigation
4.4 Water Quality			
4.4-1 Direct Effects on Surface Water Resources	Adverse	4.4-1: Implement design and construction techniques to minimize impacts of bridge over Fagan Creek	Minor
4.4-2 Alter surface water drainage patterns	Adverse	4.4-2 See Mitigation Measure 4.4-3	Minor
4.4-3 Increased Impermeable Surface	No adverse effect	4.4-3 Filling waters of the U.S.	Minor
		See mitigation measure 4.4-3	Minor
		None recommended	
4.5 Historical, Archaeological, and Cultural Resources			
4.5-1 Impacts on Archaeological Resources	Adverse	4.5-1: Halt construction if resources discovered	Minor
		4.5-2: Stop work and comply with applicable laws if human remains are found	Minor
4.6 Fish, Wildlife and Plants			
4.6-1 USFWS Designated Critical Habitat Unit 17	Adverse	4.6-1: Implement mitigation measures in accordance with USFWS biological opinion	Minor
4.6-2 Loss of California annual grassland	Adverse	4.6-1: Implement mitigation measures in accordance with USFWS biological opinion	Minor
4.6-3 Loss of Marsh Habitat	Adverse	4.6-2: Implement mitigation measures in accordance with USFWS biological opinion	Minor
4.6-4 Riparian Corridor	No adverse effect	None recommended	

Table S 1: Summary of Impacts and Mitigation Measures

Effect	Before Mitigation	Mitigation Measure	After Mitigation
4.7 Endangered and Threatened Species			
4.7-1 Vernal pool fairy shrimp	Adverse	4.7-1: Implement mitigation measures in accordance with USFWS biological opinion	Minor
4.7-2 California clapper rail	Adverse	4.7-2: Implement mitigation measures in accordance with USFWS biological opinion	Minor
4.7-3 Salt marsh harvest mouse	Adverse	4.7-2: Implement mitigation measures in accordance with USFWS biological opinion	Minor
4.7-3 California red legged frog	No adverse effect	None recommended	
4.8 Wetlands, jurisdictional or non-jurisdictional			
4.8-1 Loss of, and impact on, jurisdictional waters of the U.S.	Adverse	4.8-1: See mitigation measure 4.4-3	Minor
		4.8-2: Preservation, conservation, mitigation and management of sensitive resources	Minor
		4.8-3: Impacts to Vernal Pool Fairy Shrimp – see Mitigation Measure 4.6-1.	Minor
		4.8-4: Impacts to Fagan Marsh – see Mitigation Measure 4-6.2	Minor
4.9 Construction Impacts			
	Adverse	4.9-1: General Mitigation measures for construction activities	Minor
		4.9-2: Specific mitigation measure for security fence construction	Minor
		4.9-3: Specific mitigation measure for Fagan Creek bridge construction	Minor

Note: There are no impacts resulting from the proposed action on the following environmental categories: Socioeconomics, Cultural Resources, DOT 303, Floodplains, Coastal Resources, Farmlands, Wild and Scenic Rivers, Energy Supplies, Hazardous Materials

Preface

This draft environmental assessment (DEA) has been prepared pursuant to the requirements of the National Environmental Policy Act of 1969 (NEPA) as implemented by the Federal Aviation Administration (FAA) Order 1050.1E and FAA Order 5050.4B for the preparation of environmental assessments.

LIST OF ACRONYMS

ALP	Airport Layout Plan
ALUC	Airport Land Use Commission
ALUCP	Airport Land Use Commission Plan
ARC	Airport Resource Code
BA	Biological Assessment
BO	Biological Opinion
Caltrans	California Department of Transportation
CCAA	California Clean Air Act of 1988
CEQA	California Environmental Quality Act
CDFG	California Department of Fish and Game
CHRIS	California Historical Resources Information System
CLUP	Comprehensive Land Use Plan
CNDDDB	California Natural Diversity Database
CNEL	Community Noise Equivalent Level
CNPS	California Native Plant Society
CO	Carbon Monoxide
dB	Decibels
dBA	A-weighted decibel scale
DME	Distance measuring equipment
EA	Environmental Assessment (National Environmental Policy Act)
EO	Executive Order
FAA	Federal Aviation Administration – US Department of Transportation
FBO	Fixed Based Operator
INM	Integrated Noise Model
ILS	Instrument Landing System
ISR	Indirect Source Review
Ldn	Day-night average (noise) level
Leq	Weighted nighttime noise exposure
NEPA	National Environmental Policy Act
NOx	Nitrogen Oxide
NPDES	National Pollution Discharge Elimination System
NPIAS	National Plan of Integrated Airport Systems
NHPA	National Historic Preservation Act
NRHP	National Registry of Historic Places
PM	Particulate Matter
RPZ	Runway protection Zone
RSA	Runway Safety Area
RWQCB	Regional Water Quality Control Board (State of California)
SHPO	State Historic Preservation Officer
SWPPP	Stormwater Pollution Prevention Plan
USACOE	United States Army Corps of Engineers
USFWS	United States Fish and Wildlife Service

1.0 Purpose and Need

Introduction

Napa County Airport (Airport) was originally proposed by the U.S. military during World War II. Although Airport construction was not completed, Airport ownership was transferred to Napa County and is now a subdivision under the Napa County Department of Public Works (Department of Public Works). The Department of Public Works oversees all Airport development projects. The Airport manager, who reports to the Department of Public Works, manages the Napa County Airport under the jurisdiction of the Napa County Board of Supervisors (Board of Supervisors).

The Board of Supervisors appoints a ten-member Airport Advisory Commission (Commission). The Commission periodically reports to the Board of Supervisors on activities of the Airport, and also advises and makes recommendations on matters pertaining to Airport operations; maintaining and improving Airport safety; a master plan for Airport development; the annual Airport budget; and leases, rates and charges for all Airport facilities. The ten-member Commission consists of seven members who are appointed from the general public and the remaining three members consist of one representative from the Napa Chamber of Commerce, one commercial aviation operator who is located at the Airport, and one representative from the Airport.

In 2004, the Board of Supervisors and the Commission accepted for consideration and approval an updated Airport Master Plan [pending]. The updated Airport Master Plan recommends future development programs and improvements to the Airport that includes:

- Extending Taxiways 'J' and 'C' (Extend Taxiway 'J' approximately 2,500 feet west to tie with Runway 36L; extend Taxiway 'C' between Runway 6-24 and the Taxiway 'J' extension);
- Installing perimeter fencing;
- Acquiring Runway Protection Zone (RPZ) property south of Taxiway 'J' – Borges Atkins (South end of Runway 36R extension);
- Widening the Airport Road and bridge at Fagan Creek including utility relocation
- Runway Safety Area Grading at Runway 6 (Approximately 2.25+/- acres);
- Extending Runway 36R southward a distance of 1,500 feet to connect to Taxiway 'J', and
- Installing glide slope antenna for the approach to Runway 36L.

The Federal Aviation Administration (FAA) administers the Airport Improvement Program (AIP) that finances eligible aviation facility improvements. All airports are required to prepare and maintain a current ALP in order to receive federal funding under the AIP. Napa County, through the Board of Supervisors, intends to request funding from the FAA to construct the projects identified in the updated Airport Master Plan (2007). The FAA's review of the Airport Layout Plan (ALP) and review of the funding request subjects the proposed projects to the provisions of the National Environmental Policy Act (NEPA) and thereby requires the preparation of an environmental assessment (EA).

This EA is prepared in accordance with NEPA, the Council on Environmental Quality (CEQ) regulations (Title 40, Code of Federal Regulations Parts 1500-1508), FAA Order 1050.1E (*Policies and Procedures for Considering Environmental Impacts*), and FAA Order 5050.4B. This EA analyzes and documents the potential environmental impacts of implementing the proposed projects, and identifies mitigation measures that may be necessary to reduce the magnitude of those impacts. This EA is prepared to provide the community with full disclosure of the proposed project and to assist the FAA in making funding recommendations.

Napa County Airport Area Overview

Napa County Airport is located in southern Napa County near the intersection of State Route 29 and State Route 12, approximately five miles south of the Napa City limits and three miles north of the City of Vallejo and the Solano County line (Figure 1-1). The Airport was originally constructed in 1942 by the Army Corps of Engineers on land owned by Napa County. The Airport construction was intended to establish an air base for national defense. However, the military construction was never fully completed and in 1945, the land and Airport facilities were conveyed to the County for civilian use.

Today, former salt evaporation ponds and marshland bound the Airport on the west; on the northwest by a wastewater treatment facility (approximately one mile northwest of Runway18R-36L); on the east by industrial and commercial developments and on the south and southwest by undeveloped agricultural lands that are zoned for industrial use. Land surrounding the Airport is zoned and planned to insure safe and aviation compatible land uses.

Land west and north of the Airport is zoned agriculture and open space and includes former salt ponds, marshland and a wastewater treatment facility. The areas east and south of the Airport are zoned business/industrial park and general industrial. The County has also designated “clear zones” and “approach zones” at or near the end of all runways. These zones carry special land use requirements that prohibit construction of structures that would interfere with safe aircraft operations. Land uses in the vicinity of the Airport are designated in the Napa County General Plan and the County zoning ordinance. The Airport Land Use Commission (ALUC), the Napa County Planning Department and the Board of Supervisors review proposed land uses. The Board of Supervisors has authority to approve land uses and development in unincorporated Napa County.

The Airport site is a low-lying area at an elevation of approximately 10 to 35 feet above mean sea level. Much of the Airport has been constructed on fill, probably placed during its early construction period in the 1940’s. The western and southern perimeters of the Airport include tidally influenced salt marshes. Much of the Airport drains into these salt marshes and ultimately to the lower reaches of the Napa River. Fagan Creek drains the eastern, northern and northwestern portions of the Airport, although it is channelized and/or culverted through nearly its entire length across the Airport.

The Airport is approximately five miles north of San Pablo Bay, a portion of the San Francisco Bay, and is one mile east of the Napa River. The Airport is not within the jurisdiction of the San Francisco Bay Conservation District Commission (BCDC). The BCDC jurisdiction extends up the Napa River to Bull Island, approximately one mile west of the Airport.

Airport Facilities

Napa County Airport has a triangular configuration (Figure 1-2) with the primary taxiway (Taxiway A) forming the base of the triangle and the intersection of the two main runways:

- Runway 6-24: 5,008 feet long, 150 feet wide; Aircraft regularly using the runway – Airport Reference Code (ARC) C-II, anticipated increased use by ARC C-III aircraft.
- Runway 18R-36L (main runway): 5,932 feet long, 150 feet wide; Aircraft regularly using the runway -ARC C-II, anticipated increased use by ARC C-III aircraft.
- A third runway, Runway 18L-36R parallels 18R-36L: 2,500 feet long, 75 feet wide; due to the runway length, most aircraft are designated ARC A-I.

The Airport's building area is divided into two general areas: 1) the existing developed area on the east side of the airfield which includes the Fixed Based Operator (FBO), Japan Airlines pilot training facilities, general aviation terminal building with Airport offices and a restaurant, and 2) the south side of the airfield adjoining Runway 6-24, which includes the California Highway Patrol flight operations facilities and the FAA control tower.

There are two public aircraft parking aprons within the core building area and a private ramp leased to Japan Airlines for their pilot training facilities.

Air Traffic

Napa County Airport serves general aviation aircraft, it is a significant location for commercial and private pilot training and is designated a reliever airport for various airports in the San Francisco Bay Area. The Airport serves one of the most attractive recreational areas in Northern California, the world famous wine producing regions of the Napa Valley.

Currently there are 222 fixed wing aircraft and two helicopters based at the Airport. Forecasts in the Updated Airport Master Plan indicate that the total number of aircraft to be based at the Airport by the year 2021 will be between 290 and 320. The majority of aircraft will be single-engine (Airport Master Plan, 2007).

Annual operations at the Airport, which include take-offs and landings, are currently 126,808. The projected operations are expected to increase to between 210,000 and 260,000 annually by the year 2021 (Airport Master Plan, 2007).

Federally Designated Critical Habitat on Napa County Airport

The U.S. Fish and Wildlife Service (USFWS) has designated most of the Napa County Airport as Critical Habitat for Vernal pool fairy shrimp (*Branchinecta lynchi*) in accordance with the Endangered Species Act (ESA) (Federal Register Notice February 10, 2006, Volume 71, No. 28).

During preparation of this EA, the FAA prepared a biological assessment (BA) (April 2006; Appendix E of this EA) to review near term projects proposed in the Napa County Airport Master Plan (2007) in sufficient detail to determine to what extent the proposed action may affect any of the threatened, endangered, proposed, or sensitive species that might occur on the Airport. The BA was prepared in accordance with legal requirements set forth under Section 7 of the Endangered Species Act (16 U.S.C. 1536 (c)), and followed the standards established in the Federal Aviation Administration's implementation of the National Environmental Policy Act and ESA guidance.

Following review of the BA and consultation with the FAA, the USFWS issued a biological opinion (BO) (October 2006; Appendix E of this EA). The USFWS determined that the proposed action is not likely to adversely affect the Vernal pool fairy shrimp *per se*. However, the USFWS also determined that the proposed projects are likely to adversely affect three other federally protected species suspected of being present on the Airport – California clapper rail, salt marsh harvest mouse and soft bird's beak, and vernal pool fairy shrimp critical habitat.

As a result of the consultations between the FAA and the USFWS, the FAA agreed to a series of conservation measures to protect critical habitat and federally listed species. Those conservation measures are included as part of the biological opinion and will be applied to projects within the designated critical habitat.

Based on results contained within the BO and in accordance with FAA Order 5050.4B (Paragraph 702.g.) the proposed extension of Runway 18L-36R is considered a major runway extension. The FAA has made this EA available for public review and comment (Section 9.0 Public Participation).

Purposes and Need for Airport Improvements

Airside facilities need to be improved to accommodate existing and future aviation services to meet FAA and U.S. Transportation Safety Administration (TSA) requirements that improve safety and assure the economic vitality of the Airport. Napa County proposes to make the following improvements to the Airport within ten years:

Taxiways 'J' and 'C' Extensions: Extend the existing portion of Taxiway 'J' approximately 2,500 feet west to tie with Runway 36L. The project includes the extension of Taxiway 'C' between Runway 6-24 and the extension of Taxiway 'J'. The proposed extension of Taxiway 'J' may support future, but as yet not proposed or planned, hangars and aircraft parking areas in the southern portion of the Airport.

The Airport is generally well served by its existing taxiway system. The taxiway improvements recommended in the Updated Airport Master Plan (2007) are based on using the Global Express Aircraft as the critical design aircraft (ARC C-III, wingspan 94 feet, gross weight, 95,250 pounds; no other areas of the airport require improvements to meet ADG C-III design standards). The Global Express is a twin-engine business jet that represents the anticipated aircraft mix for future Airport operations. Proposed taxiway improvements are needed:

1. To accommodate hangar development on the south side of the Airport. The updated and previous Airport Master Plans recommend a southern parallel taxiway to Runway 6-24 to support increased hangar development along the southern portion of the Airport, the only available undeveloped land suitable for hangar construction. A portion of Taxiway 'J' was constructed parallel to Runway 6-24 along its eastern end. The proposed extension of Taxiway 'J' to the west to tie with the southern end of Runway 36L satisfies the recommendation of the updated and previous Airport Master Plan to support hangar development in the southern portion of the Airport.

Projected aviation forecasts as approved by the FAA indicate that the number of based aircraft will increase from its current level of 224 to between 290 and 320 by the year 2021. The demand for hangar space is increasing as aircraft owners seek space to store their aircraft. As the cost of aircraft and their operations and maintenance increase, aircraft owners seek hangar space to protect their investments. Currently there are 137 hangar spaces on the Airport. The forecast estimates that the demand for hangar space will increase to between 290 and 320 by the year 2021. The only available land suitable for future hangar development is in the southern portion of the Airport adjacent to the proposed extension of Taxiway 'J'.

2. To accommodate the increasing prevalence of larger business jets. The taxiway improvements needed to accommodate the Global Express critical aircraft fall into two categories: additional pavement strength and additional pavement fillet at taxiway intersections. The critical design aircraft

has a gross weight of 94,250 pounds and the taxiway improvements include additional pavement strength of 100,000 pounds. The Updated Airport Master Plan recommends an ongoing pavement strength program on all main taxiways. These proposed improvements are long-term recommendations, generally scheduled within eight to ten years.

3. To improve the efficiency of airport operations.

The Taxiway 'C' extension provides a third taxiway connection along Runway 6-24 and connects to Taxiway 'J' and the southern portion of the Airport. The extension of Taxiway 'C' to Taxiway 'J' completes a taxiway that connects with the primary transient aircraft parking on the eastern portion of the Airport and provides a more efficient aircraft taxiway route to Runway 36L.

Perimeter fencing: Due to increased security requirements it is necessary to install a chain link fence around the western portions of the Airport, areas that have not historically been fenced. The Transportation Security Administration (TSA) explicitly requires the fence. The TSA issues and administers Transportation Security Regulations (TSRs), which are codified in Title 49 of the Code of Federal Regulations (CFR), Chapter XII, parts 1500 through 1699. Many TSRs are former rules of the FAA that were transferred to TSA when TSA assumed FAA's civil aviation security function on February 17, 2002.

The fence will limit Airport access by unauthorized personnel and will help alert Airport management to their presence. The fence will reduce wildlife access to active areas within the Airport. The proposed fence, along the Airport's western boundary, crosses through, or near, potentially environmentally sensitive marsh habitat. The seven-foot high fence will assist in limiting wildlife (primarily deer) access to active portions of the Airport.

Property Acquisition South of Taxiway 'J' – Borges Atkins property near the south end of Runway 36R: The Runway Protection Zone (RPZ) at the end of the proposed extension of Runway 36R must meet current FAA standards for ARC C-II facilities (250 feet inner width; 450 feet outer width and extending 1,000 feet). The RPZ is trapezoidal in shape and begins 200 feet beyond the end of the area usable for takeoff or landing. The RPZ is an integral part of the runway environment. RPZ dimensions are established in FAA AC 150/5300-13, Airport Design, and are based on the ARC. The RPZ is intended to provide a measure of safety from obstructions penetrating airspace as aircraft either land or takeoff. Therefore, the Airport must purchase the property that lies adjacent to its current property boundary to ensure a permanent RPZ. Napa County has a legal obligation through their FAA grant assurances to ensure land use compatibility through zoning. Under FAA AC 150/5300-13, paragraph 212, the FAA recommends control of the RPZ through the acquisition of sufficient property interest in the RPZ to prevent incompatible objects and activities.

Widen Airport Road and Bridge at Fagan Creek and relocate utilities: The existing 24 foot wide bridge over Fagan Creek, Airport Road, serves as the primary access to the Airport. Napa County Department of Public Works has determined that the existing bridge does not have the carrying capacity for increased vehicular traffic. The County has recommended bridge replacement since 1991 when it was determined that the bridge was under-designed. The bridge currently accommodates a narrow two-lane vehicle traffic pattern and also carries utility conduits. A new 45 foot wide bridge is necessary to meet the design requirements of Napa County and CalTrans to accommodate existing and increased traffic and bike lanes. The utilities that cross Fagan Creek on the bridge and serve the Airport will be reinstalled as part of new bridge construction.

Safety Grading Runway 6, approximately 2.25+/- acres: The Runway Safety Area (RSA) at the end of Runway 6 (west end of Runway 6-24) needs to be improved. The RSA should conform to dimensions and design criteria set forth in FAA Advisory Circular (AC) 150/5300-13. The RSA is intended to provide a measure of safety in the event of an aircraft excursion from the runway by significantly reducing the extent of personal injury and aircraft damage during overruns, undershoots and veer-offs. The RSA should be 500-feet wide and 1,000 feet long. However there is not enough area on Airport property to meet AC 150/5300-13 design criteria. The existing RSA is approximately 450 wide and 250 feet in length (approximately 20% of the FAA standard length for an RSA at an ARC C-II facility) and requires grading to remove uneven natural surfaces and therefore provide a relatively 'smooth' surface for aircraft run-offs. The RSA will provide a measure of safety and will extend to within about 75 feet of the Airport's western property boundary.

Extend Runway 18L and connect it to Taxiway 'J': Runway 18L-36R is currently 2,500 feet long and is used, in part, as a training runway generally for private pilots using single-engine piston aircraft.

The proposed runway improvements extend the length of Runway 18L-36R to 4,000 feet. The extension will intersect Taxiway 'J' and provide a runway that supports training and general aviation aircraft operations by most single-engine piston aircraft and small twin-engine piston aircraft (ARC B-I small) The runway extension will have three primary benefits – 1) Improve safety and reduce congestion and delays on Runway 18R-36L; 2) Reduce over flights of residential areas west of the Airport and, 3) Provide improved taxiway connections, particularly in the southern portions of the Airport.

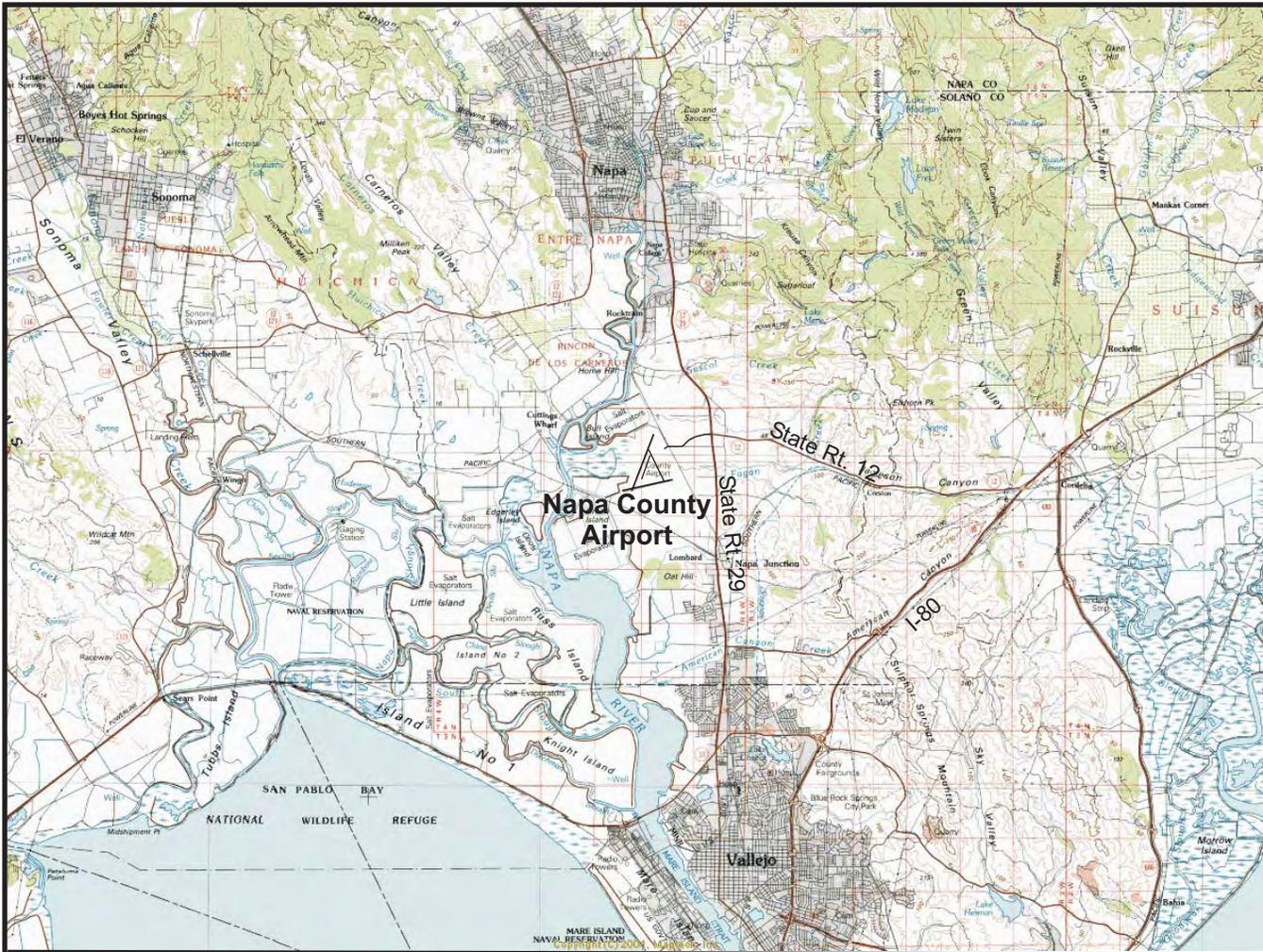
Install glide slope antenna for the approach to Runway 36L: Runway 18R-36L is Napa Airport's main runway. The glide slope indicator and distance measuring equipment (DME), when used in conjunction with the existing localizer, comprise an instrument landing system (ILS) that enables aircraft to fly precision approaches to Runway 36L. The glide slope indicator provides pilots with information regarding the proper descent path for the aircraft, typically a 3° descent. The DME provides pilots with a known fix to determine their distance from the Airport.

Napa Airport needs to install an ILS to provide safe aircraft approaches to Runway 36L. This ILS approach allows aircraft to land in poor weather conditions. Adding the ILS on Runway 36L will increase the amount of time the airport is open during poor weather conditions, and will provide a precision instrument approach when either Runway 6-24 or 18L-36R is closed due to construction or because of weather conditions.

Schedule: Near-Term Development

The Updated Airport Master Plan identifies the timeframe for the proposed projects:

- Taxiway 'J' Extension– 5 to10 years:
- Perimeter Fencing Phases I and II – 0 to 5 years:
- Property Acquisition for RPZ South of Taxiway 'J' – Borges Atkins - 0 to 5 years:
- Widen Airport Road and Bridge over Fagan Creek - 5 to 10 years
- RSA Grading Runway 6 - 5 to 10 years:
- Extend Runway 18L - 0 to 5 years, and
- Install glide slope antenna for the approach to Runway 36L - 0-5 years.

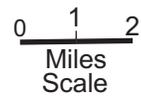


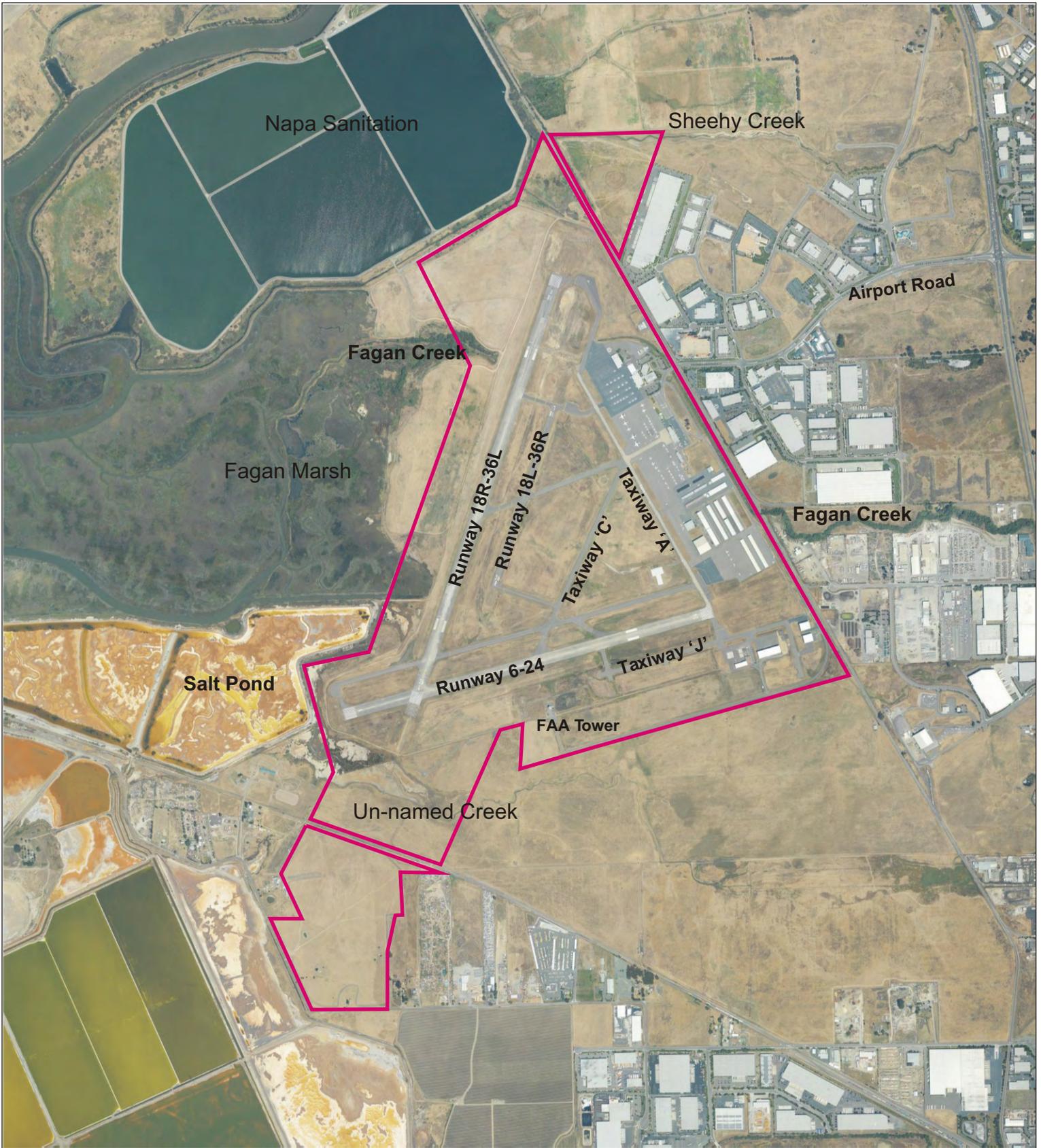
Regional Location Map
Napa County Airport

Napa County Airport Master Plan
Draft Environmental Assessment
December 2007



Figure 1-1





Napa County Airport

Napa County Airport Master Plan
 Draft Environmental Assessment
 December 2007



NORTH

Scale: Approx. 1" = 1,600'

Figure 1-2

Property Boundary

Aerial photography by Geoimagery, Auburn, California

2.0 Proposed Action and Alternatives

Alternatives Development

In 1991, the Napa County Board of Supervisors adopted an update to the *Napa County Airport Master Plan*. The 1991 Airport Master Plan addressed airport capital improvements for a period of twenty years. The 2007 updated Airport Master Plan addresses many of those same projects and is subject to environmental review and compliance under NEPA as implemented by the Council on Environmental Quality regulations, FAA Order 1050.1E, and FAA Order 5050.4B.

The FAA's review of the ALP and review of funding request subjects the proposed projects to the provisions of NEPA and thereby requires the preparation of an EA. The FAA must assess environmental effects at the Napa County Airport associated with federally funded airport improvement projects including seven near term projects proposed in the updated *Napa County Airport Master Plan* (Mead & Hunt, 2007).

An EA must consider and describe alternatives to the proposed action that are commensurate with the nature of the proposed action. An EA must describe a range of reasonable alternatives that could feasibly satisfy the action's basic objectives and reduce the environmental impacts of the action. Generally, the greater the degree of potential environmental impacts, the wider the range of alternatives that should be considered to avoid or minimize those impacts.

Alternative 1 – No Action

Under the No Action alternative, the Airport would not proceed with any proposed action and would maintain its current configuration under its existing ALP. Maintenance activities necessary to ensure that the Airport continues to meet FAA standards would be completed as required.

Airport Layout Plan

The ALP would be revised to reflect only the current conditions at the Airport.

Taxiway 'J' Extension

Taxiway 'J' would remain 1,600 feet in length and serve only the east end of Runway 6-24. It would not connect with Runways 36L or 36R.

Perimeter (Security) Fencing

Completion of perimeter fencing would be eliminated. Under this alternative the perimeter fencing adjacent to public lands would be eliminated.

Property Acquisition: Borges Atkins

Property acquisition would not be completed and the Airport would not have land use control over a portion of the RPZ for Runway 36R.

Widen Airport Road Bridge Over Fagan Creek

A new, wider bridge to match the existing width of Airport Road over Fagan Creek, the entrance onto the Airport, would not be completed.

Runway 6: Runway Safety Area Grading

Safety grading at the west end of Runway 6 would not be completed.

Extend Runway 36R

Runway 36R would remain 2,500 feet in length and would not connect with the proposed Taxiway 'J' extension.

Install Glide Slope Indicator

The FAA and Napa County would not install a glide slope indicator to be used in conjunction with the existing localizer to provide an ILS.

Alternative 2 (Proposed Action)

Airport Layout Plan (ALP)

The proposed action would involve unconditional approval of a revised ALP. The ALP encompasses the proposed extension of Taxiway 'J', perimeter security fencing, acquisition of 25.4 acres south of the Airport, widening the Fagan Creek bridge on Airport Road, Runway 6 runway safety grading (approximately 100,000 square feet), extending Runway 36R to the proposed extension of Taxiway 'J' (approximately 2,500 feet), and installing a glide slope indication for the approach to Runway 36L (Figures 2-1 and 2-2).

Extend Taxiway 'J'

The 2004 Airport Master Plan Update includes a provision to extend Taxiway 'J', the southern parallel taxiway to Runway 6-24, west to the southern end of

Runway 36L. It would also connect to the proposed extension of Runway 36R. The completed taxiway extension would maintain its current width of 50 feet and would extend from the existing end of the taxiway an additional 2,500 feet to the west. One taxiway connection is also planned: a southern extension of Taxiway 'C'.

The Taxiway 'J' extension provides a completed southern parallel taxiway (Taxiway 'H' provides full length northern parallel taxiway) for access to the southern portion of the Airport. There is a seasonal swale (refer to Section 3.11) between the runway and Taxiway 'J'. The taxiway extension crosses the swale near its western connection with Runway 36R. The swale, which carries surface water runoff from the southern portion of the Airport into an un-named creek, would cross under the taxiway in a culvert. The culvert under the taxiway would replace about 300 linear feet of the swale.

The southern extension of Taxiway 'C', to its connection with Taxiway 'J', also crosses the seasonal swale. The swale would cross under Taxiway 'C' in a culvert for a distance of approximately 75 linear feet.

Perimeter Fencing

Due to increased security requirements at general aviation airports, the TSA recommends a chain link fence around the Airport, including along the western portions of the Airport, areas that have not historically been fenced. The fence will limit Airport access by unauthorized personnel and will alert Airport management to their presence. The seven-foot fence impedes large mammals, primarily deer, from entering active portions of the airfield. Deer on active runways and taxiways pose a safety risk to humans and aircraft.

The proposed fence, along the Airport's western boundary, crosses through, or near, potentially environmentally sensitive marsh habitat. This fence line is adjacent to public lands (Fagan Marsh Ecological Reserve).

Property Acquisition: Borges Atkins Property

This 25.4-acre property south of Taxiway 'J' and between the FAA tower and Runway 36R provides the Airport with a portion of the RPZ for Runways 36L and 36R, and a reasonable guarantee that no incompatible land uses will be allowed on the property.

Widen Airport Road Bridge Over Fagan Creek

The only vehicular entrance to the Airport is via Airport Road, which crosses a channelized section of Fagan Creek on a two-lane (24-foot wide) bridge. The bridge is too narrow to effectively serve as the main entrance to the Airport and does not match the existing width of Airport Road. The bridge will be replaced

with one that functionally and esthetically serves as an entry to the Airport. The wider bridge will accommodate vehicular and bicycle traffic and will match the existing width of Airport Road and will be designed and constructed to CalTrans and Napa County specifications.

Runway 6: Runway Safety Area Grading

Runway 6-24 meets the FAA Runway Safety Area (RSA) requirements along its entire length and 1,000 feet beyond the end of Runway 24. However, the RSA does not extend much beyond the end of Runway 6. The southwest end of Runway 6 is located approximately 300 feet from the Airport's western property boundary. Between the end of the runway and the property boundary, the land slopes into a perennial marsh and an eight-foot high levee that marks the eastern edge of a former salt evaporation pond. The salt pond is now part of the Napa Sonoma Marsh Restoration project. The proposed action addressed in this EA is to fill and grade the sloping land immediately southwest of the Runway 6 threshold, an area of approximately 2.3 acres. This action does not include any direct effects beyond the Airport property boundaries.

Extend Runway 18L-36R

Runway 18L-36R will be extended to the south to an intersection with Runway 6-24 and beyond to the extension of Taxiway 'J'. The runway extension will increase the existing runway length from 2,500 feet to 4,440 feet. Currently, the runway is adequate for landings and takeoffs by single-engine, piston aircraft. The length is marginally adequate for use as a training runway and marginal for touch-and-goes. The current length offers limited peak period capacity because it only serves the smallest aircraft. With the additional length, the runway will support touch-and-go operations by most single engine aircraft. This improvement has two benefits:

1. Reduces congestion and delays on Runway 36L-18R, the Airport's primary runway.
2. Because the traffic pattern for Runway 36R-18L is east of the Airport, the frequency of overflights of the residential area located west of the Airport by training flights would be reduced.

The proposed runway extension will also enable the runway to serve piston twins, many turboprops, and smaller jets, expanding the range of aircraft that can be accommodated in the runway's secondary role of providing additional capacity during peak operational periods.

Install a Glide Slope Indicator

Runway 18R-36L is Napa Airport's main runway. The glide slope indicator and distance measuring equipment (DME), when used in conjunction with the existing

localizer, comprise an instrument landing system (ILS) that enables aircraft to fly precision approaches to Runway 36L. The glide slope indicator provides pilots with information regarding the proper descent path for the aircraft, typically a 3° descent. The DME provides pilots with a known fix to determine their distance from the Airport.

Napa Airport needs to install an ILS to provide safe aircraft approaches to Runway 36L. This ILS approach allows aircraft to land in poor weather conditions. Adding the ILS on Runway 36L will increase the amount of time the airport is open during poor weather conditions, and will provide a precision instrument approach when either Runway 6-24 or 18L-36R is closed due to construction or because of weather conditions.

The glide slope indicator is an antenna array located approximately 1,000 north of the end of Runway 36L and 175 feet west. The glide slope indicator consists of an equipment shelter, underground cabling and two low-profile antenna arrays that form arcs on either side of the equipment shelter and that reach from about 175 feet from the edge of the runway to within about 25 feet of the edge of the runway.

The following are summaries of alternatives, a discussion each alternative is provided in Section 5.0.

Alternatives 3 Through 9, Modified Action

The alternatives discussed in the following section represent the elimination of one of the proposed projects in the Airport Master Plan and the retention of the other projects. Each alternative assumes that other projects addressed in this EA and proposed in the Airport Master Plan will not be omitted or altered unless there is a physical connection between projects that affects the viability of both.

Alternative 3: Do not extend Taxiway 'J'

Taxiway 'J' is currently 1,700 feet long and serves the eastern end of Runway 6-24 and the CHP operations and commercial development south of Runway 6-24. If the taxiway is not extended to its proposed connection with Runway 36L (and the proposed extension of Runway 36R) aircraft using Runways 36L and 36R will have limited taxiway access to the southern portions of the Airport. Airport commercial development will be restricted to areas along the existing portion of Taxiway 'J'. The remaining six proposed projects remain unaltered.

Alternative 4: Do not construct fencing

Fencing would not be completed. The Airport is partially fenced; this alternative would affect only those perimeter property lines that have not been fenced. The perimeter fencing would not be completed through environmentally sensitive

areas associated with Fagan Marsh Ecological Reserve, generally an area accessible to the public. The remaining six proposed projects remain unaltered.

Alternative 5: Do not acquire property south of Runway 36R

Under this alternative, the 25.4-acre “Borges Atkins Property” would not be purchased as an RZP. The remaining six proposed projects remain unaltered.

Alternative 6: Do not widen bridge over Fagan Creek

The only vehicular entrance to the Airport is via Airport Road, which crosses a channelized section of Fagan Creek on a two-lane (24-foot wide) bridge. Under this alternative, the only alternative not directly related to aircraft operations or Airport security, the bridge and road would remain unchanged. The remaining six proposed projects remain unaltered.

Alternative 7: Do not grade RSA for Runway 6

The area immediately adjacent to the west end of Runway 6-24 is not graded as an RSA. Eliminating this action leaves the RSA ungraded and would not meet the FAA goal of a partial RSA. The remaining six proposed projects remain unaltered.

Alternative 8: Do not extend Runway 36R

Runway 36R 18L would remain 2,500 feet in length. It would not extend to a connection with the proposed extension of Taxiway ‘J’. The remaining six proposed projects remain unaltered.

Alternative 9: Do not install a Glide Slope Indicator

The existing localizer for Runway 36L would remain, however, the glide slope indicator would be eliminated and therefore the approach to Runway 36L would not be equipped with an ILS. The remaining six proposed projects remain unaltered.

Actions Considered but Dismissed

Aviation facilities at the Airport, including runway and taxiway extensions must be highly interdependent to provide safe, efficient aircraft operation. Interdependence limits the alternatives that can be considered when examining proposed aviation related projects. Napa County considered alternatives to the extension of Runway 36R and security fencing. However, the County dismissed the alternatives, for the reasons stated below.

Limited Runway 36R Extension

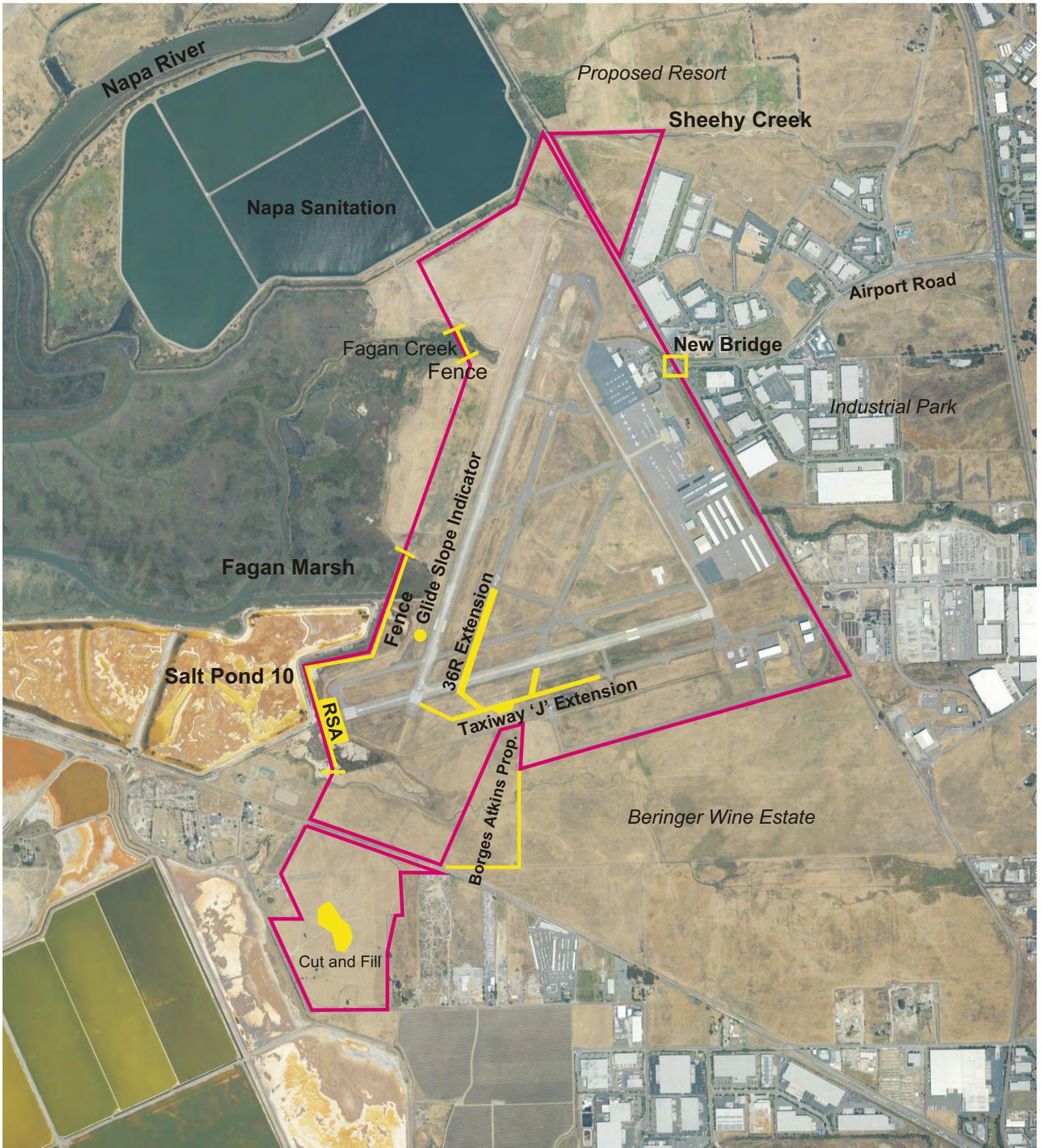
An extension of Runway 36R to a connection with Taxiway 'H', to create a runway length of 3,300 feet was rejected from consideration because this length would create safety issues with Runway 6-24 and does not allow a minimal RSA or RPZ.

Alter Fence Alignment

Fencing is placed on or near to the Airport property line. An alternative to placing the security fence on the property line through the Fagan Marsh was rejected because it allowed access onto Airport property and the fence would have encroached too close to the main runway (Runway 18R-36L).

Construction of a New Airport

Construction of a new airport was considered as an alternative, but rejected because of its anticipated costs and likely environmental impacts.



Napa County Airport Existing and Proposed Conditions

Napa County Airport Master Plan
Draft Environmental Assessment
December 2007

Figure 2-2

- Property Boundary
- Proposed Actions



NORTH

Scale: Approx. 1" = 1,600'

Aerial photography by Geoimagery, Auburn, CA June 2005

3.1 Noise – Affected Environment

Background

Noise is “unwanted sound” or sound that is annoying or harmful because of its loudness, pitch, or duration. Noise pollution is measured using criteria related to both annoyance and environmental health. The common measurement of noise is decibels (dB). The A-weighted decibel scale (dBA) is a measure of loudness that gives more importance to sound to which humans are sensitive.

Community noise is often described in terms of ambient noise levels. A statistical tool frequently used to measure the ambient noise level is the average or equivalent sound level (L_{eq}). The L_{eq} is the foundation of composite noise descriptors such as day-night average (L_{dn}) and community noise equivalent level (CNEL). The L_{dn} is based on the average hourly L_{eq} during a 24-hour day, with 10dB added to the hours between 10:00 p.m. and 7:00 a.m. This weighting is based on the assumption that people react to nighttime noise as though it were twice as loud as daytime noise. The CNEL, like L_{dn} , is based on the weighted average hourly L_{eq} during a 24-hour period, with an additional weighting of 5 dB for the hours from 7:00 p.m. to 10:00 a.m. Sound exposure level (SEL) is the energy sum of the noise produced during a single sound event. SEL takes into account both sound intensity and duration.

Various agencies at the federal, state and local levels establish noise standards. Federal and state guidelines are binding only with respect to their respective programs and projects. Local governments are responsible for determining acceptable noise levels and permissible land uses in noise-affected areas.

Federal Guidelines

FAA noise guidelines for land uses within airport environs indicate that L_{dn} levels below 65 dB are acceptable for all sensitive land uses including residential development. The FAA recognizes the Community Noise Equivalent Level (CNEL) as an alternative metric for California. The United States Department of Housing and Urban Development (HUD) also establishes the 65 dB L_{dn} as acceptable for outdoors noise in residential areas; higher levels are normally acceptable but require special approval.

State Guidelines and Regulations

The State of California has established noise standards (Title 21, California Code of Regulations [CCR] Section 6) that govern the operation of aircraft and aircraft engines for all airports operating under a valid permit issued by Caltrans. These regulations are based on CNEL levels and suggest a maximum of 60 dB as the suitable standard for urban residential land uses and 55 dB for rural residential land uses. Department of Housing and Community Development interior noise

standards are 45 dB CNEL with windows closed. State law requires noise insulation of new multi-family dwellings constructed within the 60 dB CNEL noise exposure contours of airports. The California Noise Insulation Standard states that houses within the 60 dB CNEL contour must insulate to provide an interior noise level of 45 dB.

Local Guidelines and Regulations

Napa County has adopted noise elements as part of its general plan and has established an Airport Land Use Commission (ALUC) and adopted an Airport Land Use Compatibility Plan (ALUCP) and a Comprehensive Land Use Plan (CLUP).

Napa County General Plan Noise Element defines goals and policies for the Napa County Airport:

Goal: It shall be the goal of Napa County to have a circulation system and patterns of land use developed in a manner which minimizes the impacts of noise pollution from railroads, highways, industry, agricultural uses, airports, recreation areas and to conduct its land use planning and development in such a manner as to minimize activities producing unacceptable noise pollution.

Policy: Establish land use policies that discourage the construction of urban residential development and other noise-sensitive activities where noise levels are clearly unacceptable, such as near railroads, highways, industry, agricultural uses, airports and recreation areas.

Policy: Support needed legislation to State and Federal governments to reduce noise generated by motor vehicles, boats and aircraft.

In the Noise Element of General Plan (1983) the Napa County Airport was evaluated in terms of existing and future levels of operations. From the operations data (types of aircraft, typical flights per day, etc.) and onsite noise level measurements, the County calculated the L_{dn} (60 dBA) noise contour around the airport.

Based on the level of aircraft operations, the type of aircraft landing and taking off and field measurement, Figure 3.1-1 shows the 60 L_{dn} contour around the airport for the Year 2000. This noise contour is the limit used to determine land use approvals for low-density housing. Currently, there are low-density housing developments within the 60 L_{dn} contour. The typical maximum intermittent noise from aircraft takeoffs near the runways is shown in Table 3.1-1.

Table 3.1-1 Typical Maximum Intermittent Noise Due to Aircraft Takeoffs –
Napa County Airport, 2002

Aircraft	Distance (Line of Sight to Aircraft)	Typical Maximum Level (dBA)
Single Engine Propeller	500 feet	75
Single Engine Propeller	1,200 feet	65
Twin Engine Propeller	800 feet	75
Twin Engine Propeller	1,500 feet	65
Falcon Jet (IASCO)	2,000 feet	75
	4,000 feet	65

Source: Sound Solutions, 1982, Napa County General Plan

Napa County determined that the rural character of the County should be retained (Napa County General Plan, 1982).

Napa County is predominately rural in character and land use is planned to remain so. Furthermore, the nature of the County's noise problems is predominately intermittent, and there are no constant, major noise sources that create ongoing problems...

To ensure that intermittent noise problems do not significantly impact the rural character of the County, the following aircraft and aircraft operation measures are included in the General Plan:

Napa County Airport Year 2000 Ldn = 60 dBA contour extends over a wide area to the Napa River to the west and south and to the railroad tracks to the north and east; intermittent maximum 65 dBA levels range from 1,000 feet for a single prop plane to 4,000 feet for a Falcon Jet (Napa County General Plan, Noise Element, amended 1990)

Airport Land Use Compatibility Plan

To ensure that land use/noise issues do not significantly impact the County, or aircraft operation and Airport development, land use-planning policies are included in the Airport Land Use Compatibility Plan (ALUCP). In summary, the ALUCP noise compatibility policies include:

Airport and land use compatibility shall consider future CNEL contours.

Noise compatibility criteria should be applied at the General Plan or Specific Plan level.

The maximum CNEL considered normally acceptable for most residential uses in the vicinity of the airport is 55 dBA.

Reduction of outside noise levels is a function of land use planning.

Single event noise levels should be addressed when evaluating the compatibility of highly noise-sensitive land uses such as schools and libraries.

Existing Conditions

The Ldn, 60-dBA contour related to aircraft operations is shown in Figure 3.1-1, based on the 1990 Napa County General Plan Noise Element. During that year, annual Airport operations totaled approximately 175,000 (Mead & Hunt, 2007). The Ldn 60-dBA contour is used to identify the limits of low-density residential development.

Napa County ALUCP states that the underlying land use designations, noise compatibility criteria, and the projected noise contours indicates that noise exposure levels will not present a significant impact with respect to land use compatibility in the Airport environs under current and reasonably foreseeable conditions. Noise contours were prepared using the FAA's Integrated Noise Model (Version 6.1, Mead & Hunt, 2004 and 2005). Data used to model near-term noise conditions is included in Appendix B.

The projected 65 CNEL contour does not extend beyond the Airport property for the ten-year time frame of the Updated Master Plan. Figures 3.1-2, 3.1-3 and 3.1-4 show the current noise contours, the near-term noise contours based on implementation of the proposed action, and noise contours for the year 2022 respectively. The current and projected 55 CNEL contour extends south over the salt ponds, slightly west of the Airport, north over currently undeveloped land, and to the east near the industrial park. The types of land uses within these areas are consistent with local, state and federal guidelines for noise compatibility.

Future Conditions

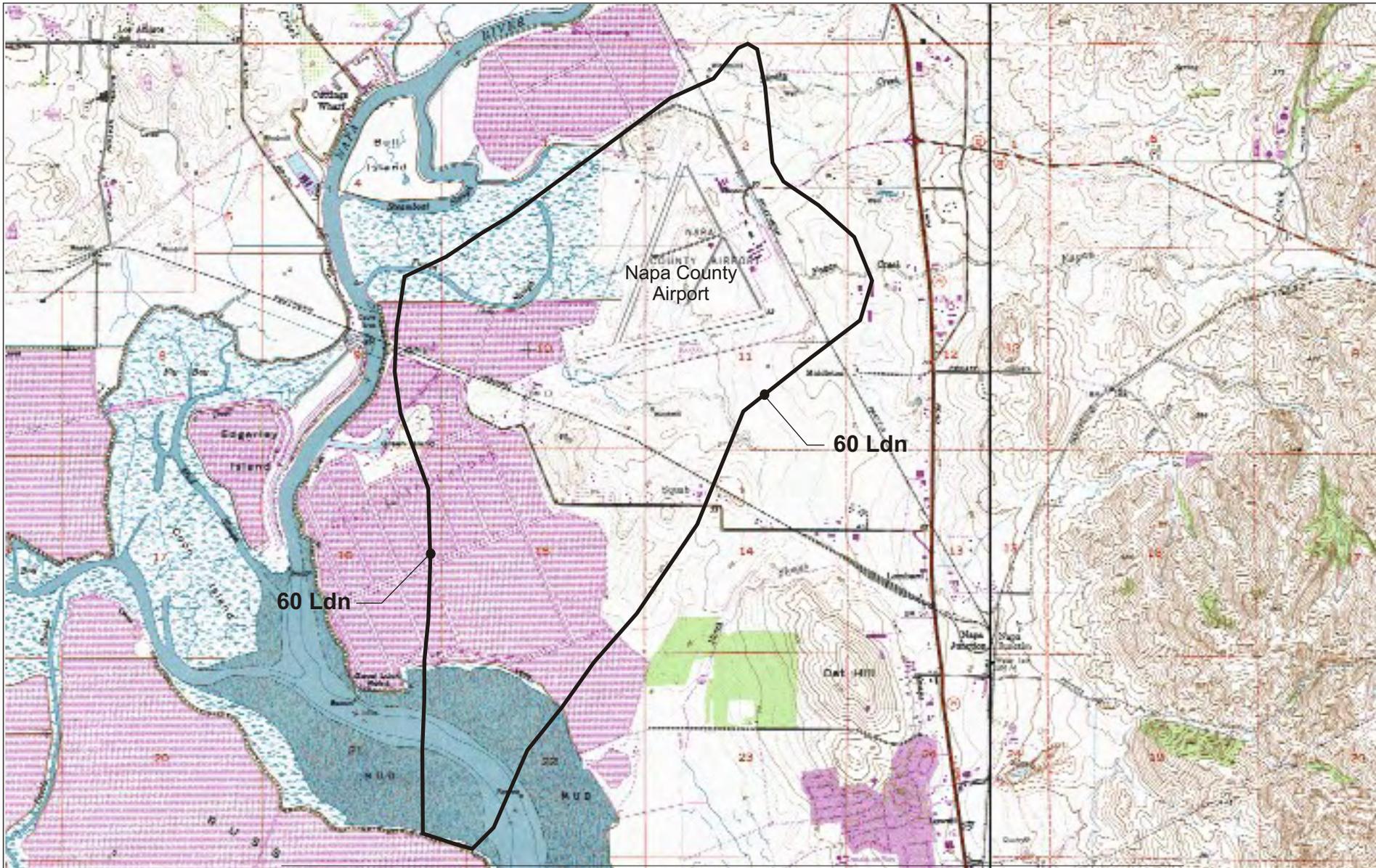
Future noise conditions are evaluated in the Airport Master Plan (Mead & Hunt, 2007). To determine noise contour inputs for the year 2022, Mead & Hunt made the following assumptions about aircraft activity, aircraft mix and runway lengths:

1. Aircraft activity will increase from current levels of 126,080 annual operations to an average of 235,000 annual operations in 2022.
2. Shift in aircraft mix to larger aircraft – estimated that the fastest growing aircraft type will be turbojets that will represent about 10 percent of all aircraft using the Airport, an increase of about 3 percent.
3. The length of Runway 18L-26R will be increased to 4,000 feet.

Under the forecast assumptions, the 2022 noise contours (Figure 3.1-4) have the same basic shape as current contours. However, the area within each contour has expanded based on the forecasted increases in operations. The critical 65 CNEL contour is entirely within the Airport property, the 60 and 55 CNEL contours expand beyond the Airport but do not affect any sensitive receptors.

Noise and Land Use

The compatibility of existing and planned land uses (Section 3.2) in the vicinity of an airport is usually associated with the extent of the airport's noise impacts. If the noise analysis concludes that there is no significant impact, a similar conclusion usually may be drawn with respect to compatible land use. Based on the re-configured Runway 36R and modeled noise contours (Mead Hunt, 2005), effects of noise on land uses and sensitive receptors within the vicinity of the Airport are not significant.



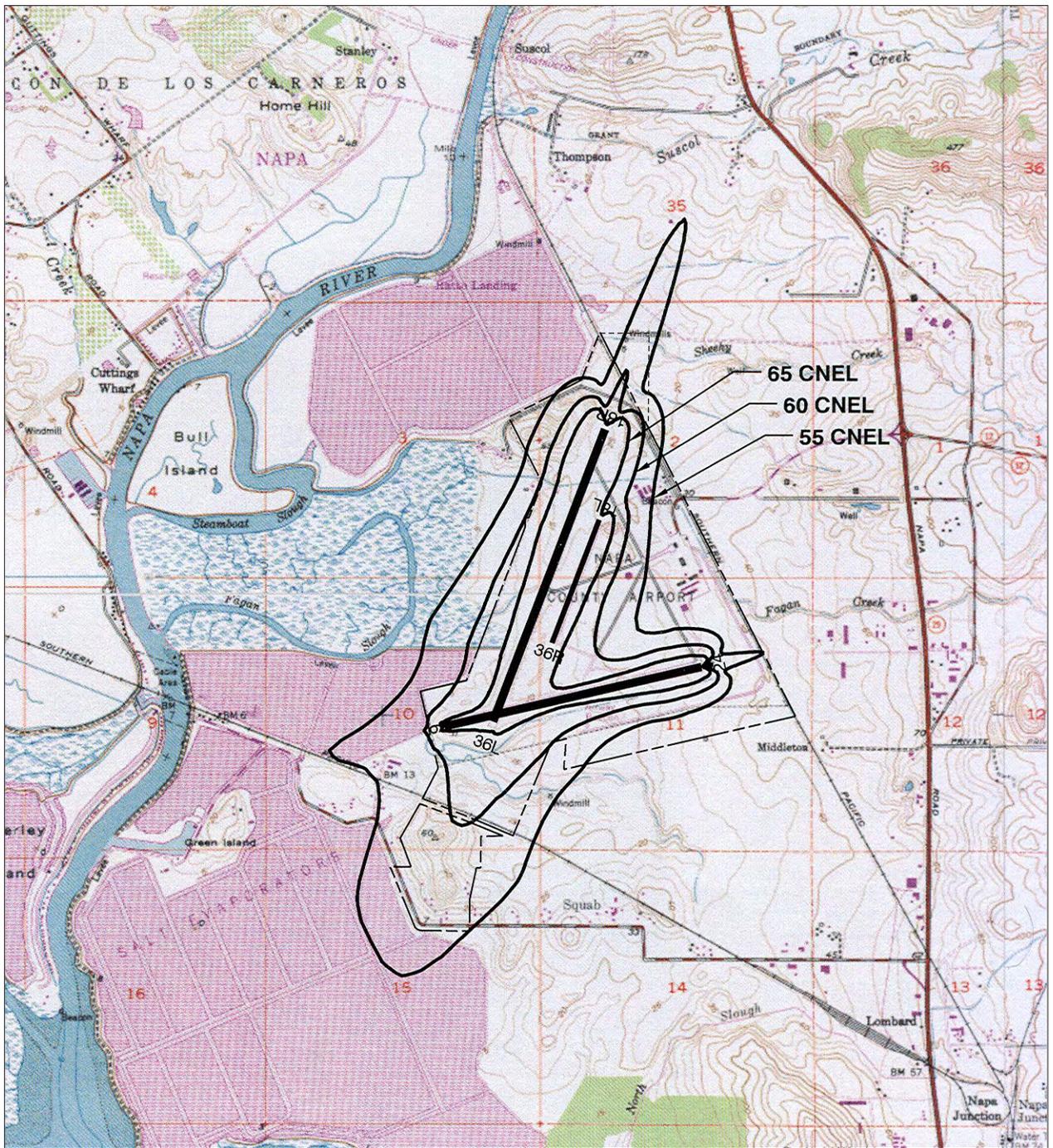
**60 Ldn Noise Contour
Napa County Airport**

Napa County Airport Master Plan
Draft Environmental Assessment
December 2007



Scale: 1" = 3,500'

Figure 3.1-1



**Noise Contours - Existing Conditions
Napa County Airport**

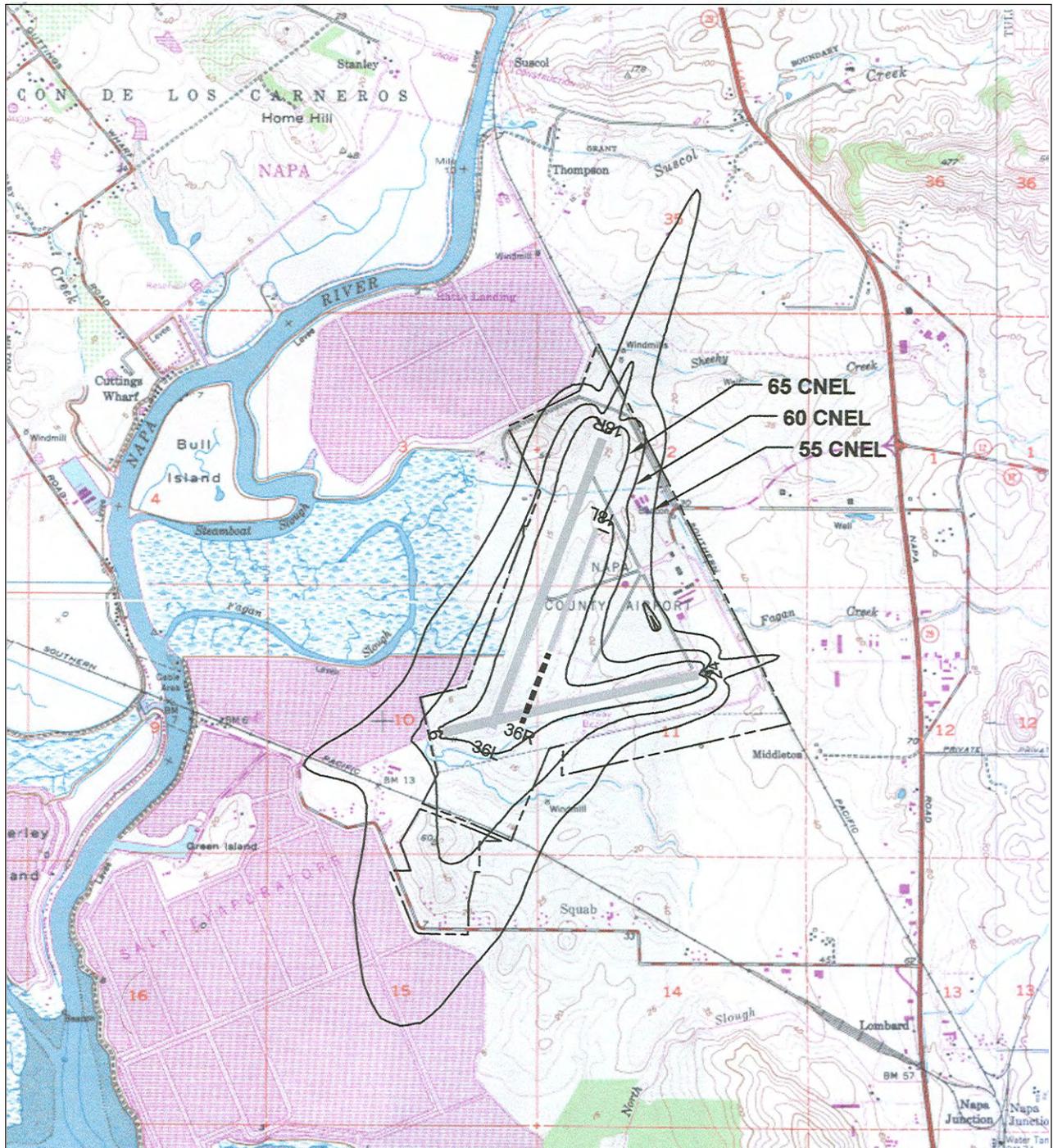
Figure 3.1-2

Napa County Airport Master Plan
Draft Environmental Assessment
December 2007

Source: Mead & Hunt, Inc. (July 2003)



Scale: 1" = 3,000'

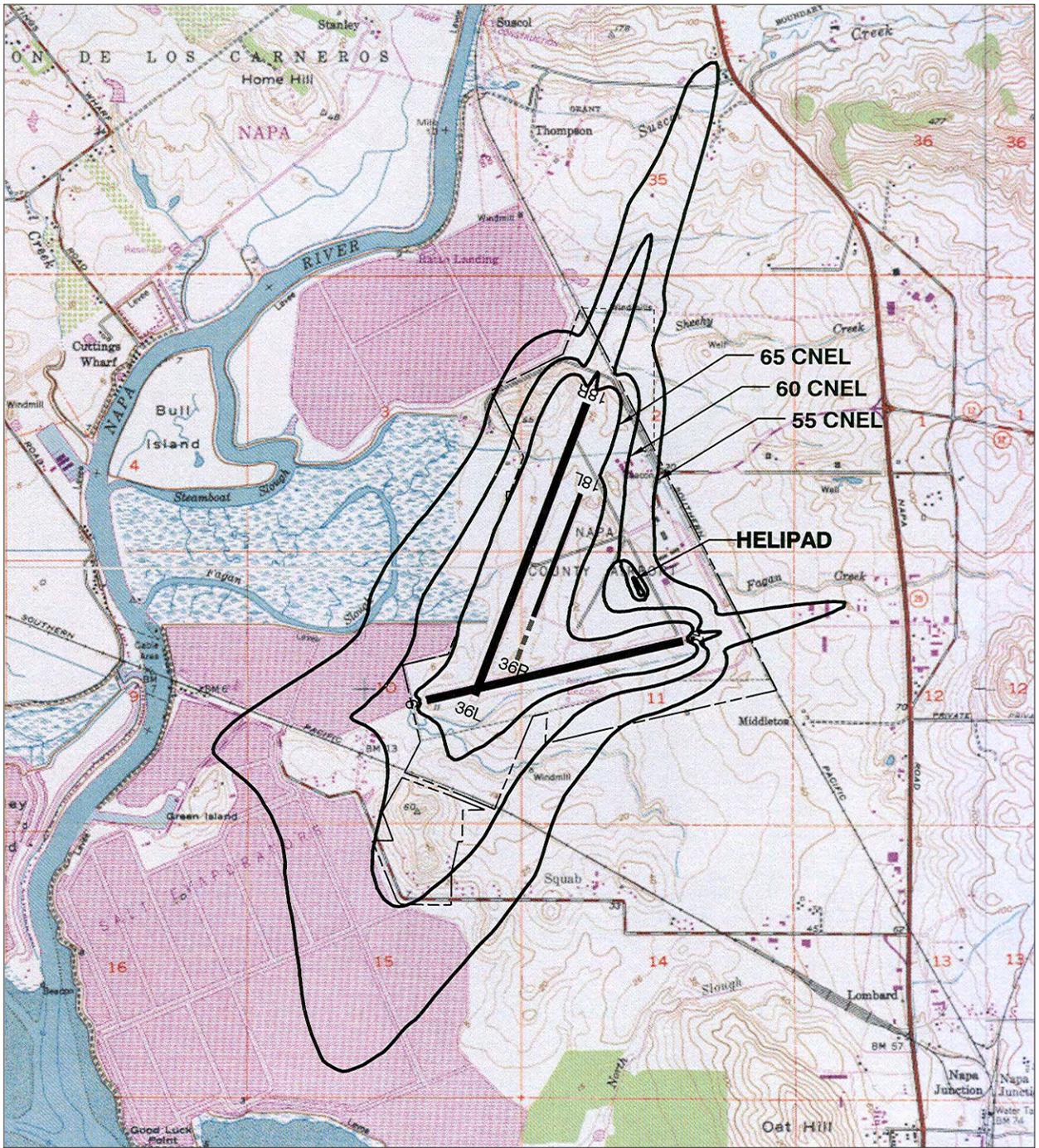


Noise Contours - Proposed Runway
 Estimated Year: 2012
 Napa County Airport
 Napa County Airport Master Plan
 Draft Environmental Assessment
 December 2007

Figure 3.1-3

Source: Mead & Hunt, Inc. (July 2005)

↑
 NORTH
 Scale: 1" = 3,000'



**Noise Contours - 2022
Napa County Airport**

Napa County Airport Master Plan
Draft Environmental Assessment
December 2007

Source: Mead & Hunt, Inc. (July 2003)

Figure 3.1-4

↑
NORTH
Scale: 1" = 3,000'

3.2 Compatible Land Use – Affected Environment

Land Ownership

Napa County owns the Napa County Airport. Privately owned lands surround the County-owned airport property on the south and east. Publicly owned lands surround the airport property on the north and west. All of the lands surrounding the airport are in unincorporated Napa County.

The Army Corps of Engineers constructed the airport in 1942 on land owned by Napa County originally. The U.S. Army Air Corps intended to establish an air base for national defense. However, the military construction was never fully completed and in 1945, the land and airport facilities were conveyed to Napa County for civilian use.

The Airport is bounded on the west by estuary marshes and former salt evaporation ponds; on the northwest by Napa Sanitation District wastewater treatment facilities; on the east by industrial and commercial developments and on the south and southwest by salt evaporation ponds and undeveloped agricultural lands. All of the land surrounding the airport is zoned to prevent land uses that are incompatible with aviation.

The Airport is a low-lying area at an elevation of approximately 10 to 35 feet above mean sea level. Much of the airport has been constructed on fill, probably placed during its early development period in the 1940's. The western and southern perimeter of the airport includes tidally influenced salt marshes. Much of the airport drains into these salt marshes and ultimately to the lower reaches of the Napa River. Fagan Creek drains the eastern, northern and northwestern portions of the airport, although it channelized and/or culverted through its entire length across the airport. The creek discharges into the Fagan Marsh Ecological Reserve west of the airport. Sheehy Creek forms the northern boundary and flows westerly into Fagan Marsh.

Land Uses at the Napa County Airport

Napa County Airport occupies approximately 800 acres in southern Napa County west of the intersection of State Route 29 and State Route 12, approximately five miles south of the Napa City limits, one mile north of the City of American Canyon and three miles north of the City of Vallejo and the Solano County line. Airport land uses are exclusively aviation related, except for a restaurant in the terminal building.

Napa County Airport has an FAA-manned air traffic control tower that is open from 7 a.m. to 7 p.m. seven days per week. Approaches and departures are under the jurisdiction of the FAA's Oakland Air Route Traffic Control Center located in Fremont, California.

For based and transient aircraft, the Airport has three separate tiedown zones—nine acres on the north apron, which has 50 transient aircraft spaces; the main apron with 108 tiedown spaces on 12.3 acres; and an additional 179 tiedown spaces on the 11.7 acres of the airport's south apron. All of the transient and tiedown zones are along the east side of the airport, which is also the location of Bridgeford Flying Services, the Airport's sole Fixed Base Operator (FBO). The Airport also has 142 hangars, mostly for piston singles.

The full-service FBO offers aviation fuel. Bridgeford manages the fuel, which is stored in an aboveground, county-owned fuel farm. Most of the fuel capacity is devoted to jet-A, with two 12,500-gal tanks, and one tank of identical capacity for 100LL avgas. All fuel is delivered to the aircraft directly from fuel trucks.

International Air Service Company, Ltd (IASCO) opened its Napa Flight Center in 1971 to provide Japan Airlines (JAL) with a high quality flight training facility for Japanese nationals. This training facility is equipped with computerized training aids, including fixed and full motion flight simulators. Napa has a sophisticated flight operations department, which maintains an airline type dispatch control over flight procedures and provides satellite based weather coverage. This facility, which is now owned by JAL and managed by IASCO, has recently been remodeled and now accommodates approximately 200 Japanese students.

The California Highway Patrol Air Operations Unit based at Napa County Airport provides no-fee aviation support services to public safety agencies in the San Francisco Bay Area. This unit provides law enforcement support, search and rescue and emergency medical services in the nine Bay Area Counties. This elite unit uses a Cessna 185F airplane and a Bell 206L3 Long Ranger helicopter. Both of these aircraft are equipped with state-of-the-art communications systems allowing the flight crews to speak with nearly all public safety agencies in the Bay Area. A trained paramedic is always part of the flight crew of the helicopter and it is equipped and classified as an Advance Life Support Aircraft.

Land Uses in the Vicinity of the Napa County Airport

Land uses in the Airport vicinity, and potentially affected by the proposed action, include industrial, commercial, office, residential, Napa County Sanitation District wastewater treatment facility and an ecological reserve.

Industrial and Commercial

The Airport and property south and east of the Airport are within the boundaries of the Airport Industrial Area Specific Plan (AIASP). This specific plan area includes 2,945 acres between State Route 29 and the Airport. The plan sets forth

detailed land use and circulation standards, capital improvement requirements and supporting policies to ensure aviation compatible land uses and provide a major area for industrial and commercial development in southern Napa County.

Residential

Residential land use in the vicinity of the Airport is generally confined to the City of American Canyon south of the Airport and a residential subdivision on the west bank of the Napa River. The ALUC adopted guidelines to identify compatible land use around the Airport. Figure 3.2-1 shows the land use compatibility zones, and land use compatibility criteria are shown in Table 3.2-1.

The City of American Canyon has proposed, in its general plan, that residential subdivisions be planned within about 8,500 feet of the Airport's southern boundary near Oat Hill, its proposed location is shown in Figure 3.2-1.

Napa County Sanitation Wastewater Treatment Facility

The Soscol Water Recycling Facility (SWRF) is located northwest of Runway 18R (Figure 3.2-2). The SWRF is a secondary and tertiary biological physical-chemical treatment facility that treats a mixture of domestic and industrial wastewater and includes 340 acres of oxidation ponds and/or activated sludge facilities. The SWRF currently receives wastewater from the City of Napa and unincorporated areas of the Napa County. The Napa County Sanitation District has completed upgrades to the SWRF, which include primary treatment, activated sludge facilities, and sludge digestion and solids de-watering facilities. Periodically, biosolids generated from waste treatment are added to soil on open space areas of the Airport as soil conditioners.

Fagan Marsh Ecological Preserve (State Marine Park)

Fagan Marsh Ecological Preserve immediately west of the Airport (Figure 3.2-2) was originally designated as an ecological reserve in 1979. In December 2004, California Department of Fish and Game (CDF&G) recommended the designation be changed to the Fagan Marsh State Marine Park. CDF&G Code Section 1580 (ecological reserves) states that "the policy of the state is to protect threatened or endangered native plants, wildlife, or aquatic organisms or specialized habitat types, both terrestrial and non-marine aquatic, or large heterogeneous natural gene pools for the future use of mankind through the establishment of ecological reserves." Although the language does not specifically refer to ecological reserves in marine areas, the Fish and Game Commission has extended this policy to those areas. Approximately 5.3-acres of the preserve encroaches onto the Airport property along the western property boundary (Wetlands 4.11).

Napa-Sonoma Marsh Restoration Project

Pond 10 of the Napa-Sonoma Marsh Restoration project lies just west of the end Runway 6. The Napa River Unit of the Napa Sonoma Marshes State Wildlife Area was first diked off from the North San Francisco Bay during the 1850s for hay production and cattle grazing. Much of the land was later converted to salt ponds, for commercial salt production by the solar evaporation of bay water. In 1994, the Cargill Salt Company ceased the production of salt in the North Bay and sold 9,850 acres, consisting of 12 evaporator ponds and associated remnant sloughs and fringing marsh, to the State of California.

The California Coastal Conservancy, California Department of Fish and Game, and U.S. Army Corps of Engineers have undertaken a Feasibility Study to evaluate alternatives for the reduction of salinity and restoration or enhancement of habitats in the Napa River Unit. Some of the inactive salt ponds currently provide significant habitat for fish and wildlife, while the salinity levels in others exceed that which is beneficial to wildlife. The project objectives for the Napa River Unit are: (1) to restore large patches of tidal habitats in a band along the Napa River, in a phased approach, to support a wide variety of fish, wildlife and plants, including special status species; and (2) to effectively manage water depths and salinity levels of remaining ponds to benefit migratory and resident shorebirds and waterfowl. The *Baylands Ecosystem Habitat Goals Report*, a report of habitat recommendations for the San Francisco Bay states that: “the overall goal for the North Bay is to restore large areas of tidal marsh and to enhance seasonal wetlands. Some of the inactive salt ponds should be managed to maximize their habitat functions for shorebirds and waterfowl, and others should be restored to tidal marsh...” The Feasibility Study has included technical and environmental analysis of the salinity reduction and habitat restoration alternatives through: hydrologic modeling of salinity reduction alternatives, analysis of the sediment budget in the North Bay, estimates of tidal habitat evolution, water and sediment sampling and lab analysis, and an Environmental Impact Report and Environmental Impact Statement. Stakeholders, including trustee and regulatory agencies, nongovernmental organizations, universities and scientific organizations and the public, have been involved in the development Feasibility Study through the Napa Sonoma Marsh Restoration Group, Technical Advisory Groups and public scoping meetings.

Relevant Land Use Plans and Regulations

Napa County General Plan

The *Napa County General Plan* (General Plan) sets forth the comprehensive, long-term land use goals and policies for the County. Specific Plans and zoning ordinances are required to be consistent with adopted General Plans. The General Plan is composed of eleven elements including Land Use, Housing, Noise, Safety

and Circulation. The primary focus of this section is Land Use, although other elements of the General Plan may be affected by the proposed actions. The General Plan also includes a Specific Plan for the Airport Industrial Area, which includes the Napa County Airport and property south and east of the Airport.

The primary Land Use Element policies that may apply to the proposed actions are listed below:

Land Use Open Space and Watershed Policy 1.1: Airport Approach Zones – The County will consider low-density non-residential development of land such as industrial under Airport Approach Zones to reduce safety hazards though the use of zoning or acquisition of development rights.

Land Use Open Space and Watershed Policy 1.2: Ecologically Sensitive Areas – The County will enact and enforce regulations which will limit development in ecologically sensitive areas such as those adjacent to river or streamside areas, and physically hazardous areas such as floodplains, steep slopes, high fire risk areas and geologically hazardous areas; except Oat Hill which is planned for urban development.

Land Use Open Space and Watershed Policy 1.10: Watershed Protection – The County will protect the public interest in drainage systems and water impoundments from sedimentation, siltation and contamination and ensure that urban agricultural and resource development projects utilize sound short-term erosion control measures.

Industrial Policy 6.2: Industrial Development – The County will study the economic feasibility of enhancing the industrial potential of the Napa County Airport through means that are within Napa County’s capabilities and desires. The precise type and extent of the effort will be detailed in a specific plan for the area.

Industrial Policy 6.8: Specific Plan – The County will place a priority on the preparation, review and approval of a Specific Plan and Master EIR for the development of the Napa County Airport Industrial Area.

Napa County Land Use Plan Map 1998-2000: Land use designation, Urban, Public-Institutional. (Includes the Airport and Napa County Sanitation District).

The primary Circulation Element policies that may apply to the proposed actions are listed below:

Aviation – Planning Goal 4: To maintain the Napa County Airport as a general aviation facility.

Policy Guidelines (1983)

4a. To enhance the safety at Napa County Airport and increase the runway capacity, an Instrument Landing System (ILS) should be installed.

4.b Additional aircraft storage facilities should be provided to accommodate the expected increase in aircraft movement.

4c. The surrounding land uses should be compatible with airport activity and consistent with Policy 1.1 (Airport Approach Zones of the Land Use Element of the General Plan).

4d. The County should implement approved recommendations for the Master Plan for the Napa County Airport.

The primary Noise Element (Amended 1990) policies that may apply to the proposed actions are listed below:

Noise Element, Introduction- Based upon noise complaints, analysis of major noise source operations data and noise measurements of major noise sources, the following conclusions are presented:

Airports

- Napa County Airport Year 2000 $L_{dn} = 60$ dBA contour extends over a wide area to the Napa River to the west and south and to the railroad tracks to the north and east; intermittent maximum 65 dBA levels range from 1,200 feet for a single prop plane to 4,000 feet for a Falcon Jet.

Noise Element Policies:

- Establish land use polices that discourage the construction of urban residential development and other noise-sensitive activities where noise levels are clearly unacceptable, such as near railroads, highways, industry, agricultural uses airports and recreation areas.
- Support needed legislation to State and Federal governments to reduce noise generated by motor vehicles, boats and aircraft.

Implementation Action Plan (1990)

Existing Noise Sources

- Require flight paths to meet FAA and California State Department of Aeronautics regulations regarding altitude

away from airports, takeoff and landing patterns and airport noise limits.

- Encourage use of airport by aircraft classes with low noise output; discourage use by others.
- Reduce flight frequency over noise sensitive areas and at noise sensitive times of the day.
- Provide shielded “run up” areas as needed.

Napa County Airport Industrial Area Specific Plan (AIASP)

A specific plan is a tool for the systematic implementation of the [Napa County] General Plan. It effectively establishes a link between implementing policies of the General Plan and the individual development proposals in a defined area. A specific plan may be as general as setting forth broad policy concepts, or as detailed as providing direction to every facet of development from the type, location and intensity of uses to the design and capacity of infrastructure; from the resources used to finance public improvements to the design guidelines of a subdivision (*Planner’s Guide to Specific Plans*, Office of the Governor, State of California).

The AIASP (as amended, 1994) includes a specific land use plan and master environmental assessment for the use of 2,945-acres that includes the Airport and lands south and east of the Airport and west of State Route 29. The plan sets forth detailed land use circulation standards, capital improvement requirements, associated financing and improvement sequencing measures, and necessary supporting policies and regulatory procedures to implement the plan. All of the land uses in the planning area are required to be aviation compatible, to ensure no conflicting uses with Airport and aircraft operations.

Napa County Airport Land Use Compatibility Plan

Napa County Airport Land Use Compatibility Plan (ALUCP) sets forth policies and criteria that the Napa County Airport Land Use Commission (ALUC) uses to evaluate land use plans and proposed development in the vicinity of the public-use airports located within Napa County. (There are three public-use airports in Napa County – Calistoga Gliderport, Parrett Field [Angwin], and Napa County Airport.) It is the Commission’s duty to assist local agencies in the determination of compatible land uses in the vicinity of airports and to coordinate planning at the state, regional and local levels to provide for the orderly development of air transportation and protect the public health, safety and welfare.

The ALUC has authority to review airport master plans to determine if the activity forecasts or proposed facility development differs substantially from the

forecasts and development assumed for the Airport in the ALUCP. The ALUC can review additions to the proposed Airport Master Plan to determine that the proposed improvements would not result in greater noise, overflight, and safety impacts on height restrictions on surrounding land uses.

Napa County Zoning Ordinance

Napa County has established specific zoning requirements for and around the Airport Napa County Zoning Ordinance, Title 11, Airports). The Airport zoning district (AV) applies specifically to Airport property. Zoning district “AC” is the Airport combining zone, which designates property within the Airport and in the vicinity to combine land uses that are aviation compatible. Figure 3.2-3 shows the zoning districts in the Airport area.

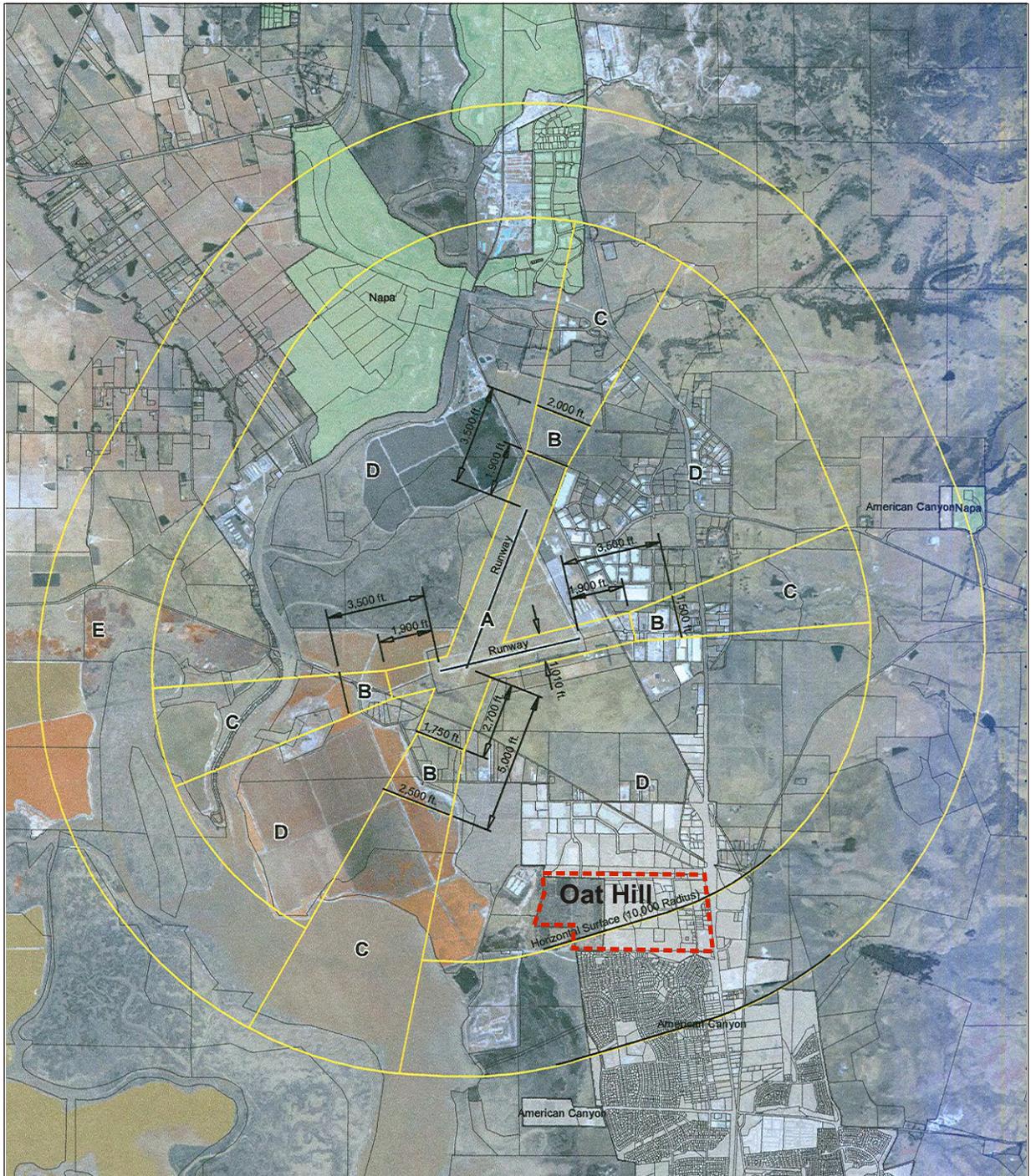
Land Use Compatibility

The compatibility of existing and planned land uses in the vicinity of an airport is usually associated with the extent of the airport’s noise impacts. If the noise analysis described in the noise analysis (Section 3.1) section concludes that there is no significant impact, a similar conclusion usually may be drawn with respect to compatible land use.

Based on the re-configured Runway 36R and modeled noise contours (Mead Hunt, 2005), effects of noise on land uses and sensitive receptors within the vicinity of the Airport are not significant. The 65-CNEL contour, the indicator of significant noise impacts, shown in Figure 3.1-3, indicates that the contour is contained within the Airport’s property boundary. Therefore, no significant noise impact will occur over noise sensitive areas.

Table 3.2-1 Land Use Compatibility Criteria: Refers to Figure 3.2-1

ZONE	PROHIBITED USES	OTHER DEVELOPMENT CONDITIONS	EXAMPLES OF NORMALLY ACCEPTABLE USES	EXAMPLES OF USES NOT NORMALLY ACCEPTABLE
A	All residential uses Any assemblage of people Any new structure that exceeds height limits Noise sensitive uses Uses hazardous to flight	Avigation easement required	Pasture, open space Aircraft tie downs Auto parking Most agricultural uses	Heavy poles, signs, large trees, etc. Ponds
B	All residential uses Noise sensitive uses Schools, libraries, hospitals, daycare centers Uses hazardous to flight	Avigation easement required Structures to be as far away as possible from extended runway centerline Clustering is encouraged to maximize open land areas Building envelopes and approach surfaces required on all subdivision maps and development plans NLR measures may be required for noise sensitive uses (offices)	All uses from Zone A Parks with low intensity uses, golf courses Nurseries (plans) Mini-storage	Retail uses Office uses (except as accessory uses) Hotels, motels, resorts Theaters, assembly halls, and conference centers Ponds
C	All residential uses Schools, libraries, hospitals, daycare centers Uses hazardous to flight	Avigation easement required Structures to be as far away as possible from extended runway centerline Clustering is encouraged to maximize open land areas Building envelopes and approach surfaces required on all subdivision maps and development plans	All uses from Zone B Warehousing and low-intensity industrial Small retail uses Outdoor recreation uses, marina, ballpark Office uses	Large retail buildings Hotels, motels, resorts, health clubs Restaurants, bars Multi-story buildings Theaters, assembly halls, and conference centers Ponds
D	All residential uses Uses hazardous to flight	Overflight easement or deed notice required Building envelopes and approach surfaces required on all subdivision maps and development plans Clustering is encouraged to maximize open land areas NLR measures may be required for noise sensitive uses	All uses from Zone C Most non-residential uses Accessory daycare centers	Schools, libraries, hospitals, nursing homes Large shopping centers Amphitheaters Ponds
E	Noise-sensitive outdoor uses	Overflight easement or deed notice required	Any permitted use	Amphitheaters Landfills Ponds



**ALUC: Compatibility Plan
Napa County Airport**

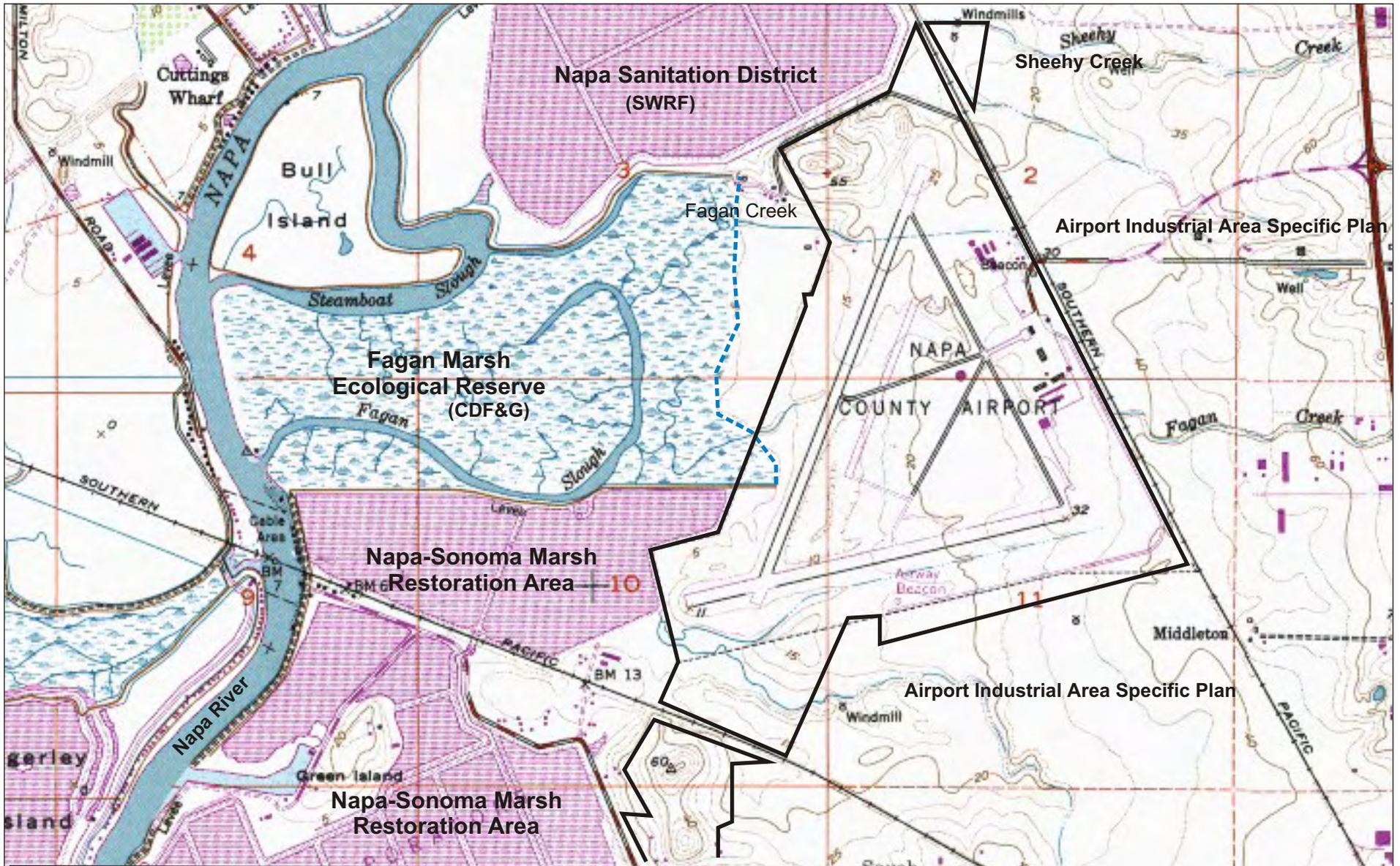
Napa County Airport Master Plan
Draft Environmental Assessment
December 2007

Figure 3.2-1



NORTH

Scale: 1" = 5,500' (approx.)

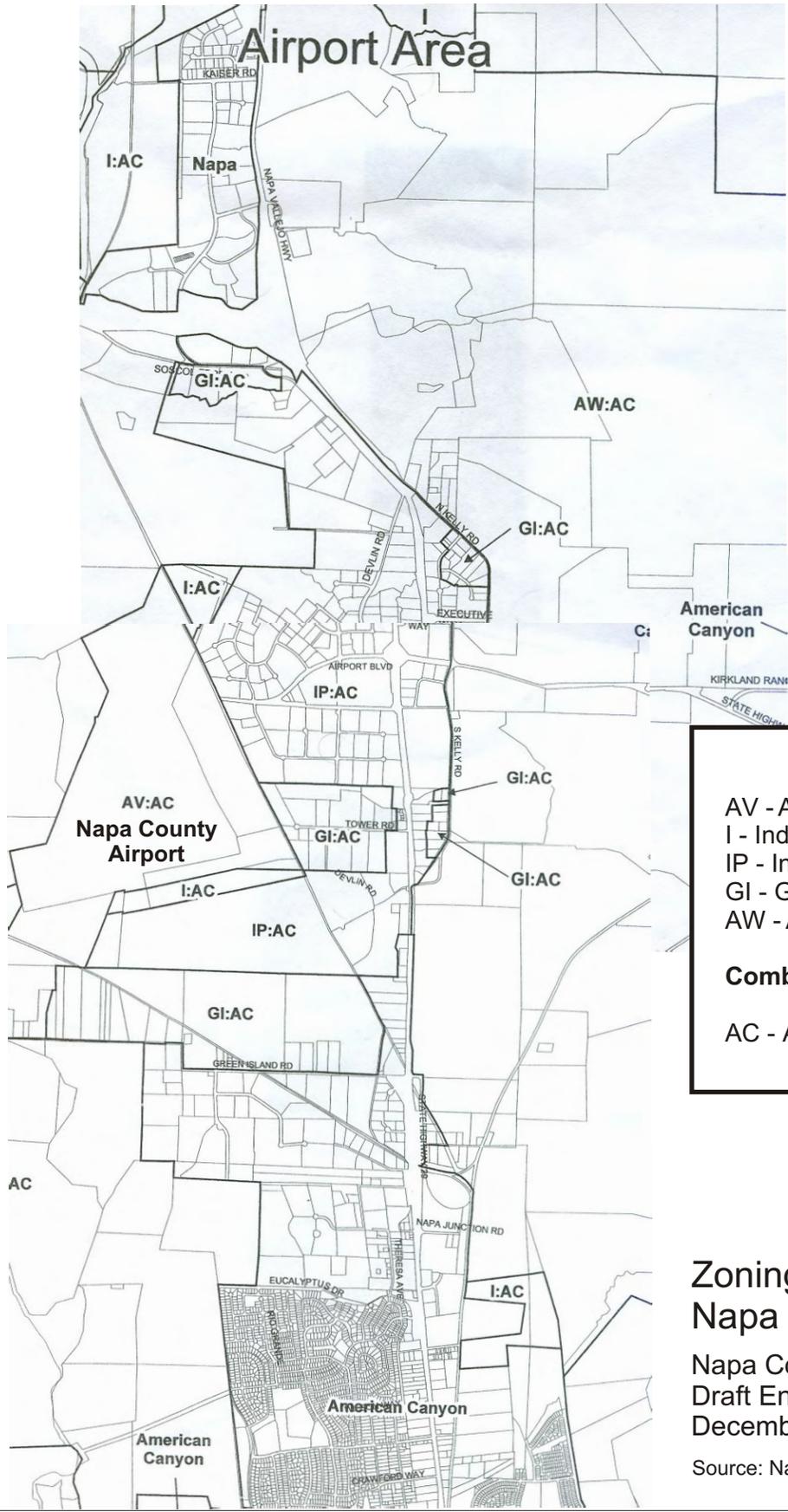


**Land Uses
Napa County Airport**

Napa County Airport Master Plan
Draft Environmental Assessment
December 2007

↑
NORTH
Scale: 1" = 3,500'

Figure 3.2-2



Zoning Districts

- AV - Aviation
- I - Industrial
- IP - Industrial Park
- GI - General Industrial
- AW - Agricultural Watershed

Combination Zoning Districts

- AC - Airport Compatibility

Figure 3.2-3

**Zoning Districts
Napa County Airport**
Napa County Airport Master Plan
Draft Environmental Assessment
December 2007

Source: Napa County, 2003

3.3 Socioeconomic Environmental Justice, and Children’s Health and Safety Risks– Affected Environment

This chapter summarizes the socioeconomic environment in southern Napa County.

The proposed Airport projects are generally confined to existing Airport environs. Located in southern Napa County, Airport improvements have the greatest opportunity to affect the Cities of Napa and American Canyon and the unincorporated areas of southern Napa County, including the Airport Industrial Area. The proposed actions do not disrupt or relocate any community and do not disrupt surface transportation or businesses and do not cause the loss or relocation of area jobs.

Napa County is one of the fastest growing counties in California. Table 3.3-1 shows the projected growth of the County and the two cities nearest to the Airport, Napa and American Canyon. Table 3.3-2 shows the projected employment trends in Napa County. The airport industrial area may be the fastest growing job-producing area in the County. However, the proposed action does not substantially affect the socioeconomic environment. The acquisition of the Borges Atkins property is not considered a substantial affect since no real property or displacement of persons is involved. No further analysis is required.

TABLE 3.3-1
POPULATION TRENDS – NAPA COUNTY

	1990	2000	2010*	2020*
	Population	Population	Population	Population
City of Napa	65,361	74,000	80,700	88,300
City of American Canyon	7,779	10,200	14,100	17,400
Napa County	110,765	124,280	141,900	156,900

* Estimates by the Association of Bay Area Governments, *Projections 2000* (December 1999), based on information provided by the cities and Napa County.

TABLE 3.3-2
EMPLOYMENT TRENDS – NAPA COUNTY

	1990 Jobs	2000 Jobs	2010 Jobs*	2020 Jobs*
City of Napa	27,200	30,850	39,090	43,040
City of American Canyon	1,190	2,520	5,610	7,450
Airport Industrial Area**	480	2,600	6,120	10,030
Napa County	49,100	59,710	77,310	89,820

* Estimates by the Association of Bay Area Governments, *Projections 2000* (December 1999), based on information provided by the cities and Napa County.

** The Airport Industrial Area has no housing units and no permanent residences.

Environmental Justice – Affected Environment

Executive Order 12898, “Federal Actions Address Environmental Justice in Minority Populations and Low-Income Populations” provides that each Federal agency shall make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority and low income populations. The Executive Order makes clear that its provisions apply to programs involving Native Americans.

Environmental Justice is the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies. EPA has this goal for all communities and persons across this Nation.

Ethnically, Napa County’s population (124,280 in 2000) is 70 percent white, 23 percent Latino, with African Americans and Asian Americans combining for about 4.3 percent (U.S. Census Bureau, 2000). No other individual ethnic minority comprises more than one percent of the total Napa County population. According to the U.S. Census Bureau (2000), about 8.3 percent of the total Napa County population falls below the poverty line established by the U.S. Government. Napa County population is concentrated in the City of Napa, about five miles north of the Airport and outside of all Airport flight paths. The City of American Canyon, south of the Airport, includes about 8.2 percent of the County population (U.S. Census Bureau, 2000) and about 95 percent of the City’s population lies outside of existing or proposed Airport flight paths.

Socioeconomic and Environmental Justice impacts and considerations contained in Executive Order 12898 and the analysis procedures described in Department of Transportation Order 5610.2 have been evaluated for proposed projects. Neither the proposed action or the no action alternative will have a disproportionately high and adverse human health and environmental effect on minority and low income populations since there will be no significant off-airport impacts from either alternative.

Induced Socioeconomic Impacts – Affected Environment

The proposed action for Airport Master Plan projects includes aviation-related and aviation-compatible projects. None of the projects, or the proposed action in general creates the need for additional social services or produces a shift in population patterns, or adversely affects businesses. Therefore, no further analysis is required.

3.4 Air Quality – Affected Environment

Regulatory Setting

Air Quality Management

Air quality management responsibilities exist at federal, state and local levels of government. Air quality management planning programs developed during the past decade have generally been in response to requirements established by the federal Clean Air Act. However, the enactment of the California Clean Air Act of 1988 (CCAA) has produced additional changes in the structure and administration of air quality management programs in California.

Federal and State Ambient Air Quality Standards

The State of California and the federal government have established ambient air quality standards for several different pollutants. For some pollutants, separate standards have been set for different periods. Most standards have been set to protect public health. For some pollutants, standards have been based on other values such as crop protection or nuisance avoidance. The pollutants of greatest concern in the Napa Valley are carbon monoxide (CO), ozone and Inhalable particulate matter (PM10). Table 3.4-1 shows the state and federal standards for a variety of air pollutants.

The Clean Air Act (CAA) established National Ambient Air Quality Standards (NAAQS) for six pollutants, termed ‘criteria pollutants.’ The six pollutants are: carbon monoxide (CO), lead (Pb), nitrogen dioxide (NO₂), ozone (O₃), particulate matter (PM-10 and PM 2.5), and sulfur dioxide (SO₂). The Environmental Protection Agency (EPA) designates areas as either attainment or nonattainment for each criteria pollutant based on thresholds contained in the CAA. Napa County is designated an attainment area for all criteria pollutants by EPA.

Air Quality Management at the State Level

The CCAA substantially added to the authority and responsibilities of the state's air pollution control districts. The CCAA establishes an air quality management process that generally parallels the federal process. The CCAA, however, focuses on attainment of the state ambient air quality standards that, for certain pollutants and averaging periods are more stringent than the comparable federal standards.

Existing Air Quality Conditions in Napa Valley

Climate and Meteorological Conditions

The Napa Valley is located between the Mayacamas Mountains to the west and the Vaca Mountains to the east. These mountains are effective barriers to the prevailing northwesterlies with an average ridgeline height of about 2,000 feet, some peaks approaching 3,000 feet and 4,344-foot Mount Saint Helena. The valley is 27 miles long with Napa and Calistoga defining its southern and northern ends, respectively. It is widest, 4.75 miles, at its southern end and narrows northward to less than a mile at Calistoga. A minor pass, Knight's Valley, links the northern end of the valley to the Alexander Valley north of Healdsburg.

An upvalley wind frequently develops during warm summer afternoons drawing from air flowing through the San Pablo Bay. During the evening, especially in the winter, downvalley drainage flow can occur. The second most common winds are down valley drainage winds, north northwesterly through northeasterly, which occur 26 percent of the time. Wind speeds are low with almost 50 percent of the winds between calm and four miles per hour (mph) and an average speed of about five mph. Only five percent of the winds are between 16 and 18 mph that represent strong summer time up valley winds and winter storm winds. Summer average maximum temperatures at the southern end of the valley are in the low 80's, with extremes in the high 80's, and at the northern end are in the low 90's with extremes in the high 90's. Summer minima are in the low 50's. Winter maxima are in the high 50's and low 60's with minima extremes range from the high 20's to the mid 20's. Sunshine is plentiful and annual precipitation averages range from 43 inches at Angwin in the mountains at 1,820 feet, 38 inches at Calistoga to 24 inches at Napa.

The air pollution potential in the Napa Valley could be high if there were sufficient sources of air contaminants nearby. Summer and fall prevailing winds can transport ozone precursors northward from the Carquinez Strait Region to the Napa Valley, effectively trapping and concentrating the pollutants when stable conditions are present. The local upslope and downslope flows created by the surrounding mountains may also recirculate pollutants already present, contributing to buildup of air pollution. High ozone concentrations are a potential problem to sensitive crops, such as wine grapes, as well as to human health. The high frequency of light winds and stable conditions during the late fall and winter contribute to the buildup of particulate matter and carbon monoxide from motor vehicles, agriculture burning and wood burning in fireplaces and stoves.

Ozone

Ozone is not emitted directly into the air, but is formed by a photochemical reaction in the atmosphere. Ozone precursors, which include reactive organic

gases (ROG) and nitrogen oxides (NO_x), react in the atmosphere in the presence of sunlight to form ozone. Because photochemical reaction rates depend on the intensity of ultraviolet light and air temperature, ozone is primarily a summer air pollution problem. Ozone is a respiratory irritant and an oxidant that increases susceptibility to respiratory infections and can cause substantial damage to vegetation and other materials.

State and federal standards for ozone have been set for a 1-hour averaging time. The state 1-hour ozone standard is 0.09 ppm, not to be exceeded. The federal 1-hour ozone standard is 0.12 ppm, not to be exceeded more than three times in any 3-year period. A federal standard for ozone was issued in July 1997 by Executive Order of the President. The ozone standard has been set at a concentration of 0.08-ppm ozone measured over 8 hours. However, in May 1999 a federal appeals court overturned the new standard, preventing the federal government from taking actions based on the new standard.

Carbon Monoxide

State and federal CO standards have been set for both 1-hour and 8-hour averaging times. The state 1-hour standard is 20 parts per million (ppm) by volume, and the federal 1-hour standard is 35 ppm. Both state and federal standards are 9 ppm for the 8-hour averaging period. CO is a public health concern because it combines readily with hemoglobin and thus reduces the amount of oxygen transported in the bloodstream.

Motor vehicles are the dominant source of CO emissions in most areas and generally occur in the immediate vicinity of roadways with high traffic volumes and traffic congestion. High CO levels develop primarily during the winter when periods of light winds combine with the formation of ground level temperature inversions (typically from the evening through early morning). These conditions result in reduced dispersion of vehicle emissions. Motor vehicles also exhibit increased CO emission rates at low air temperatures.

Inhalable Particulate Matter

Health concerns associated with suspended particulate matter focus on those particles small enough to reach the lungs when inhaled. Few particles larger than 10 microns in diameter reach the lungs. Consequently, both the federal and state air quality standards for particulate matter apply to particulate matter 10 microns or less in diameter (generally designated as PM₁₀).

The state PM₁₀ standards are 50 micrograms per cubic meter (μ /m³) as a 24-hour average and 30 μ /m³ as an annual geometric mean. The federal PM₁₀ standards are 150 μ /m³ as a 24-hour average and 50 μ /m³ as an annual arithmetic mean.

PM₁₀ conditions in Napa County are a result of a mix of rural and urban sources, including wood stove and wildfire smoke, controlled burns, agricultural activities,

industrial emissions, dust suspended by vehicle traffic, and secondary aerosols formed by reactions in the atmosphere.

A federal standard for particulate matter less than 2.5 microns in diameter (PM_{2.5}) was issued in July 1997 by Executive Order of the President. PM_{2.5} is sometimes referred to as "fine particulate matter". The new PM_{2.5} standard has been set at a concentration of 15 µ/m³ annually and 65-µ/m³ daily. The federal standard for PM₁₀ is being maintained so that relatively larger, coarser particulate matter continues to be regulated. However, as with the new federal ozone standard, a federal appeals court overturned the new PM_{2.5} standard in May 1999.

General Conformity Thresholds

EPA oversees state and local implementation of CAA requirements. It sets NAAQS for criteria pollutants (discussed below). EPA also sets emission standards for mobile sources, such as on-road and off-road motor vehicles. EPA also sets nationwide standards.

The conformity provisions of the CAA are designed to ensure that federal agencies contribute to efforts to achieve the NAAQS. EPA has issued two regulations implementing these provisions. The general conformity regulation addresses actions of federal agencies other than the Federal Highway Administration and the Federal Transit Administration. General conformity applies to a wide range of actions or approvals by federal agencies. Projects are subject to general conformity if they exceed emissions thresholds set in the rule and are not specifically exempted by the regulation. Such projects are required to fully offset or mitigate the emissions caused by the activity, including both direct emissions and indirect emissions over which the federal agency has some control. Certain Federal actions are exempt from the requirement of the General Conformity Rule because they result in no emissions or emissions are clearly below the rule's applicability emission threshold levels.

A conformity determination is required with the annual net total of direct and indirect emissions from a Federal action occurring in a nonattainment or maintenance area equals or exceeds the annual threshold levels. If a Federal action's emissions are below threshold levels, then the action does not need a conformity determination and is presumed to conform with the applicable SIP, as long as the action is not regionally significant.

A conformity analysis is not required for the Napa Airport action as emissions from the six projects and the entire Airport are below the conformity thresholds for reactive organic gases (ROG) and oxides of nitrogen (NO_x) – they are below the conformity thresholds of 50 tons of ROG and 100 tons of NO_x per year (see Threshold Levels for Non Attainment and Attainment in Appendix B and County Level Emissions and Air Quality by Air Basin (SFBAAB, Napa) and San Francisco Bay Area Air Basin County Emission Trends and Forecasts.)

The above described are directed toward criteria pollutants. The programs in place to reduce public exposure to other pollutants, those that increase the public's risk of developing cancer, are called *hazardous air pollutants* (HAPs) (federal law) and *toxic air contaminants* (TACs) (California law).

Table 3.4-1 Air Quality Standards

Pollutant	Average Timing	California Standards	Federal Standards	Federal Standards
		Concentration	Primary	Secondary
Ozone (O ₃)	1 hour	0.09 ppm (180 µg/m ³)	0.12 ppm (235 µg/m ³)	Same as primary standard
	8 hour	-	0.08 ppm (157 µg/m ³)	
Respirable Particulate Matter (PM ₁₀)	24 hour	50 µg/m ³	150 µg/m ³	Same as primary standard
	Annual Arithmetic Mean	20 µg/m ³	50 µg/m ³	
Fine Particulate Matter (PM _{2.5})	24 hour	No separate standard	65 µg/m ³	Same as primary standard
	Annual Arithmetic Mean	12 µg/m ³	15 µg/m ³	
Carbon Monoxide (CO)	8 hour	9.0 ppm (10 mg/m ³)	9.0 ppm (10 mg/m ³)	None
	1 hour	20 ppm (23 mg/m ³)	35 ppm (40 mg/m ³)	
Nitrogen Dioxide (NO ₂)	Annual Arithmetic Mean	-	0.053 ppm (100 µg/m ³)	Same as primary standard
	1 hour	0.25 ppm (470 µg/m ³)	-	
Sulfur Dioxide (SO ₂)	Annual Arithmetic Mean	-	0.030 ppm (80 µg/m ³)	-
	24 hour	0.04 ppm (105 µg/m ³)	0.14 ppm (365 µg/m ³)	-
	3 hour	-	-	0.5 ppm (1300 µg/m ³)
	1 hour	0.25 ppm (655 µg/m ³)	-	-
Lead	30 day average	1.5 µg/m ³	-	-
	Calendar Quarter	-	1.5 µg/m ³	Same as primary standard

ppm = parts per million

µg/m³ = micrograms per cubic meter

mg/m³ = milligrams per cubic meter

3.5 Water Quality - Affected Environment

Introduction

The Napa County Airport, in southern Napa County is located east of the Napa River near Fagan Slough and adjacent to the Fagan Marsh Ecological Reserve (Figure 3.5-1) designated by the California Department of Fish and Game. Surface water drainage across the Airport flows westerly in channelized portions of Fagan Creek, Sheehy Creek and small un-named drainages. Surface water drainages discharge into the Fagan Marsh, a tidally influenced environment east of the Napa River and west of the Airport and about 8 miles north of San Pablo Bay (northern San Francisco Bay). The Airport is located within the San Pablo Basin as identified within the San Francisco Bay Regional Water Quality Control Board's *Water Quality Plan* (Basin Plan).

Climate - Rainfall

Average precipitation for the Napa River Basin is approximately 34-inches per year (*Napa River/Napa Creek Flood Reduction Project, Final Supplemental EIS/EIR*, March 1999, US Army Corps of Engineers, Sacramento District). The annual rainfall at the Airport is approximately 25-inches. The 100-year six-hour and 24-hour rainfall intensities are 2.5-inches to 3.0-inches and 5.0-inches to 6.0-inches, respectively (Western Regional Climate Center, 1998). The majority of the annual precipitation occurs during the months of November through April.

Surface Water

Fagan Creek

Fagan Creek is a westerly trending drainage that rises east of the Airport in the foothills near the Napa-Solano County line. The creek is tributary to Fagan Slough which discharges into the Napa River (Figure 3.5-1). Within the Airport, Fagan Creek is channelized and has been re-directed northwesterly before being relocated into box culverts that cross under the northern portion of the Airport. A 450-foot long portion of the creek forms a riparian corridor on the northwesterly Airport boundary before discharging into Fagan Slough. There are no gauging stations or available reports that provide stream flow estimates for Fagan Creek.

Sheehy Creek

Sheehy Creek is the Airport's northern boundary. The creek channel, although not channelized has been altered as part of Napa Valley Gateway's Sheehy Creek Enhancement and Realignment Project. The enhancement and realignment agreement between the Napa Valley Gateway Business Park and the USACOE was executed prior to Napa County's purchase of the property. Napa County is

responsible for the permit conditions (USACOE, San Francisco District, permit number 24755N), including:

The permittee shall implement the *Wetlands Mitigation and Monitoring Plan for the Napa Valley Gateway Limited Properties Napa Valley Gateway Business Park, Napa California* prepared by Lucy McMillan [sic], Wetlands Specialist and dated June 2002.

In addition to implementing the mitigation and monitoring plan referenced above, the permittee shall ensure that a conservation easement, restrictive covenant, deed restriction, or other appropriate land encumbrance is completed and registered with the County Recorder's Office, specifying the preservation of the mitigation area as a wetland and riparian habitat in perpetuity.

In conjunction with the enhancement and realignment of Sheehy Creek, the USACOE also verified the wetland delineation for the triangular piece of property north of the railroad tracks and south of Sheehy Creek which Napa County purchased in 2004 as part of an RPZ for Runway 18L. A detailed discussion regarding this wetland delineation is in Chapter 4.11 of this EA.

Un-named Drainageway

An un-named drainageway crosses the southern portion of the Airport for a distance of approximately 2,000 linear feet, and carries ephemeral flows northwesterly into Fagan Slough. This drainageway also crosses the Borges-Atkins property, which the County has proposed for acquisition as part of the Airport Master Plan.

The un-named creek is blocked from Fagan Marsh by a berm and a culvert that allows freshwater flows to leave the creek, but prohibits tidal inundation from coming upstream. The Napa County Resources Conservation District modeled creek hydrology and suggested that if lower portion of the creek were opened up to the tidal influence from Fagan Marsh, the resulting inundation would be limited to low-lying areas along the creek and would not be increased by freshwater flooding. Allowing the tides to enter the creek watershed would greatly enhance the estuarine habitat and increase biological diversity. (Napa County Resources Conservation District, 2004).

Internal Airport Drainage

Internal Airport drainage consists of man-made linear features, small irregularly shaped closed depressions, and culverts and weir structures that direct surface water towards Fagan Marsh. Most of these surface water features are mapped and evaluated for potential jurisdictional status as waters of the United States in the (Napa County Airport Wetland Delineation, 2006). The wetland delineation

identified vernal pools, intermittent drainages, seasonal wetlands, wetland swales, ephemeral drainages and perennial marsh (discussed in detail in Chapter 3.10).

The Airport has developed a master drainage plan (Brandley, 2004) that accounts for proposed projects that require surface water drainage changes – Taxiway ‘J’ extension and Runway 36R extension. Although slightly modifying drainage patterns in the vicinity of the projects, overall internal drainage patterns are not substantially changed. Surface water drainage still flows general southwesterly into the un-named creek and Fagan Marsh.

Fagan Marsh Ecological Reserve

The Fagan Marsh Ecological Reserve, designated by the California Department of Fish and Game and within the jurisdiction of the San Francisco Bay Conservation and Development District (BCDC) is 330-acres in size and is located adjacent to the Airport’s western boundary. This intertidal marsh is the discharge area for all surface water from the Airport, and ultimately discharges into the Napa River via Fagan Slough. Fagan Slough, the primary channel in the reserve is tidally influenced and represents the mixing zone of the freshwater from Fagan and Sheehy Creeks and un-named freshwater drainages and the fluctuating tidal and freshwater mixture of the Napa River.

A 5.28-acre portion of the Fagan Marsh Ecological Reserve encroaches on to Airport property along the western property line (Figure 2-2), north of Runway 6. This portion of Fagan Marsh receives surface water runoff from areas west of Runway 18R-36L and is tidally influenced via a channel connected to the main portion of the marsh. It is separated from the active runways by low levees on the east and south and by raising topography on the north.

Napa River

Napa River is one of the largest California Central Coast Range rivers draining 426 square miles along its 50-mile course from Mt. St. Helena to San Pablo Bay. The last 17 miles, from Trancas Street in Napa to the City of Vallejo, are an estuary system, including the reach west of the Airport. During summer months the salinity at Trancas Street may be 10 per cent, in winter, it is freshwater.

The Napa River and its 47 tributaries flow through the heart of an intensely farmed and partially urbanized valley. At one time, a dense canopy of riparian habitat dominated by cottonwoods and willows lined the river's upper reaches. For the most part, the gallery forest bordering the riparian zone is gone and the remaining vegetation exists only in the channel (Friends of the Napa River).

Flooding

Napa County has experienced 27 major flood events since 1862 along the Napa River. On the Airport, Fagan Creek has periodically flooded along the eastern portion of the Airport, probably the result of the box culvert system unable to carry the high flows from the channelized portion of the creek. According to Napa County, these flood events have coincided with heavy rains and high tides that affected the Napa River and Fagan Slough. A flood event occurred in January 2006, and caused the Airport to close for several hours.

Napa County reports that the un-named drainage on the southern portion of the Airport is prone to flooding during heavy rains and high tides in the Napa River.

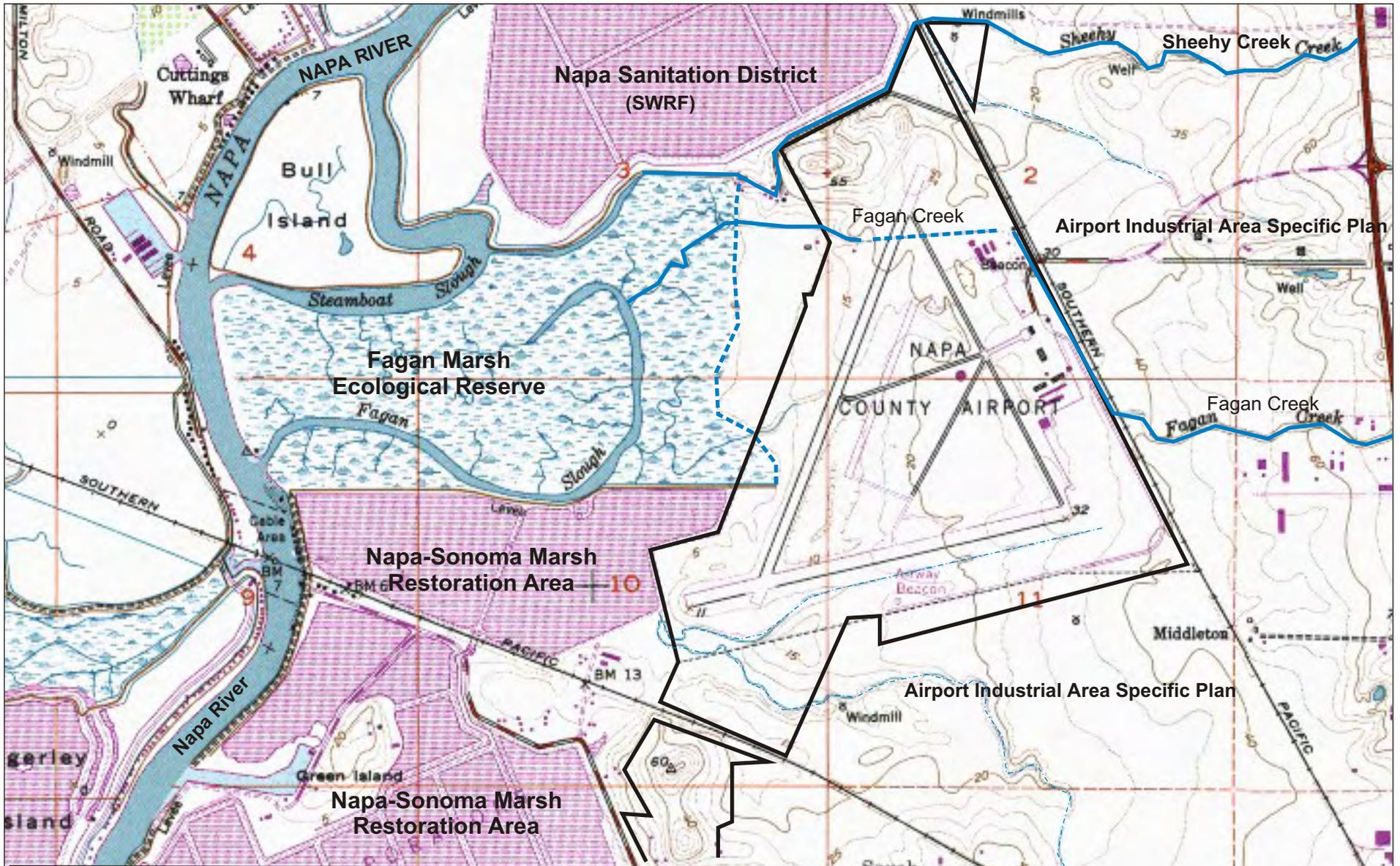
Section 3.11 discusses the relationship between floodplains and the Airport.

Groundwater

The principal water-yielding materials in the southern Napa Valley are unconsolidated and semi-consolidated marine and continental sediments (USGS, 1998). Regionally, continentally derived alluvial fan deposits and stream valley alluvium compose the majority of the aquifer. Groundwater recharge usually occurs along the margins of the valley, primarily as runoff from precipitation. On an average annual basis, groundwater recharge and withdrawals are approximately in balance. However, saltwater intrusion caused by over pumping has been recognized in the southern Napa River Valley near San Pablo Bay (USGS, 1998).

Within the vicinity of the Airport, most groundwater extraction occurs in the Napa/American Canyon area (Napa County, 1986). The Airport lies within the Airport Subarea groundwater basin, of the Napa Valley. A heavy clay layer underlain by a coarser grained aquifer characterizes this subarea basin. Soil conditions indicated that groundwater occurs at six feet below the existing ground level. Only a minimal amount of recharge occurs on land west of State Highway 29, most is the result of subsurface flow from groundwater basins north of the Airport (Napa County, 1986).

No producing wells currently operate on the Airport. Two abandoned agricultural wells have been located south of Sheehy Creek (noted by remains of their windmills). There are no records of potable water wells on the Airport. Few producing groundwater wells exist east of the Airport, and some have experienced salty and brackish tasting water, although no saltwater intrusion has been reported (Napa County, 1986).



Surface Water Features
Napa County Airport

Napa County Airport Master Plan
Draft Environmental Assessment
December 2007


NORTH
 Scale: 1" = 3,500'

Figure 3.5-1

3.6 Department of Transportation Act, Section 4(f) [Recodified at 49 USC 303] – Affected Environment

Introduction

FAA Order 5050.4B, Paragraph 47(7)(a) and FAA Order 1050.1E, Section 6, subsection 6.1 states:

Section 4(f) (recodified and renumbered as section 303(c) of 49 U.S.C.) of the DOT Act provides that the Secretary shall not approve any program or project which requires the use of any publicly owned land from a public park, recreation area, or wildlife and waterfowl refuge of national, state, or local significance or land of an historic site of national, state, or local significance as determined by officials having jurisdiction thereof unless there is no feasible and prudent alternative to the use of such land and such program or project includes all possible planning to minimize harm from the use.

When there is no physical taking, but there is the possibility of constructive use, the FAA must determine if the impacts would substantially impair the 4(f) resources (FAA Advisory Circular 1050.1E, Section 6, Paragraph 6.2e). If there would be no substantial impairment, the action would not constitute a constructive use and would not therefore invoke section 303(c). Substantial impairment occurs only when the activities, features, or attributes of the resource that contributes to its significance or enjoyment are substantially diminished.

Fagan Marsh Ecological Reserve

Fagan Marsh Ecological Reserve was established in 1979 and supports an intertidal and estuarine habitat between the Napa River and the Airport (Figure 2-2). A 5.28-acre portion of the marsh extends onto Airport property north of Runway 6 and west of Runway 18L. The marsh is owned and managed by the California Department of Fish and Game (CDFG). The portion of the marsh on the Airport is owned by Napa County, but falls under joint management jurisdiction with the County and CDFG.

Although no specific objectives were provided for the Ecological Reserve designation, Fish and Game Code, Section 1580 under Article 4, Ecological Reserves, states that “the policy of the state is to protect threatened or endangered native plants, wildlife, or aquatic organisms or specialized habitat types, both terrestrial and non-marine aquatic, or large heterogeneous natural gene pools for the future use of mankind through establishment of ecological reserves.” Although the language does not specifically refer to ecological reserves in marine areas, the Fish and Game Commission has extended this policy to those areas.

Based on the accepted definition of an ecological reserve, the fence proposed along the Airport’s western property line might have a direct and/or indirect effect on the ecological reserve, an area that qualifies as ecologically significant.

Mitigation measures to reduce potential impacts to a minor level are discussed in the environmental consequences sections (4.1 through 4.9) of this EA.

The proposed action includes one project that may affect the Fagan Marsh: construction of a security fence. The security fence crosses about 650 linear feet of Fagan Marsh on Airport property. The fence will create a barrier and deterrent to unauthorized personnel, but should not impede or create any other impairment to wildlife or plant communities, except deer. The Airport staff has recently reported that they have seen deer on the Airport, generally an uncommon occurrence. Since deer represent a significant danger to aircraft operations on the ground, the security fence, which will limit access to 5.28-acres of the marsh (Fagan Marsh has a total area of 330-acres), also helps minimize aircraft/deer incidents.

Fence construction will temporarily affect about 0.4-acres of Marsh on the east side of the fence, an area equal to 650 ft X 25 ft. This construction disturbance includes creating a temporary track along which a small auger drill rig will be used to drill fence postholes and for pickup trucks to carry fence supplies. After construction, the track will be abandoned. There are no long-term effects associated with construction activities.

Immediately west of the fence line, the Airport is separated from the marsh by a shallow slough and levee. These two features act in concert to provide additional separation between the Airport and the majority of the Fagan Marsh.

The construction of a security fence through the Airport's portion of Fagan Marsh does not represent a substantial impairment. Therefore, under Section 303 of the DOT Act, the proposed action does not require any further analysis.

3.7 Historical, Archaeological, and Cultural Resources – Affected Environment

This chapter discusses the cultural context of the Airport, identifies cultural resources in the vicinity, and describes the specific regulatory framework that the FAA follows for cultural resources management.

“Cultural resources” is the term used to describe several different types of properties: prehistoric and historical archeological sites; architectural properties, such as buildings and bridges, and infrastructure; and resources important to Native Americans.

ECORP, Consulting, Inc. (January 2003), in compliance with Section 106 of the National Historic Preservation Act (NHPA) conducted a comprehensive cultural resources inventory and evaluation of the Airport for proposed projects under a Categorical Exclusion. Additional cultural resources evaluations have been conducted for projects either on, or in the vicinity of the Airport: Airport Industrial Area Specific Plan and EIR (1994); Archaeological Survey and Evaluation for the Napa County Sanitation District Master Plan Update, (1991), and Beringer Wine Estates, Devlin Road Facility, Draft Environmental Impact Report (2001).

Regulatory Framework: Section 106 of the National Historic Preservation Act

The proposed actions have been planned in compliance with Section 106 of the NHPA. Section 106 of the NHPA requires that before beginning any federal undertaking, a federal agency must take into account the effects of the undertaking on properties that may be eligible for listing in the NRHP and afford the Advisory Council on Historic Preservation (ACHP) and other interested parties an opportunity to comment on the action. Specific regulations regarding compliance with Section 106 state that, although the tasks necessary to comply with Section 106 may be delegated to others, the federal agency (in this case the FAA) is ultimately responsible for ensuring that the Section 106 process is completed according to statute.

The FAA is the lead federal agency responsible for compliance with federal regulations. In January 2003, ECORP Consulting completed a cultural resources evaluation of the Airport. Those results were forwarded to the FAA. The FAA subsequently presented all of the findings, Native American correspondence and conclusions to the California State Parks, Office of Historic Preservation (SHPO). The FAA has completed its requirements under Section 106.

The FAA must determine whether the proposed federal action is an ‘undertaking’ as defined by 36 CFR 800.169y). Compliance with the National Historic Preservation Act (NHPA) is required by law for all Federal undertakings. Undertaking is defined in the NHPA’s implementing regulations as a project,

activity, or program funded in whole or in part under the direct or indirect jurisdiction of a Federal agency, including those carried out by or on behalf of a Federal agency; those carried out with Federal financial assistance; and those requiring a Federal permit, license or approval. Under this definition, the FAA has determined that the proposed action on the Napa County Airport is an undertaking.

The FAA must determine the “area of potential effects” (APE) associated with a potential undertaking. Section 800.16(d) of the Advisory Council on Historic Preservation’s (ACHP) regulations defines the APE as “the geographic area or areas within which an undertaking may directly or indirectly cause changes in the character or use of historic properties, if any such properties exist. The area of potential effects (Figure 3.7-1) is influenced by the scale and nature of the undertaking and may be different for different kinds of effects caused by the undertaking.” As applied to the analysis of the proposed action for this EA, the FAA interprets this definition to be the specific locations where ground-disturbing activities would occur and may affect historic properties.

The FAA must determine if any activities associated with the proposed action have the potential to cause adverse effects on cultural resources. The ACHP regulations do not specify a particular level of literature review or field survey that must be completed for undertakings. Section 800.4(1) of the regulations directs the FAA to make a “reasonable and good faith effort to identify historic properties [cultural resources] in consultation with the SHPO, taking into consideration the magnitude and nature of the undertaking and degree of Federal involvement.”

The FAA conducted a literature search and field survey of the entire Airport (ECORP 2003) to determine the potential for adverse effects to cultural resources with the APE. The complete report is attached to this EA as Appendix A.

Cultural Resources Identified in the Vicinity of the Airport

Cultural resource artifacts and potentially sensitive cultural resource areas have been identified on, and in the vicinity of, the Airport:

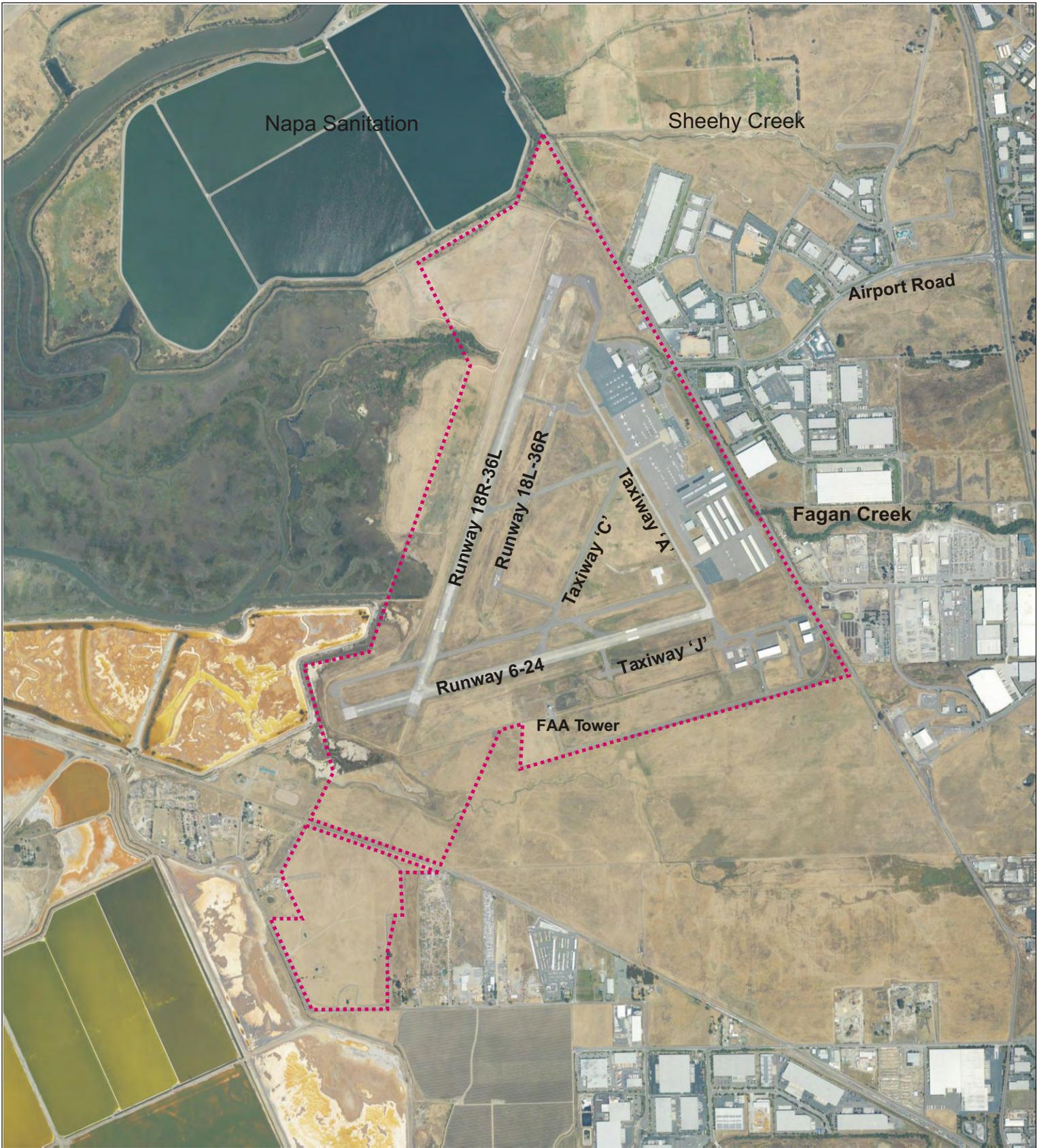
- On the Airport there is one recorded artifact site (CA-NAP-771), a sparse lithic scatter, with four obsidian and one chert flakes. This site is not located in an area to be disturbed by the proposed action.
- There are at least two lithic scatter sites along the Airport boundaries, one south of the FAA tower, and the other east of Fagan Creek.
- Creeks and streams in the area, including Fagan Creek, Sheehy Creek and the un-named creek, may have supported some form of prehistoric activity. It is likely that groups visited these creek environments only seasonally on gathering expeditions (Napa County, 1994). Fagan Creek has been channelized and placed in culverts for nearly its entire length

through the Airport; it is unlikely that any cultural resources remain along its original channel, now completely altered by past Airport activities. Sheehy Creek channel has been altered across the northern portion of the Airport and is also unlikely to yield cultural resources. The un-named creek remains in a channel that has been degraded by cattle and agricultural activities. There are no recorded sites in the channel, but it is the only “undisturbed” creek environment on the Airport.

- Based on ethnographic settlement models and the distribution of known prehistoric shellmounds in the Napa River Region, the 20-foot contour elevation at the edge of the Napa River Floodplain was identified as an area where shellmounds, fishing and fowling campsites, vegetables gathering/processing sites and other task specific could be located. No sites corresponding to this description have been identified on the Airport.
- Seasonal wetlands including vernal pools, marshes and ponded areas within intermittent drainages have been known to be associated with artifacts and lithic scatter from temporary use of the area by prehistoric inhabitants. It is unlikely that any of the wetland features on the Airport support prehistoric sites since the Airport is constructed on five feet of fill (ECORP 2003) and the wetland features on the Airport are likely the result of recent (post 1942) drainage patterns and soil settlement.

None of the archaeological sites are eligible for listing on the NRHP (ECORP 2003). The FAA included in its cultural resources analysis coordination with the SHPO (May 7, 2003); coordination with the Native American Heritage Commission ((December 31, 2002), and coordination with the Mishewal-Wappo Tribe of Alexander Valley (January 9, 2003). None of the agencies or tribes contacted during the cultural resources analysis recommended any further studies, and none raised any objections to the proposed action.

The FAA has determined that no cultural resources within the APE are subject to the NHPA or any other laws covering specific types of cultural resources. Therefore, no further analysis is needed.



Napa County Airport
Area of Potential Effect
 Napa County Airport Master Plan
 Draft Environmental Assessment
 December 2007



NORTH

Scale: Approx. 1" = 1,600'

Figure 3.7-1

..... Area of Potential Effect

Aerial photography by Geoimagery, Auburn, California

3.8 Fish, Wildlife and Plants – Affected Environment

This section discusses federal laws, policies and regulations that influence management and protection of biological resources. This section also provides information on biotic communities located in and immediately adjacent to the Airport.

Biological Resource Management

Section 7 of the federal Endangered Species Act (ESA) applies to federal agency actions and sets forth requirements for consultation to determine if the proposed action “may affect” an endangered or threatened species. If an agency determines that an action “may affect” a threatened or endangered species, then Section 7(a)(2) requires each agency to consult with USFWS or National Marine Fisheries Services (NMFS), as appropriate, to ensure that any action the agency authorizes, funds, or carries out is not likely to jeopardize the continued existence of any Federally listed endangered or threatened species or result in destruction or adverse modification of critical habitat. Additionally, Section 9 prohibits a Federal agency from taking, without an incidental take permit, any endangered species.

The USFWS has designated most of the Airport as Critical Habitat for the Vernal pool fairy shrimp.

Federally Designated Critical Habitat

Some of the proposed projects addressed in this EA fall within the boundaries of a Critical Habitat unit (Unit 17) for Vernal pool fairy shrimp (*Branchinecta lynchi*) as designated by the USFWS (Figure 3.8-1).

Final ruling on critical habitat for the Vernal pool fairy shrimp was established by USFWS in August 2005. In February 2006, the USFWS issued its final administrative determination for critical habitat for Vernal pool fairy shrimp in California and Oregon. One of the California critical habitat units, Unit 17-Napa River Unit (USGS 1:24,000 scale quadrangle Cuttings Wharf), includes most of the Napa County Airport as shown in Figure 3.8-1. According to the Federal Register Notice (February 10, 2006, Volume 71, No. 28):

The Napa River unit [Unit 17] represents the western extent of the species’ [vernal pool fairy shrimp] range. This unit represents the only area where vernal pool fairy shrimp occur in vernal pool habitats forming a transition zone with tidal marshes. The boundaries of this unit were designed to include vernal pool complexes mapped by Holland (1998) and within the Fagan Marsh Ecological Area owned by CDFG.

Unit 17 is also described as forming a narrow strip along the northwestern banks of the Napa River. However, the Airport is approximately one mile east of the Napa River. The UTM coordinates listed in the Federal Register (February 10, 2006) describe an area primarily within the boundaries of the Airport. The unit, as described by the UTM coordinates, is marginally hydrologically connected to tidal activities.

When originally proposed, the USFWS included, as part of Unit 17, the Fagan Marsh Ecological Reserve that adjoins the Airport on the west. However, Fagan Marsh area was removed from the unit when the USFWS determined that the CDFG owned the marsh and would manage it for habitat conservation. Approximately 5.28 acres of the Fagan Marsh are located within the Airport along its western boundary and are not included as critical habitat in Unit 17. USFWS assumes that this area will be managed, at least in part, by the CDFG.

Critical Habitat: California Annual Grassland (Vernal Pool Fairy Shrimp)

California annual grassland is the dominant vegetation community present on the Airport and within the designated critical habitat. Airport staff maintains much of this community type by mowing adjacent to runways, taxiways and aircraft facilities. Dense vegetative cover of mostly non-native, naturalized Mediterranean grasses that have supplanted the native grass species characterizes this community type. Perennial ryegrass (*Lolium multiflorum*) provides consistent grass cover, while Medusa-head rye (*Taenitherum caput-medusae*), assorted bromes (*Bromus hordaceus* and *B. diandrus*), and wild oats (*Avena barbata* and *A. fatua*) are also present. Associated forbs include mostly non-native species like bristly ox-tongue (*Picris echioides*), wild radish (*Raphanus sativus*), clovers (*Trifolium hirtum* and *T. subterraneum*), vetches (*Vicia sativa* and *V. villosa*), field bindweed (*Convolvulus arvensis*), mustards (*Brassica nigra* and *B. rapa*), and yellow starthistle (*Centaurea solistatus*).

Most of the grassland community has been disturbed by various activities. The Airport infields and shoulders of the runways and taxiways are regularly mowed. Under an agreement with the Airport, Napa Sanitation Department disks, distributes biosolids, and plants various grass seed mixes in the western, southern, and northern portions of the Airport, generally away from aircraft operations.

Within the California annual grassland community are two micro plant communities: vernal pools and seasonal wetlands (Refer to Sections 3.10 and 4.8).

Several small vernal pools are located within the California annual grassland in the southern and northern portions of the Airport (Figure 3.10-1). Vernal pools are small topographic basins within a grassland community, and typically are underlain by an impermeable or semi-permeable hardpan or duripan layer. Within the grassland community, vernal pools are inundated up to one foot through the wet season and are dry by late spring. The plant community

composition within vernal pools is predominantly native species, including slender popcorn flower (*Plagiobothrys stipitatus*), button celery (*Eryngium aristulatum*), Carter's buttercup (*Ranunculus bonariensis*), and annual hairgrass (*Deschampsia danthonioides*). Non-native plants including hyssop loosestrife (*Lythrum hyssopifolium*), curly dock (*Rumex crispus*), and toad rush (*Juncus bufonius*) are also present.

Seasonal wetlands are scattered throughout the California annual grassland. Typical vegetation encountered in the topographic lows and swales of the California annual grassland is comprised of grasses including Mediterranean barley (*Hordeum marinum* ssp. *gussoneum*), Harding grass (*Phalaris aquatica*), annual hairgrass (*Aira caryophylla*), annual fescue (*Vulpia bromoides*), chess (*Bromus secalinus*), annual rabbit-foot grass (*Polypogon monspeliensis*), little quaking grass (*Briza minor*) and a few occurrences of jointed goatgrass (*Aegilops cylindrica*) mixed in with inland saltgrass. Common herbaceous species include curly dock, brass-buttons (*Cotula coronopifolia*), and scarlet pimpernel (*Anagallis arvensis*), while occasional spring centaury (*Centaurium davyi*), hedge nettle (*Stachys ajugoides*), hyssop loosestrife (*Lythrum hssopifolium*), spiny-fruit buttercup (*Ranunculus muricatus*) are also present.

Formerly wet areas are dominated by a predominance of California annual grassland species including perennial ryegrass, Medusa-head rye, field bindweed, and vetches. Ephemeral drainages located within the annual grassland in the airport infields also support hydrophytic vegetation, especially concentrated near the outflow. These channels are dominated by saltmarsh bulrush (*Scirpus maritimus*), cattail, annual rabbit-foot grass, and curly dock. The slopes adjacent to this channelized runoff are dominated by grasses including inland saltgrass and meadow barley (*Hordeum brachyantherum*), and chess. Additional herbaceous cover is provided by curly dock and hedge nettle.

An additional seasonal wetland is located on the former Borges Atkins property in the un-named creek. The seasonally inundated portions of the creek are vegetated by aquatic species including water plantain (*Alisma lanceolatum*) and duckweed (*Lemna* sp.), with dominant grasses and grass-like cover provided by brown-headed rush (*Juncus phaeocephalus*) and joint paspalum (*Paspalum distichum*).

Within the Airport, California annual grassland is habitat for birds, small mammals and the location for vernal pools, habitat for fairy shrimp (*Branchinecta lynchi*), listed as threatened by the USFWS. Grassland on the Airport is generally mowed and maintained but serves as habitat to a variety of rodents including black-tailed hare (*Lepus californicus*), Botta pocket gopher (*Thomomys bottae*) California meadow mouse (*Microtus californicus*) and western harvest mouse (*Reithrodontomys megalotis*). Other species that utilize the grassland habitat may include striped skunk (*Mephitis mephitis*), raccoon (*Procyon lotor*), opossum (*Didelphis marsupialis*) and a variety of song birds.

The grassland also serves as foraging habitat for red-tailed hawk (*Buteo jamaicensis*), American kestrel (*Falco sparverius*), Northern harrier (*Circus cyaneus*), white tailed kite (*Elanus leucurus*) and turkey vulture (*Cathartes aura*). These birds may nest in riparian corridors or in the foothills east of the Airport.

Other Biotic Communities

Within the Airport, and the USFWS designated Critical Habitat unit, are three other biotic communities: perennial salt marsh, seasonal salt marsh and a riparian corridor. Each community is described below. Section 3.9 describes federally listed threatened and endangered species on and near the Airport.

Perennial Salt Marsh

Perennial salt marsh community types are found in nearly level areas of Fagan Marsh, and follow a hydrologic gradient. Shallowly inundated areas host dense, low-growing stands of pickleweed (*Salicornia virginica*) that is interspersed with fat-hen (*Atriplex triangularis*) and inland saltgrass (*Distichlis spicata*). Adjacent to this are deeply inundated areas densely vegetated by cattail (*Typha domingensis*) and hardstem bulrush (*Scirpus acutus*).

The following discussion applies primarily to the 330-acre Fagan Marsh Ecological Reserve, of which about 5.28-acres encroaches onto the Airport. Fagan Marsh is an important local and region intertidal marsh and the proposed action for which this EA is written may have direct and/or indirect effects to the eastern edge of the marsh.

The perennial salt (tidal) marsh on the western edge of the Airport supports a variety of animals in both terrestrial and aquatic habitats. Tidal marsh habitats are exposed to frequent tidal inundation by brackish and saline water. Species composition is determined by both inundation depth and water salinity. Within the wetland system, salinity fluctuates with season and with distance from respective fresh or saline water sources. California cord grass and California bulrush are able to tolerate longer and deeper submergence than salt grass and pickleweed.

The presence and distribution of mammals within the marsh is related to the extent of inundation or saturation by tidal action and freshwater flows. Some species such as river otter, beaver and muskrat remain limited to aquatic habitats such as the tidal marsh and riparian habitats. Other species such as raccoons, Virginia opossum, striped skunk, feral cats, and the Norway rat are more opportunistic and occur in and around the water and drier upland sites.

Two federally listed animal species are assumed to reside in the Fagan Marsh environs: Salt-marsh harvest mouse (endangered) and the California clapper rail (endangered). Both of these species are described in Section 3.9.

Fagan Marsh, and San Pablo Bay marshes are areas of paramount importance to waterfowl in the San Francisco Bay area. (U.S. Fish and Wildlife Service 1989a) Twenty-four percent of the Pacific Flyway population of diving ducks winter on the California coast and most of these are found in San Francisco Bay, particularly the North Bay (U.S. Fish and Wildlife Service, 1979).

Raptors have been seen throughout the marsh. Black-shouldered kites hunt mainly for meadow mice and spend more time hunting over grassland areas than over bulrushes and cord grass. Resident red-tailed hawks and turkey vultures hunt throughout the area. The most common falcon in the area is the resident American kestrel.

As many as twenty-three species of shorebirds may inhabit the marsh. Fagan Marsh provides abundant mudflat for foraging shorebirds and a limited amount of high ground for roosting areas during high tides and storms.

Many passerine species are associated with the tidal marsh, upland, and riparian habitats found in and around the marsh area including cliff and barn swallows, marsh wren, salt marsh common yellowthroat, and San Pablo song sparrow. In the freshwater riparian habitats at Fagan and Sheehy Creeks, red-winged blackbirds and house finches are usually encountered throughout the year. Yellow-rumped warblers and white-crowned sparrows are common in the riparian and upland areas. Passerine diversity is highly seasonal and associated with the habitat types found in the vicinity of Fagan Marsh.

Seasonal Salt Marsh

Salt marsh seasonal wetland community types are present on the western and southern perimeter of the airport, adjacent or in proximity to the un-named creek and Fagan Marsh. Plant species found here are adapted to various concentrations of salts and depths of seasonal inundation. Two distinct vegetation communities are present correlated to the hydrologic gradient. At elevations above and adjacent to the tidal mud flats, mini-playas are vegetated along the playa margin with inland saltgrass, brass-buttons, curly dock, annual rabbit-foot grass, and occasional clumps of soft rush (*Juncus effusus*). Adjacent to the marsh, other seasonally wet areas are dominated by tall whitetop (*Lepidium latifolium*) and a cinquefoil (*Potentilla* sp.), with seaside arrowgrass (*Triglochin maritimum*), Baltic rush (*Juncus balticus*), and the infrequent marsh gumplant (*Grindelia stricta*) providing additional shrub cover.

Riparian Corridor

Riparian vegetation is confined in a riparian corridor associated with Fagan Creek. The riparian corridor of Fagan Creek, as it exists on the western edge of the Airport, includes arroyo willow (*S. lasiolepis*), and is present in a fairly continuous tree overstory along the north bank, with the immediate understory dominated by giant horsetail (*Equisetum telmateia*) and poison hemlock (*Conium*

maculatum). Orchard grass (*Dactylis glomerata*) and water speedwell (*Veronica americana*) are present at the water's edge. The unshaded, open area adjacent to the willow overstory is dominated by giant horsetail, blackberry and willow-herb (*Epilobium* sp.), with occasional clumps of Harding grass. Hydrophytic vegetation such as cattail, hardstem bulrush, and smartweed (*Polygonum* spp.), is established in the creek channel where sediment has accumulated and in areas of low or slower flows.

That portion of Fagan Creek bordering the east side of the Airport lacks a willow tree overstory. Dominant plant species here include smooth scouring rush (*Equisetum laevigatum*), Himalayan blackberry (*Rubus discolor*), bristly ox-tongue, Harding grass, cattail and occasional tall flatsedge (*Cyperus eragrostis*). The slopes of the trapezoidal channel associated with this portion of the creek are densely vegetated with California annual grassland species.

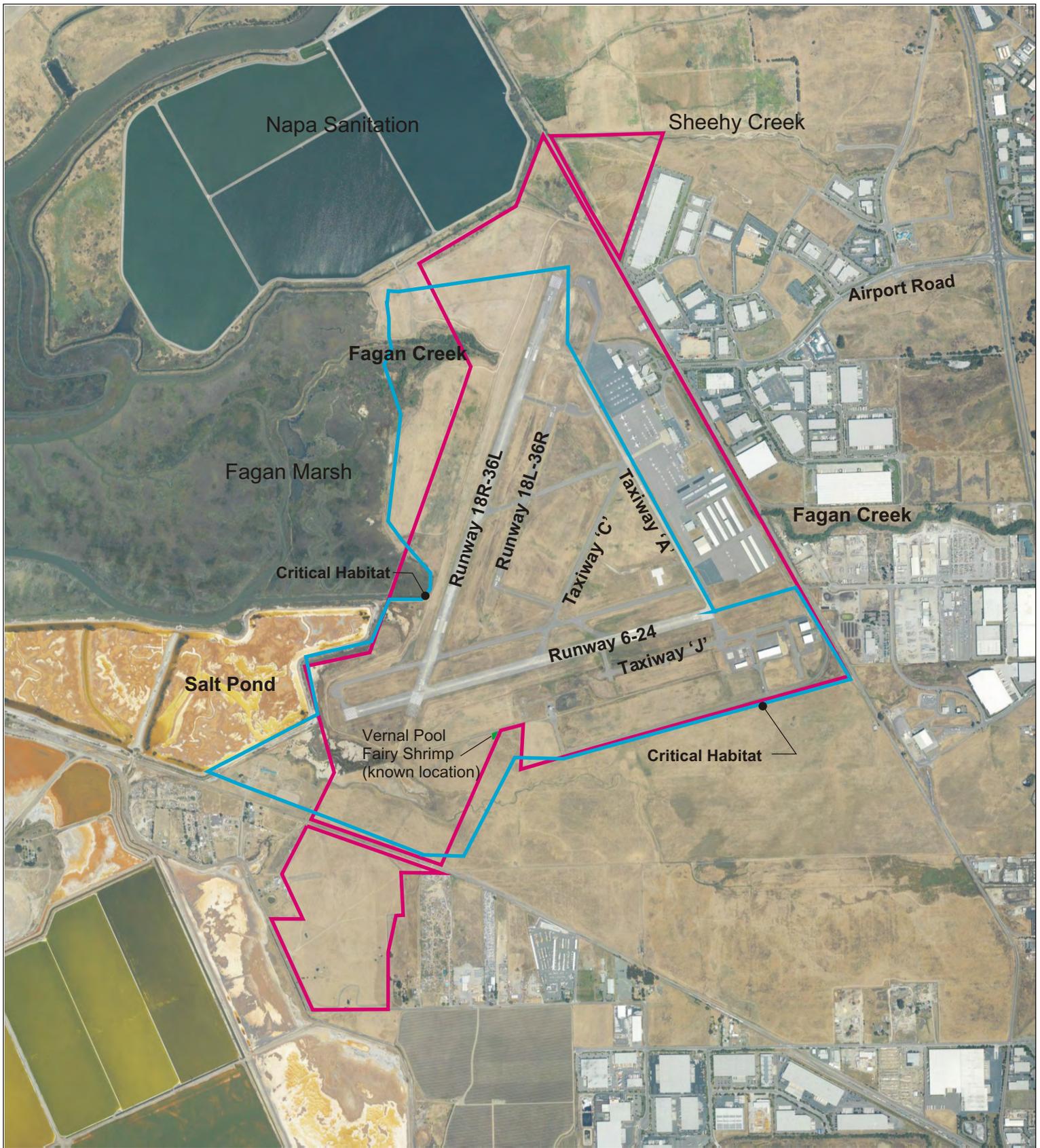
Table 3.8-1
Plant Species Compilation List

Scientific Name	Common Name
<i>Aegilops cylindrica</i>	Jointed goatgrass
<i>Aira caryophyllea</i>	Annual hairgrass
<i>Alisma lanceolatum</i>	Water plantain
<i>Ambrosia psilostachya</i>	Cuman ragweed
<i>Anagallis arvensis</i>	Scarlet pimpernel
<i>Aster lentus</i>	Suisun Marsh aster
<i>Atriplex triangularis</i>	Fat-hen
<i>Avena fatua</i>	Wild oat
<i>Avena barbata</i>	Slender wild oat
<i>Baccharis pilularis</i>	Coyote brush
<i>Bellardia trixago</i>	Mediterranean linseed
<i>Brassica nigra</i>	Black mustard
<i>Brassica rapa</i>	Turnip field mustard
<i>Briza minor</i>	Little quaking grass
<i>Bromus diandrus</i>	Rippgut brome
<i>Bromus hordeaceus</i>	Soft brome
<i>Bromus secalinus</i>	Chess
<i>Calandrinia ciliata</i>	Fringed redmaids
<i>Callitriche spp.</i>	Water starwort
<i>Carduus pycnocephalus</i>	Italian plumeless thistle
<i>Centaurea solstitialis</i>	Yellow star-thistle
<i>Centaureum davayi</i>	Spring centauray
<i>Cichorium intybus</i>	Chicory
<i>Cirsium vulgare</i>	Bull thistle
<i>Conium maculatum</i>	Poison hemlock
<i>Convolvulus arvensis</i>	Field bindweed
<i>Cotula coronopifolia</i>	Brass-buttons
<i>Crassula aquatica</i>	Water pygmy weed
<i>Cressa truxillensis</i>	Alkali weed
<i>Cynodon dactylon</i>	Bermuda grass
<i>Cyperus eragrostis</i>	Tall flatsedge
<i>Dactylis glomerata</i>	Orchard grass
<i>Deschampsia danthonioides</i>	Annual hairgrass
<i>Dichelostemma multiflorum</i>	Wild hyacinth
<i>Distichlis spicata</i>	Inland saltgrass
<i>Eleocharis macrostachya</i>	Creeping spikerush
<i>Elymus glaucus</i>	Blue wildrye
<i>Epilobium brachycarpum</i>	Panicled willow-herb
<i>Epilobium ciliatum ssp. ciliatum</i>	Fringed willow-herb

Scientific Name	Common Name
<i>Equisetum laevigatum</i>	Smooth scouring rush
<i>Equisetum telmateia</i>	Giant horsetail
<i>Eremocarpus setigerus</i>	Dove weed
<i>Erodium botrys</i>	Longbeak stork's bill
<i>Erodium moschatum</i>	Musky stork's bill
<i>Eryngium aristulatum</i>	Button-celery
<i>Foeniculum vulgare</i>	Sweet fennel
<i>Geranium dissectum</i>	Cut-leaved geranium
<i>Geranium molle</i>	Hairy geranium
<i>Glyceria declinanata</i>	Mannagrass
<i>Glyceria sp.</i>	Mannagrass
<i>Grindelia stricta</i>	Marsh gumplant
<i>Hordeum brachyantherum</i>	Meadow barley
<i>Hordeum marinum ssp. gussoneanum</i>	Mediterranean barley
<i>Hypochaeris glabra</i>	Smooth cat's-ear
<i>Juncus balticus</i>	Baltic rush
<i>Juncus bufonius</i>	Toad rush
<i>Juncos effusus</i>	Soft rush
<i>Juncus ensifolius</i>	Three-stamened rush
<i>Juncus occidentalis</i>	Western rush
<i>Juncus patens</i>	Spreading rush
<i>Juncus phaeocephalus</i>	Brown-headed rush
<i>Lactuca serriola</i>	Prickly lettuce
<i>Leymus triticoides</i>	Creeping wildrye
<i>Lilaea scilloides</i>	Flowering quillwort
<i>Lolium multiflorum</i>	Perennial ryegrass
<i>Lotus corniculatus</i>	Birdsfoot trefoil
<i>Lotus sp.</i>	Trefoil
<i>Lupinus bicolor</i>	Miniature lupine
<i>Lupinus nanus</i>	Sky lupine
<i>Lupinus succulentus</i>	Hollowleaf annual lupine
<i>Lythrum hyssopifolia</i>	Hyssop loosestrife
<i>Malvella leprosa</i>	Alkali mallow
<i>Medicago polymorpha</i>	Bur clover
<i>Mentha X piperita</i>	Peppermint
<i>Mentha pulegium</i>	Pennyroyal
<i>Orthocarpus bracteosus</i>	Rosy owl's clover
<i>Paspalum distichum</i>	Joint paspalum
<i>Phalaris aquatica</i>	Harding grass
<i>Phyla nodiflora var. nodiflora</i>	Turkey tangle fogfruit
<i>Picris echioides</i>	Bristly oxtongue
<i>Pilularia americana</i>	American pillwort
<i>Plagiobothrys stipitatus</i>	Slender popcorn-flower

Scientific Name	Common Name
<i>Plantago elongata</i>	Coast annual plantain
<i>Plantago lanceolata</i>	English plantain
<i>Plantago major</i>	Broad-leaf plantain
<i>Pleuropogon californicus</i>	California semaphore grass
<i>Polygonum persicaria</i>	Lady's thumb
<i>Polygonum punctatum</i>	Dotted smartweed
<i>Polypogon monspeliensis</i>	Annual rabbit-foot grass
<i>Potentilla</i> sp. (<i>P. pacifica</i> ?)	Cinquefoil
<i>Ranunculus bonariensis</i>	Carter's buttercup
<i>Ranunculus muricatus</i>	Spiny-fruit buttercup
<i>Raphanus sativus</i>	Purple wild radish
<i>Rorippa nastursium-aquaticum</i>	Water-cress
<i>Rubus discolor</i>	Himalayan blackberry
<i>Rumex acetosella</i>	Sheep sorrel
<i>Rumex crispus</i>	Curly dock
<i>Rumex pulcher</i>	Fiddle dock
<i>Rumex salcifolius</i> var. <i>transitorius</i>	Willow dock
<i>Salicornia virginica</i>	Pickleweed
<i>Salix exigua</i>	Narrow-leaved willow
<i>Salix laevigata</i>	Red willow
<i>Salix lasiolepis</i>	Arroyo willow
<i>Scirpus acutus</i>	Hardstem bulrush
<i>Scirpus americanus</i>	Common threesquare
<i>Scirpus californicus</i>	California bulrush
<i>Scirpus maritimus</i>	Saltmarsh bulrush
<i>Silene gallica</i>	Common catchfly
<i>Silybum marianum</i>	Blessed milkthistle
<i>Sisymbrium officinale</i>	Hedge mustard
<i>Sisyrinchium bellum</i>	Western blue-eyed grass
<i>Sonchus asper</i>	Spiny sowthistle
<i>Sonchus oleraceus</i>	Common sowthistle
<i>Spergula arvensis</i>	Corn spurry
<i>Spiranthes porrifolia</i>	Ladies tresses
<i>Stachys ajugoides</i>	Hedge nettle
<i>Taenitherum caput-medusae</i>	Medusa-head rye
<i>Taraxacum officinale</i>	Common dandelion
<i>Tragopogon porrifolius</i>	Salsify
<i>Trifolium dubium</i>	Suckling clover
<i>Trifolium hirtum</i>	Rose clover
<i>Trifolium incarnatum</i>	Crimson clover

Scientific Name	Common Name
<i>Trifolium subterraneum</i>	Subterranean clover
<i>Triglochin maritimum</i>	Seaside arrowgrass
<i>Triteleia hyacinthina</i>	White brodiaea
<i>Triticum aestivum</i>	Common wheat
<i>Tryphysaria versicolor ssp. faucibarbata</i>	Yellowbeak owl's clover
<i>Typha angustifolia</i>	Narrow-leaf cattail
<i>Typha domingensis</i>	Southern cattail
<i>Typha latifolia</i>	Broad-leaf cattail
<i>Veronica americana</i>	American brooklime
<i>Vicia sativa</i>	Common vetch
<i>Vicia villosa</i>	Hairy vetch
<i>Vulpia bromoides</i>	Brome fescue



Napa County Airport

Napa County Airport Master Plan
 Draft Environmental Assessment
 December 2007

Aerial Photograph: Geoimagery, August 2004

CRITICAL HABITAT
 Vernal pool fairy shrimp

- Property Boundary
- Critical Habitat (by USFWS, 2006)

NORTH
 ↑
 Scale: Approx. 1" = 1,600'

Figure 3.8-1

3.9 Special Status Species of Flora and Fauna – Affected Environment

Special status species are plants and animals that are legally protected under the federal Endangered Species Act (ESA), the California Endangered Species Act (CESA), or other regulations and species considered sufficiently rare by the scientific community to qualify for such listing. Special status plants and animals are species in the following categories:

- Species listed or proposed for listing as threatened or endangered under the (federal) ESA (50 CFR 17.12 [listed plants], 50 CFR 17.11 [listed animals], and various notices in the Federal Register [proposed species]);
- Species that are candidates for possible future listing as threatened or endangered under ESA;
- Species listed or proposed for listing by the State of California as threatened or endangered under CESA;
- Species that meet the definition of rare or endangered under CEQA (State CEQA Guidelines, Section 15380);
- Plants listed as rare under the California Native Plant Protection Act (California Fish and Game Code, Section 1900 et seq.);
- Plants considered by the California Native Plants Society (CNPS) to be rare, threatened, or endangered in California;
- Plants listed by CNPS as plants about which more information is needed to determine their status, and plants of limited distribution which may be included as special status species on the basis of local significance or recent biological information;
- Animal species of special concern to the California Department of Fish and Game, or
- Animals fully protected in California, under California Fish and Game Code, Sections 3511 [birds], 4700 [mammals], and 5050 [amphibians and reptiles].

A list of federally listed special status species with potential to occur on the Airport and the vicinity is shown in Table 3.9-1; special status species listed by other agencies or organizations are shown in Table 3.9-2.

Federally Listed Plants

Biological and resource data base reviews indicate that there may be six federally listed special status plants on, or near the Airport. Each of those plants is described below and listed in Table 3.9-1. However, only one special status plant species - the Suisun Marsh aster was identified along the south bank of Sheehy Creek near the Airport's northwestern property boundary (Macmillan, 2002). Macmillan reported that 5 to 6 plants were identified and their seeds collected due to construction that required that the plants be harvested prior to widening Sheehy Creek channel. This work was done prior to Napa County acquiring the land

along Sheehy Creek. There are no other known reportings of special status plant species on the Airport.

Suisun Marsh aster (*Aster lentus*)

The Suisun Marsh aster is a federal species of concern and is listed on CNPS List 1B (plant rare or endangered in California and elsewhere). It is endemic to the Sacramento/San Joaquin River Delta (Sacramento, San Joaquin and Solano Counties) and Contra Costa County. There are several records of the plant from Fagan Marsh and one 1986 record from northeast of Fagan Slough. It is a plant of brackish and freshwater wetlands dominated by sedges, common reed, blackberry, and cattails. It blooms from May through November.

In the Airport environs potential habitat is present in the brackish marsh adjacent to the unnamed creek and in the existing seasonal wetlands and vernal pools. There are several older records for the plant from Fagan Marsh. The species was more recently identified along the south bank of Sheehy Creek. However, in connection with another development project, seeds from these plants were collected for planting elsewhere. The species no longer exist along Sheehy Creek.

Soft bird's-beak (*Cordylanthus mollis ssp mollis*)

Soft bird's-beak is a federally listed endangered plant; this annual herb is also listed by the State of California as rare and is on CNPS List 1B. It is a partially parasitic plant of the upper reaches of coastal salt marsh vegetated by saltgrass, pickleweed and alkali heath. In the vicinity of the Airport, the plant is known from west of the Airport between Fagan Slough and Steamboat Slough, and Fly Bay northwest of Edgerly Island. The Fagan Slough population covers approximately 3 acres. Soft bird's-beak blooms July through November. In its range, soft bird's-beak is threatened by non-native plants, erosion, trampling and marsh drainage. There are no known occurrences of the species on the Airport.

Diablo helianthella (*Helianthella castanea*)

The Diablo helianthella is federally listed as a species of concern and is also on CNPS List 1B. The species occurs in a variety of plant communities including coastal scrub, riparian woodland and valley and foothill grasslands. It blooms from April through June. In the Airport project areas potential habitat for the species is found in riparian areas adjacent to Fagan Creek, the unnamed creek and in the annual grassland. There are no known occurrences of the species on the Airport.

Northern California black walnut (*Juglans californica* var. *hindsii*)

The Northern California black walnut is a federal species of concern and is also on CNPS List 1B. It occurs on sites in riparian forest and woodland usually associated with pre-Spanish Native American campsites. It is known to occur from Napa and Contra Costa County. It blooms from April through June. Potential habitat would be limited to areas adjacent to Fagan Creek. However, there are no known occurrences of the species on the Airport.

Legenere (*Legenere limosa*)

Legenere, a federal species of concern, a state rare plant and a CNPS List 1B plant, is associated with vernal pools, often in association with Suisun Marsh aster. It is known from Napa and Lake counties. The species blooms from April through June. The vernal pools of the project area offer potential habitat. However, there are no known occurrences of the species on the Airport.

Showy Indian clover (*Trifolium amoenum*)

Showy Indian clover is federally listed as endangered; this annual is also listed on CNPS List 1B. Although the species is not officially listed by the state, CDFG considers it to be “very threatened” (USFWS, 2005c). The plant inhabits grasslands and swales (sometimes on serpentine) at an elevation of 200 feet or less. It blooms in April through June. Historical records identify the species from Cuttings Warf and Cordelia; it was also reported near Napa Junction about 1.5 miles southeast of the Airport. At the present the species is known from one population at one location in Marin County. There are no known occurrences of the species on the Airport.

Federally Listed Animals

The Airport provides potential habitat for nine federally listed special status animal species (Table 3.9-1). Only one, the vernal pool fairy shrimp has been observed (ECORP Consulting, 2003). Vernal pool habitat on the Airport could serve as potential habitat for the vernal pool tadpole shrimp. However, none were observed during the 2002 and 2003 sampling seasons (ECORP Consulting, 2003). One bird, the California clapper rail and one mammal, the salt-marsh harvest mouse, both endangered, are considered likely to be present in the Fagan Marsh Ecological Reserve at, and along, the western edge of the Airport. The black-crowned night heron is listed as a federally endangered species, but there are no known sightings and no known rookeries.

Three fish species, Delta smelt, winter-run Chinook salmon and steelhead have been reported in the Napa River. Although potential habitat occurs in Sheehy and Fagan Creeks, none of the fish species have been reported or observed.

In 2002, a protocol level survey was conducted in Sheehy Creek for the California red-legged frog, a federally listed (threatened) species. No frogs were observed. It is unlikely that the frog is present in the saline marsh, or in the degraded environment along the un-named creek. Floods destroyed its habitat along Fagan Creek west of the Airport in January 2006.

Federally Listed Animals

Vernal pool fairy shrimp (*Branchinecta lynchi*)

The species is listed as federal threatened. The vernal pool fairy shrimp lives in ephemeral freshwater habitats but is not found in running or marine waters or permanent bodies of water. The species most commonly inhabits small vernal pools in grass or mud-bottomed swales in unplowed grasslands. Seven vernal pools are located in the undeveloped southern Airport area. The ephemeral pools of the Napa Airport Project collectively cover approximately 0.76 acres. These ephemeral pools offer potential habitat for the vernal pool fairy shrimp (ECORP, 2003). The principle threat to populations of vernal pool fairy shrimp is habitat loss.

ECORP (2003) operating under the authority of USFWS permit No. TE-012973-0 sampled the vernal pools, using approved methods (*Interim Survey Guidelines to Permittees for Recovery Permits under Section 10 (a)(1)(A) of the Endangered Species Act for the listed Vernal Pool Branchiopods, April 1996*) and discovered the vernal pool fairy shrimp in a vernal pool during December 2002 and January 2003 sampling periods. The number of individuals was estimated to be in the thousands. The vernal pool, located in the southwest portion of the study area adjacent to an existing fence and road, was reported to have a depth of 35 centimeters and a maximum surface of 30 by 35 meters.

The life history of the vernal pool fairy shrimp is intimately linked to the seasonal cycle of the vernal pool. The species feeds on algae, bacteria, protozoa, rotifers and detritus. The shrimp has been collected from early December to early May. Eggs are either dropped to the pool bottom or remain attached to the female until she dies and sinks. The eggs are thick shelled and are able to withstand temperature extremes and long periods of desiccation. Eggs hatch when the pool fills with rainwater, and juveniles develop rapidly into adults. Average time to maturity is about 41 days.

Vernal pool tadpole shrimp (*Lepidurus packardii*)

The species is listed as federal endangered. The vernal pool tadpole shrimp lives in ephemeral wetlands and inhabits vernal pools of varying sizes containing clear

or turbid water, most commonly in grass bottomed swales or mud-bottomed pools. Seven vernal pools are located within the annual grassland in the southern undeveloped airport area. These ephemeral pools offer potential habitat for the vernal pool tadpole shrimp (ECORP, 2003). The principle threat to populations of vernal pool tadpole shrimp is habitat loss.

ECORP (2003) operating under the authority of USFWS permit No. TE-012973-0 sampled the vernal pools, using approved methods (Interim Survey Guidelines to Permittees for Recovery Permits under Section 10 (a)(1)(A) of the Endangered Species Act for the listed Vernal Pool Branchiopods, April 1996) and failed to find the vernal pool tadpole shrimp during the December 2002 and January 2003 sampling.

The life history of the vernal pool tadpole shrimp is intimately linked with the vernal pool. After rainwater fills the pool the tadpole shrimp population is reestablished from resistant cysts lying dormant in the dry pool sediments. Sexually mature adults have been seen in 3 to 4 weeks after the vernal pool fills with water. Some encysted eggs hatch immediately, others remain dormant until the following year. The vernal pool tadpole shrimp climb and scramble over objects and plow along or within bottom sediments. Vernal pool tadpole shrimp feed on organic debris and living organisms such as the vernal pool fairy shrimp.

Black-crowned night heron (*Nycticorax nycticorax*)

The black-crowned night heron is found in freshwater and brackish marshes. The bird nests and roosts in colonies hidden in trees and forages at night at the water's edge. It is listed by the BLM as a sensitive species because its colonial rookery sites are susceptible to disturbance (USDOT, 2001). An individual may have been sighted on Sheehy Creek north of the project area in 2005. Trees suitable for a rookery site do not appear to be present in the immediate area. There are no known records of rookery sites in the area.

California clapper rail (*Rallus longirostris obsoletus*)

The California clapper rail is federally listed as endangered; it is also designated as endangered by the state. California clapper rails are secretive resident birds of San Francisco Bay. They live in saltwater marshes, but in the North Bay they also live in brackish marshes, which vary significantly in vegetation structure and composition. They are most active in early morning and late evening when they forage in vegetation in and along creeks and mudflat edges. They breed by February and by the end of August the young are mobile (USFWS, 2004a).

The California clapper rail has been affected by the decline in tidal marsh habitat due to development. In addition a number of factors such as erosion, freshwater discharge, habitat fragmentation and predation adversely affect the populations of California clapper rail. Although potential habitat exists in Fagan Marsh, the

California clapper rail has not been reported during fieldwork at the Napa Airport. However, it does occur in the northern San Francisco Bay (Napa-Sonoma marshes, Suisun Marsh and Petaluma Marsh); the taxon is more prevalent in the southern portions of San Francisco Bay (USFWS, 2005d).

Salt-marsh harvest mouse (*Reithrodontomys raviventris halicoetes*)

Federal and state agencies list the species as endangered. According to CDFG, the salt-marsh harvest mouse is endemic to the saline emergent wetlands of San Francisco, San Pablo and Suisun bays. The northern subspecies, *R. r. halicoetes*, occurs in Napa and Suisun marshes. The mouse's preferred habitat is dense emergent salt marsh dominated by pickleweed, but non-submerged, salt-tolerant vegetation for escape during highest tides is essential. Grasslands adjacent to pickleweed marshes are also used when new grass growth affords suitable cover. The salt-marsh harvest mouse is mostly nocturnal; likely subsists on leaves, seeds and stems of marsh plants and may drink saltwater for long periods of time. *Reithrodontomys r. halicoetes* most likely produces a single litter per year during May to November.

Populations of salt-marsh harvest mouse are declining. The major threat to the species is habitat loss due to commercial and residential development around San Francisco Bay; marsh loss is attributed primarily to filling, dikes, subsidence and changes in salinity. The salt-marsh harvest mouse is presumed to occur in Fagan Marsh directly west and adjacent to the airport. The Napa Airport includes approximately 5.28 acres of Fagan Marsh, an ecological reserve encompassing 330 acres.

California red-legged frog (*Rana aurora draytonii*)

In California this large frog ranges from Shasta County southward. The frog is listed as a federally threatened species and as a species of special concern to the State of California. Habitat of the California red-legged frog is dense, shrubby riparian vegetation associated with deep, still or slow moving waters, although it can occur in ephemeral streams and permanent ponds. California red-legged frogs do not move large distances from their aquatic habitat but may make pronounced seasonal movements within their local aquatic and terrestrial environment. Adult frogs have a highly variable animal food diet. The frog breeds in late November through mid-April. Egg masses are fixed to emergent vegetation; embryos hatch 6 to 14 days later; and larvae require 4 or 5 months to metamorphosis. Sexual maturity is reached in 2 years for males and 3 years for females (USFWS, 2005b).

During April 2001 nocturnal and diurnal surveys were conducted using methods approved by USFWS (*Guidance on Site Assessment and Field Surveys for California Red-legged Frogs*, February 1997) on Sheehy Creek located at the northeast boundary of the Airport project; the surveys did not find the species to

be present (Monk, 2001). The California red-legged frog has not been reported from the Napa Airport, although the taxon could potentially exist in Fagan Creek and, the unnamed creek in the southern portion of the project area. The Fagan Creek watershed was included as Unit 11 American Canyon Critical Habitat area designated for the red-legged frog (USFWS, 2005d). However, in January 2006, the USFWS withdrew its critical habitat designation for the Fagan Creek watershed.

Until January 2006 Fagan Creek at the western edge of the Airport supported riparian corridor dominated by arroyo willow (*Salix lasiolepis*) to 20 feet tall and isolated California bay (*Umbellularia californica*) as a fairly continuous overstory. The dense understory was dominated by poison hemlock (*Conium maculatum*) and giant horsetail (*Equisetum telmateia*). The adjacent unshaded area was primarily giant horsetail and blackberry (*Rubus* sp.). In the creek channel cattail (*Typha domingensis*), hardstem bulrush (*Scirpus acutus*) and smartweed (*Polygonum* sp) occurred in areas of slower flows and sediment accumulation. However, the flooding of January 2006 that closed the Airport for several hours affected Fagan Creek. Fine sediments and sand were deposited in the stream channel and riparian corridor; a number of willow trees were swept away as was much of the understory. The flooding reduced available habitat for the California red-legged frog.

Delta smelt (*Hypomesus transpacificus*)

The Delta smelt, a small pelagic species, is found primarily in the lower Napa River, San Pablo and Suisan bays and the Sacramento/San Joaquin Delta. It lives in schools and feeds on zooplankton and is tolerant of a wide salinity range. Before spawning the adults move up stream and disperse into river channels and backwater sloughs; eggs are attached to submerged vegetation. Because the smelt is a one-year species, abundance and distribution may fluctuate widely from year to year. Unusually wet or dry years can adversely affect populations (USFW, 2004b).

The delta smelt is listed as federal and state threatened primarily because the impacts of low outflows during unusually dry years and high outflows during exceptionally wet years. The Delta smelt is not known to spawn in the Napa River but potential habitat for the species could be available to the north in Fagan and Sheehy Creek during high outflows from the Delta.

Delta smelt are not known to exist within any waterways on, or immediately adjacent to the Airport, but potential habitat in the Napa River, one-mile west of the Airport warrants their inclusion in this EA.

Sacramento winter-run Chinook salmon (*Oncorhynchus tshawytscha*)

The Sacramento winter-run Chinook salmon is listed as a federally endangered species. This anadromous fish spawns only in the main stem of the Sacramento River. Juvenile salmon may rear in the Delta and the lower Napa River. Suitable habitat may be present in Fagan and Sheehy creeks during periods of high outflow from the Delta. The Sacramento winter-run Chinook salmon are state and federal listed as endangered.

Recent efforts (including revisions in harvest regulations, restoration of spawning and rearing habitat, improved temperature and water quality, improved passage at diversion structures and screening of numerous water diversions, hatchery supplementation) have resulted in marked population increases. In 2005 the endangered winter-run Chinook showed the highest number of individuals returning to spawn since 1981 (CDFG, 2005b). Winter-run Chinook are not known to exist within any waterways on, or immediately adjacent to the Airport, but potential habitat in the Napa River, one-mile west of the Airport warrants their inclusion in this EA.

Steelhead-Central Valley (*Oncorhynchus mykiss*)

Historically steelhead were widely distributed in the Sacramento and San Joaquin drainages, and most tributary and headwater areas of the Napa River had reproducing populations. Over time populations of this anadromous fish have declined because of extensive habitat modifications (McEwan, 2001). Juvenile steelhead may be found in sloughs and open waters of the estuary. The Steelhead-Central Valley is listed as a federally threatened species and as a species of special concern to the State of California.

Steelhead may spend variable amounts of time in the lower Napa River as they move from upstream rearing areas to San Francisco Bay. Potential habitat may be available to steelhead in Fagan and Sheehy creeks during high flow from the Delta. The Central Valley steelhead is considered an Environmentally Sensitive Unit. Steelhead are not known to exist within any waterways on, or immediately adjacent to the Airport, but potential habitat in the Napa River, one-mile west of the Airport warrants their inclusion in this EA.

California Endangered Species Act

The California Endangered Species Act (CESA) (Fish & Game Code §§2050, *et seq.*) generally parallels the main provisions of the Federal Endangered Species Act and is administered by the California Department of Fish and Game. Under CESA the term "endangered species" is defined as a species of plant, fish, or wildlife that is "in serious danger of becoming extinct throughout all, or a significant portion of its range" and is limited to species or subspecies native to California.

CESA establishes a petitioning process for the listing of threatened or endangered species. The California Fish and Game Commission is required to adopt regulations for this process and establish criteria for determining whether a species is endangered or threatened. The California Code of Regulations, tit. 14 §670.1(a) sets forth the required contents for such a petition. CESA prohibits the "taking" of listed species except as otherwise provided in State law. Unlike its Federal counterpart, CESA applies the take prohibitions to species petitioned for listing (state candidates).

State lead agencies (Napa County in the case of the Airport) are required to consult with CDFG to ensure that any action it undertakes is not likely to jeopardize the continued existence of any endangered or threatened species or result in destruction or adverse modification of essential habitat. A "lead agency" is defined under the California Environmental Quality Act as the public agency that has principal responsibility for carrying out or approving a project that may have a significant effect on the environment.

The Natural Community Conservation Planning Act (NCCP Act) was added to CESA in 1991. (Fish & Game Code §§2800-2840). These provisions provide for voluntary cooperation among CDFG, landowners, and other interested parties to develop natural community conservation plans which provide for early coordination of efforts to protect listed species or species that are not yet listed. The primary purpose of the NCCP Act is to preserve species and their habitats, while allowing reasonable and appropriate development to occur on affected lands.

Plants and animals subject to the jurisdiction of the CESA occur on or near the Airport. The known occurrences are listed in Table 3.9-3. The impacts, if any, of the proposed actions and any mitigation measures are described in Napa County CEQA compliance documents for the Airport Master Plan projects.

Napa County: Conservation Management

Napa County, in its *General Plan, Conservation and Open Space Element*, (as amended, 1998) recognizes the need to preserve natural resources:

Planning Goal: To conserve and improve wildlife and fishery habitat in cooperation with governmental agencies, private associations and individuals in Napa County.

Conservation Policy 1. b): Provide protection for wildlife habitat.

Conservation Policy 6): Encourage programs to protect wildlife species that are becoming increasingly rare.

Although Napa County does not specifically identify local rare or endangered species, elements within the General Plan make clear that the County works with other resource agencies and recognizes the need to preserve habitat and protect wildlife.

Biological Assessment and Biological Opinion

The FAA prepared a biological assessment (BA) in accordance with legal requirements found in Section 7 (a)(2) of the Endangered Species Act (16 U.S. C 1536(c)) and with FAA regulation, policy and guidance. The BA provides technical information and reviews proposed actions associated with the Napa Airport Master Plan in sufficient detail to determine to what extent the proposed actions may affect threatened, endangered or proposed species. In April 2006, the U.S. Fish and Wildlife Service agreed to formal consultation with the FAA.

The FAA's request was related to the effects of the proposed action on the endangered California clapper rail, the endangered salt marsh harvest mouse and the threatened vernal pool fairy shrimp and its designated critical habitat. Following consultation, the USFWS wrote that they "concur with [the FAA] determination that the proposed action is not likely to adversely affect the vernal pool fairy shrimp." However, the USFWS did "not concur with [the FAA] determination that the proposed action is not likely to adversely affect the California clapper rail, salt marsh harvest mouse, vernal pool fairy shrimp critical habitat, and the endangered soft bird's beak." As a result, the USFWS issued a biological opinion that includes conservation measures to protect the affected species. Those conservation measures are incorporated into mitigation measures in this EA. The biological assessment and biological opinion are included in this EA as Appendix E.

Table 3.9-1: Federally Listed Species Occurring or Known to Occur in the Napa County Airport Vicinity. (Napa County Airport Draft Environmental Assessment January 2008)

Common Name	Scientific Name	Status ¹	General Habitat Description	Habitat Present/ Absent ²	Rationale (See text)
Federally Listed Plant Species					
Suisun Marsh aster	<i>Aster lentus</i>	FSC	Marsh and sloughs	HP	Once known to occur
Soft bird's-beak	<i>Cordylanthus mollis</i> ssp. <i>Mollis</i>	FE	Coastal salt marsh	HP	Occurs in Fagan Slough
Diablo helianthella	<i>Helianthella castanea</i>	FSC	Coastal scrub grassland	HP	Unknown from area
Northern California black walnut	<i>Juglans californica</i> var. <i>hindsii</i>	FSC	Riparian woodlands	A	Unknown from area
Legenere	<i>Legenere limosa</i>	FSC	Vernal pools	HP	Unknown from area
Showy Indian clover	<i>Trifolium amoemum</i>	FE	Grassland swales	HP	Known from Napa Junction
Federally Listed Animal Species					
Vernal Pool Fairy Shrimp	<i>Branchinecta lynchii</i>	FT	Vernal pools	CH/P	Known in one vernal pool
Vernal Pool Tadpole Shrimp	<i>Lepidurus packardii</i>	FE	Vernal pools	HP	Sampling negative
Delta Smelt	<i>Hyomesus transpacificus</i>	FSC	San Pablo Bay and Delta	HP	In lower Napa River
Sacramento Winter-run Chinook Salmon	<i>Oncorhynchus ishawytscha</i>	FE	Delta, lower Napa River	HP	Rear in Napa River
Steelhead – Central Valley ESU	<i>Oncorhynchus mykiss</i>	FT	Napa River, Delta, S.F. Bay	HP	Rear in Napa River
Black-crowned night heron	<i>Nycticorax nycticorax</i>	FSC (BLM)	Colony nests in trees	HP	No known rookery
California Clapper Rail	<i>Rallus longirostris</i>	FE	Brackish and salt marshes	HP/P	Assumed in Fagan Marsh
Salt-marsh Harvest Mouse	<i>Reithrodontomys raviventris</i>	FE	Salt marsh	HP/P	Known in Fagan Marsh
California Red-legged Frog	<i>Rana aurora draytonii</i>	FT	Deep, slow streams	HP**	Protocol searches: negative

1. Status

FE = Federal Endangered
 FT = Federal Threatened
 FSC = Federal Species of Concern

2. Habitat Present/Absent

A = Habitat absent – no habitat present and no analysis needed
 HP = Habitat present – habitat is or may be present; the species may be present
 P = Species present – species is present
 CH = Critical habitat present – project footprint is located within a designated critical habitat unit, but does not necessarily mean that appropriate habitat is present
 ** = Fagan Creek habitat destroyed by floods, January 2006

Table 3.9-2: Non-Federal Sensitive Animal Species and Plant Species Occurring or Known to Occur in the Napa Airport Vicinity.

(Napa County Airport Master Plan Draft Environmental Assessment January 2008)

Common Name	Scientific Name	Status ¹	General Habitat Description	Habitat Present/Absent ²	Rationale (See text)
Mason's lilaeopsis	<i>Lilaeopsis masonii</i>	SR CNPS List 1B	Freshwater tidal marsh	HP	Known from Napa River
Marin knotweed	<i>Polygonum marinense</i>	CNPS List 3	Brackish marsh	HP	Known from Fagan Marsh
California horned lark	<i>Eremophila alpestris actica</i>	SSC	Short grasslands	P	Uses airport infields
Salt-marsh common yellowthroat	<i>Geothlypis trichas sinuosa</i>	SSC	Tall, thick marshes	HP	Known in Fagan Marsh
Loggerhead shrike	<i>Lanius ludovicianus</i>	SSC	Short grasslands	P	Uses airport infields
California Black Rail	<i>Laterallus jamaicensis</i>	ST	Brackish and salt marshes	HP	Known in Fagan Marsh
Big-scale Balsamroot	<i>Balsamorhiza macrolepis</i> var. <i>macrolepis</i>	CNPS List 1B	Grassland	HP	Known from 5 miles east
Brewer's calandrinia	<i>Calandrinia breweri</i>	CNPS List 4	Sandy soils, disturbed	HP	Unknown from area
Western leatherwood	<i>Dirca occidentalis</i>	CNPS List 1B	Varied communities	HP	Unknown from area
Dwarf downingia	<i>Downingia pusilla</i>	CNPS List 2	Vernal pool, wet grasslands	HP	Occurs 1.8 miles NNE
Small spikerush	<i>Eleocharis parvula</i>	CNPS List 4	Marsh and swamps	HP	Unknown from area
Delta tule pea	<i>Lathyrus jepsonii</i> var. <i>jepsonii</i>	CNPS List 1B	Freshwater brackish marsh	HP	Known from Napa River

1. Status

ST = State Threatened

SR = State Rare

SSC = State Species of Special Concern

CNPS = California Native Plant Society

2. Habitat Present/Absent

HP = Habitat present – habitat is or may be present; the species may be present

P = Species present – species is present

Table 3.9-3: California State Sensitive Species Occurring or Known to Occur in the Napa Airport Vicinity.

Common Name	Scientific Name	Status	General Habitat Description	Habitat Present/Absent	Rationale
Endangered Plants					
Big-scale Balsamroot	<i>Balsamorhiza macrolepis</i> var. <i>macrolepis</i>	CNPS List 1B	Grassland	HP	Known from 5 miles east
Brewer's calandrinia	<i>Calandrinia breweri</i>	CNPS List 4	Sandy soils, disturbed	HP	Unknown from area
Western leatherwood	<i>Dirca occidentalis</i>	CNPS List 1B	Varied communities	HP	Unknown from area
Dwarf downingia	<i>Downingia pusilla</i>	CNPS List 2	Vernal pool, wet grasslands	HP	Occurs 1.8 miles NNE
Small spikerush	<i>Eleocharis parvula</i>	CNPS List 4	Marsh and swamps	HP	Unknown from area
Delta tule pea	<i>Lathyrus jepsonii</i> var. <i>jepsonii</i>	CNPS List 1B	Freshwater brackish marsh	HP	Known from Napa River
Mason's lilaepsis	<i>Lilaeopsis masonii</i>	SR CNPS List 1B	Freshwater tidal marsh	HP	Known from Napa River
Marin knotweed	<i>Polygonum marinense</i>	CNPS List 3	Brackish marsh	HP	Known from Fagan Marsh
Endangered Animals					
Sacramento splittail	<i>Pogonichthys macrolepidotus</i>	SSC	Slow rivers, sloughs	HP	In Napa Marsh, River
Tricolored blackbird	<i>Agelaius tricolor</i>	SSC	Dense fresh water marsh	HP	Known east of airport
Northern harrier	<i>Circus cyaneus</i>	SSC	Grassland marsh	P	Uses airport infields
California horned lark	<i>Eremophila alpestris actica</i>	SSC	Short grasslands	P	Uses airport infields
Salt-marsh common yellowthroat	<i>Geothlypis trichas sinuosa</i>	SSC	Tall, thick marshes	HP	Known in Fagan Marsh
Loggerhead shrike	<i>Lanius ludovicianus</i>	SSC	Short grasslands	P	Uses airport infields
California Black Rail	<i>Laterallus jamaicensis</i>	ST	Brackish and salt marshes	HP	Known in Fagan Marsh

Status

SR = State Rare

SSC = State Species of Special Concern

CNPS = California Native Plant Society

List 1B – Rare or endangered in California

List 2 – Rare or endangered in California, more common elsewhere

List 3 – Plants for which more information is needed, a review list

List 4 – Plants of limited distribution, a watch list

Habitat Present/Absent

HP = Habitat present – habitat is or may be present; the species may be present

P = Species present – species is present

3.10 Wetlands, Jurisdictional or Non-Jurisdictional – Affected Environment

Waters of the United States, including wetlands, are broadly defined under Title 33 of the Code of Federal Regulations (CFR), Section 328, to include navigable waterways, their tributaries, perennial and intermittent streams and drainages, lakes, seeps and springs, emergent marshes, seasonal wetlands and isolated wetlands. Jurisdictional wetlands are vegetated areas that meet specific vegetation, soil and hydrologic criteria defined by the Corps (Environmental Laboratory, 1987). Other waters of the United States are drainage features or water bodies as described in 33 CFR 328.4. State and federal agencies regulate these habitats, and Section 404 of the Clean Water Act requires a permit be secured for the discharge of dredged or fill material into any water of the United States. Section 1600 of the California Fish and Game Code regulates effects on streams, wetlands and associated wetland and riparian vegetation communities.

Wetlands and waters of the United States on the Airport that could fall under Corps jurisdiction were delineated in 2002, 2003, 2004, 2005 and 2006. A wetland map was overlain with proposed project footprints to quantify the effects of the proposed actions on wetland habitats and plants. A summary of the delineated waters of the United States by type and acreage is provided in Table 3.10-1.

Wetlands and waters of the United States mapped on the Airport are within the San Pablo Bay water shed. Due to the topography and drainage gradient of the Airport, over flows from seasonal precipitation accumulate within the wetland basins and swales and inundate the marshes at the western and southern perimeter of the Airport. These marshes are adjacent, and tributary to Fagan Slough, a tributary of the Napa River, a navigable river. The wetland features along the extreme northern Airport property are adjacent and/or tributary Sheehy Creek that is tributary to the Napa River. Thus the waters of the United States on the Airport are considered hydrologically connected with and/or adjacent to navigable water and therefore fall under the jurisdiction of the US Army Corps of Engineers (Corps) pursuant to the Clean Water Act.

Sheehy Creek Wetlands

Wetlands adjacent to Sheehy Creek were delineated and verified in 2002, prior to the Napa County's purchase of the property from Napa Valley Gateway Limited. The Corps, San Francisco District, issued its verification letter in March 2002, File Number 24755N. The verification included Sheehy Creek from west of State Route 29 to the Airport's western boundary. Based on the verified wetland map there are about 0.153-acres of restored vernal pools and 0.391-acres of seasonal wetlands. Wetlands and other waters along Sheehy Creek are not affected by the proposed action, but Napa County is responsible for complying with the

Mitigation and Monitoring Plan (January 2001, McMillan) as approved by the Corps.

Airport Wetlands

A total of 42.193 acres of wetlands and 2.280 acres of other waters were preliminarily delineated (not yet verified by Corps) on the Airport south of the Sheehy Creek wetland verification area. This wetland acreage comprises 0.756 acres of vernal pools, 7.502 acres of seasonal wetlands; 2.978 acres of seasonal wetland swales, and 28.677 acres of perennial marsh. Other waters comprise 0.158 acres of intermittent drainage, 0.219 acres of ephemeral drainage, and 1.903 acres of creek drainage (Figure 3.10-1).

Table 3.10-1. Wetlands and Waters of the United States

Habitat Type	Airport Acreage*
Vernal Pools	0.756
Seasonal Wetland	7.502
Seasonal Wetland Swale	2.978
Perennial Marsh	28.677
Intermittent Drainage	0.158
Ephemeral Drainage	0.219
Creek	1.903
Total	42.193

Source: Preliminary Wetland Delineation, 2006

- Acreage amounts have not been verified by the Corps (October 2006)

Vernal Pools

Seven vernal pools are located within the grassland in the southern portions of the Airport. Vernal pools are topographic basins within a grassland community, and typically are underlain by an impermeable or semi-permeable hardpan or duripan layer. Vernal pools are inundated up to one foot through the wet season and are dry by late spring until the following wet season.

A total of 0.756-acres of vernal pools have been mapped within the Airport. The plant community composition within vernal pools is predominantly native, including slender popcorn flower (*Plagiobothrys stipitatus*), Vasey's coyote thistle (*Eryngium vaseyi*), Carter's buttercup (*Ranunculus bonariensis*), and annual hairgrass (*Deschampsia danthonioides*). Some vernal pools also contain non-native plants including Hyssop loosestrife (*Lythrum hyssopifolium*), curly dock (*Rumex crispus*), and toad rush (*Juncus bufonius*).

Seasonal Wetland

Seasonal wetlands are scattered throughout the grassland areas near the runways and in the undeveloped areas in the southern, northwestern, and northern portions of the Airport. The seasonal wetland basins have a similar topographic condition to vernal pools. However, seasonal wetlands are typically comprised of non-native grasses and herbs such as ryegrass, Mediterranean barley (*Hordeum marinum*), Harding grass (*Phalaris aquatica*) curly dock, and little quaking grass (*Briza minor*). The seasonal wetlands in the northwestern and northern portions of the Airport are hydrologically connected to Fagan Creek. During the wet season these areas are subject to periodic flooding. The dominance of non-native plants may be attributed to water depth, duration of inundation/saturation, soil characteristics, and human related disturbances. A total of 7.502 acres of seasonal wetlands are mapped on the Airport.

Seasonal Wetland Swale

The seasonal wetland swales are ephemerally wet, linear features. These are topographic swales considered tributary to the Napa River west of the Airport. The vegetative composition of the seasonal wetland swales is primarily comprised of non-native wetland generalist plants and native annual species. These include ryegrass, Mediterranean barley, curly dock, annual hairgrass, and spiny-fruit buttercup (*Ranunculus muricatus*). A total of 2.987 acres of seasonal wetland swales are mapped for the Airport.

Perennial Marsh

Perennial marsh habitat, totaling 28.677 acres, is located in the southwestern portion of the Airport. This marsh is subject to tidal influences and has a combination of open water, mudflat and emergent vegetation. Hydrophytic plants observed in the marsh include brass buttons (*Cotula coronopifolia*), pickleweed (*Salicornia virginica*), saltgrass (*Distichlis spicata*), cattail (*Typha* spp.), and bulrush (*Scirpus* spp.)

Fagan Creek

Fagan Creek is located in the northwestern portion of the Airport and along its eastern property line. The creek flows from south to north, then east to west, and two reaches within the Airport are above ground. The remainder of the creek has been culverted beneath active portions of the Airport. Fagan Creek's northeastern reach is a trapezoidal channel and is

approximately 30-feet wide at the top of the channel. Hydrophytic vegetation, such as cattail, bulrush, and smartweed (*Polygonum* spp.), has become established where sediment has accumulated and in areas of low or slower flows. The northwestern reach of Fagan Creek does not appear to have been significantly channelized, except at the area immediately surrounding the outlet culvert.

The creek bed is largely unvegetated due to its depth and higher flows. Riparian vegetation, including black, arroyo, and sandbar willow (*Salix gooddingii*, *S. lasiolepis*, and *S. exigua*, respectively) is established along the banks and in the floodplain. The creek meanders westward in a riparian corridor for a short distance before entering Fagan Slough, and ultimately, the Napa River.

Ephemeral Drainage

Two ephemeral drainage features are located within the runway infields. These features are channelized and maintained to carry runoff away from the runways and infields. They exhibit an ordinary high water mark. Scattered hydrophytic vegetation includes cattail, nutsedge (*Cyperus* spp.), smartweed (*Polygonum* spp.), and willow-herb (*Epilobium* spp.). A total of 0.219-acres of ephemeral drainages have been mapped.

Intermittent Drainage

An intermittent drainage, totaling 0.158-acres, is mapped in the southern portion of the Airport. This feature exhibits an ordinary high water mark and is likely influenced by seasonally high groundwater. It carries runoff from an undeveloped and grazed grassland community into the perennial marsh. Vegetation is absent from the bed of the drainage due to the scouring effects of flowing water.

Interstate or Foreign Commerce Connection

The wetlands mapped on the Airport are within the San Pablo Bay watershed (18050002) (U.S. Department of the Interior, 1978). Due to the topography and gradient of the site, overland flows from seasonal precipitation accumulate within the wetland basins and swales and inundate the marshes at the Airport's western and southern perimeter. The marshes adjacent to Fagan Slough are tributary to the Napa River, which is a navigable water. The wetland features in the northern disjunct portion, north and east of railroad tracks, are adjacent and/or tributary to the Napa River via Sheehy Creek. Thus, the waters of the U.S. within the Airport are considered hydrologically connected with and/or adjacent to navigable water, and would therefore be subject to interstate and/or foreign commerce and subject to the jurisdiction of the Corps.

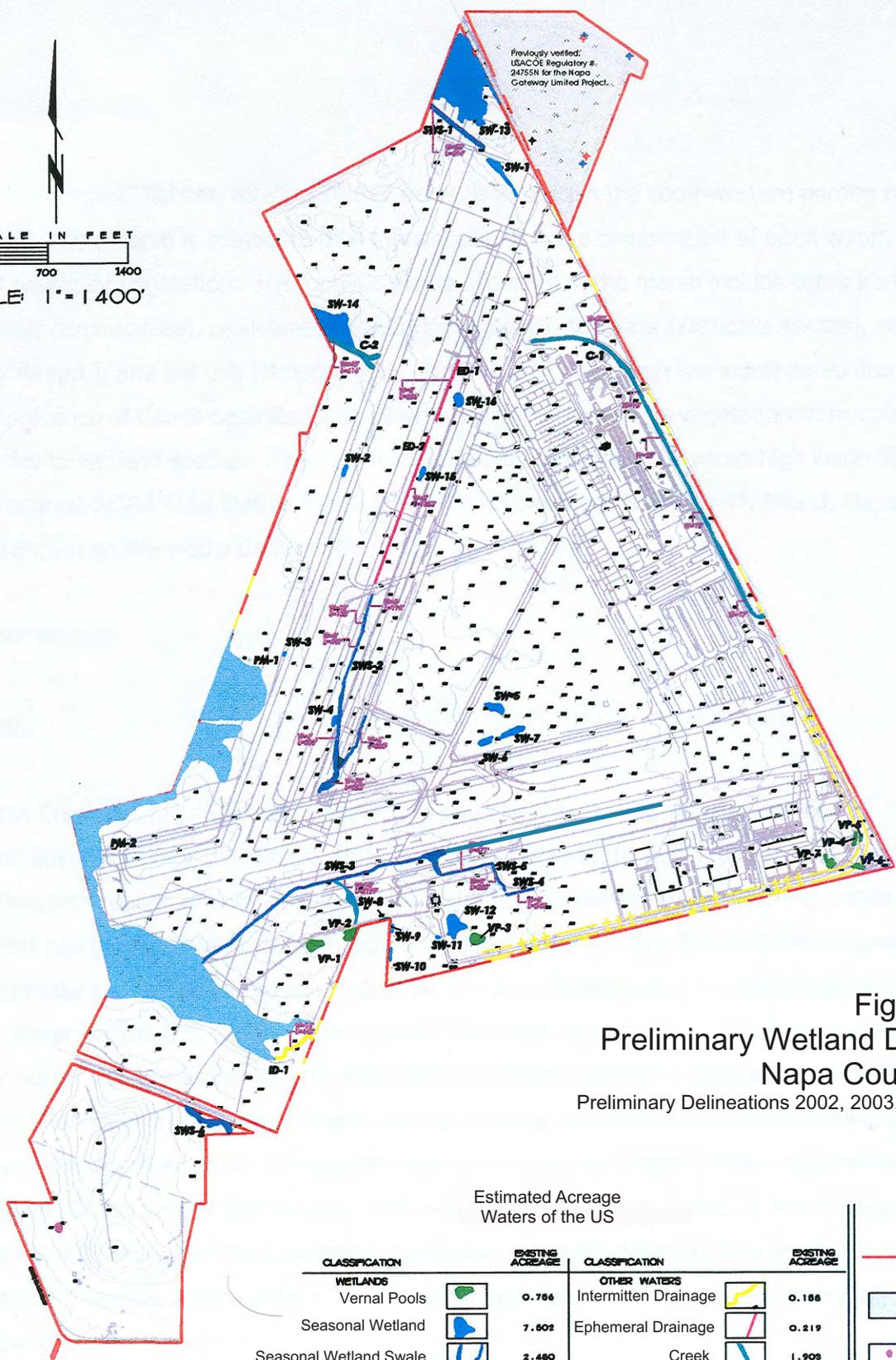
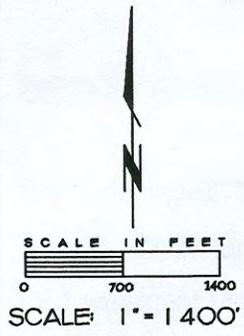


Figure 3.10-1
 Preliminary Wetland Delineation
 Napa County Airport
 Preliminary Delineations 2002, 2003, 2005 and 2006

Estimated Acreage
 Waters of the US

CLASSIFICATION	EXISTING ACREAGE	CLASSIFICATION	EXISTING ACREAGE
WETLANDS		OTHER WATERS	
Vernal Pools	0.766	Intermittent Drainage	0.188
Seasonal Wetland	7.602	Ephemeral Drainage	0.219
Seasonal Wetland Swale	2.480	Creek	1.908
Perennial Marsh	28.677		
SUBTOTAL	39.418	SUBTOTAL	2.360
		TOTAL	41.698

- Airport Property Boundary
- Previously verified, USACE Regulatory # 24755N for the Napa Gateway Limited Project.
- Stock Pond

3.11 Floodplains – Affected Environments

Introduction

Executive Order 11988 directs federal agencies to take action to reduce the risk of flood loss, minimize the impact of floods on human safety, health and welfare, and restore and preserve the natural and beneficial values served by flood plains. Federal agencies are required to make a finding that there is no practicable alternative before taking action that would encroach on a base floodplain based on a 100-year flood event.

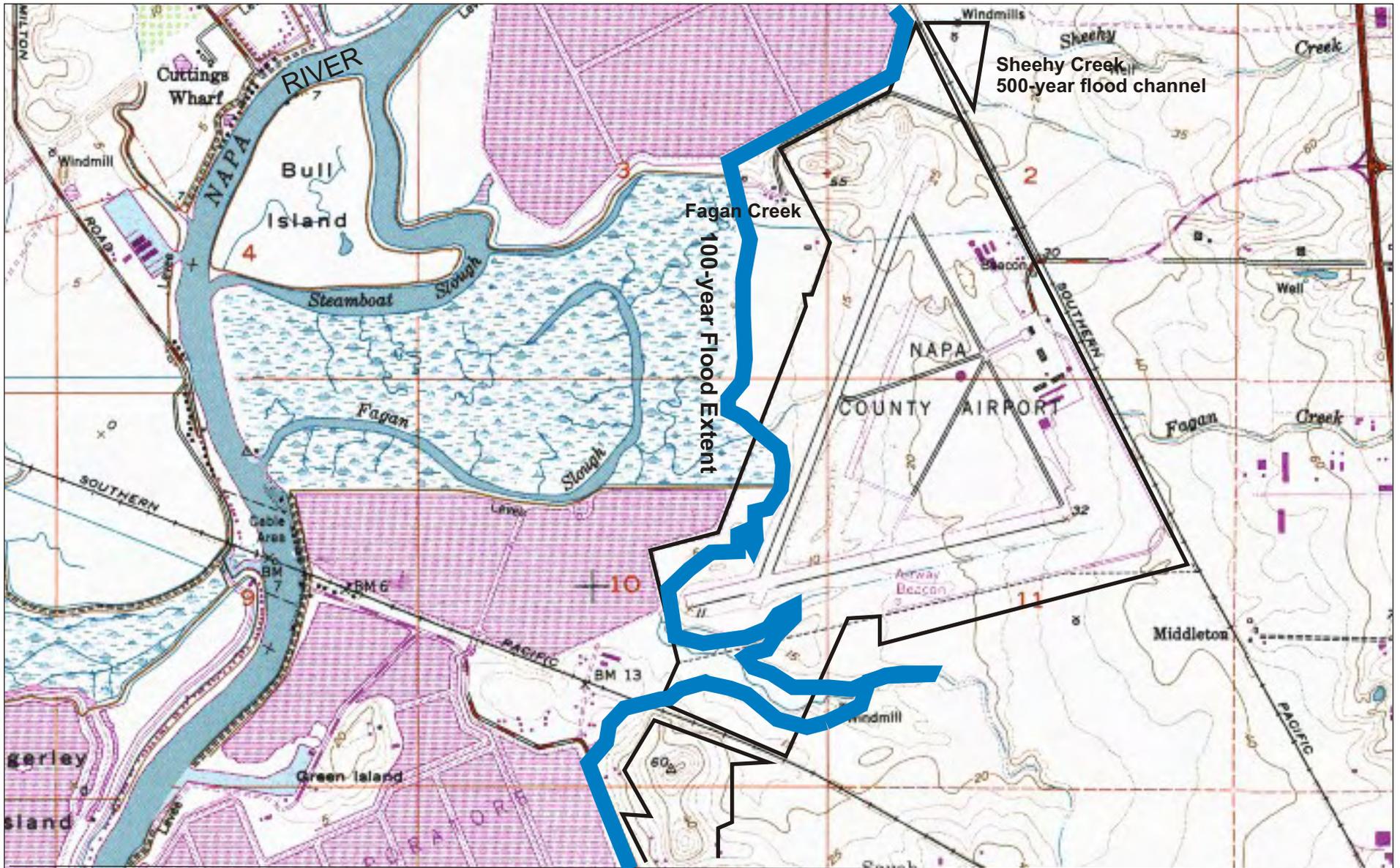
100-Year Flood Plain

According to Federal Emergency Management Agency (FEMA) maps (Numbers 060205-0480 A and B, September 15, 1989), the western edge of the Airport to about the 7-foot contour elevation and the un-named creek, completely through the Borges Atkins property, are located with the 100-year flood plan. This floodplain designation assumes inundation to about the 7-foot elevation contour. The approximate extent of the 100-year floodplain is shown in Figure 3.11-1.

Although the lowest lying portions of the Airport are mapped within the 100-year floodplain, no active portions of the airfield are affected. The areas west of Runway 6-24 are separated from the floodplain (salt evaporation pond) by a levee. The western end of Runway 6-24, the lowest lying runway, is 11 feet above mean sea level (Corps, benchmark) and therefore, out of the floodplain.

According to the FEMA maps, Sheehy Creek is not within the 100-year floodplain. However, the Sheehy Creek channel through the Airport is designed to carry the 500-year flood event within its channel (FEMA Map 060205 0480B, 1989).

No proposed actions affect the 100-year floodplain. No further analysis is required.



**100-Year Flood Extent
Napa County Airport**

Napa County Airport Master Plan
Environmental Assessment
December 2007

Source: FEMA Maps 060205-0480 A and B, 1989

Figure 3.11-1

↑
NORTH
Scale: 1" = 3,500'

3.12 Coastal Resources – Affected Environment

Coastal Zone Management

In 1976, the California Legislature enacted the California Coastal Act, which established a far-reaching coastal protection program and made permanent the California Coastal Commission. The Commission plans and regulates development and natural resource use along the coast in partnership with local governments and in keeping with the requirements of the Coastal Act. The Commission exercises jurisdiction over all California coastal areas except San Francisco Bay, which has its own coastal management program.

The 27-member San Francisco Bay Conservation and Development Commission (BCDC) was created by the California Legislature in 1965 in response to broad public concern over the future of San Francisco Bay. The Commission is made up of appointees from local governments and state/federal agencies. Among other duties, the Commission is charged with:

Regulating all filling and dredging in San Francisco Bay (which includes San Pablo and Suisun Bays, sloughs and certain creeks and tributaries that are part of the Bay system, salt ponds and certain other areas that have been diked-off from the Bay).

Administering the federal Coastal Zone Management Act within the San Francisco Bay segment of the California coastal zone to ensure that federal activities reflect Commission policies.

The BCDC exercises its jurisdiction in the Napa River watershed as far upstream as Bull Island on the Napa River, 1.25 miles west of the Airport. However, BCDC jurisdiction does not include tidal marsh areas on the Airport (per. Comm. Jeffry Blanchfield, BCDC, 2005). The proposed action for which this EA is prepared does not affect coastal resources.

No further analysis is required.

Coastal Barriers

The Coastal Barriers Resources Act applies only to coastal resources along the Atlantic and Gulf coasts and the Great Lakes. No further analysis is required

3.13 Farmlands –Affected Environment

The Farmland Policy Act regulates federal actions with the potential to convert farmland to non-agricultural uses. The proposed action does not convert farmland and does not remove highly productive soils from potential agricultural uses. The areas of disturbance are located with active portions of the airfield, adjacent to runways and taxiways. Historically, these lands have been maintained to control weeds and have never been placed in agricultural service. The active portions of the airfield are generally considered annual grassland habitat, the most common habitat in southern Napa County, most of the soils are considered adequate for grazing. No commercial grazing occurs on the Airport, and therefore there is no loss of farmland resulting from the proposed federal action.

Napa County Airport is located in the southern end of the Napa Valley, one of the most famous wine-growing regions in the world. Most of the vineyards in Napa Valley are north of the Airport, although there are vineyards east of the Airport in the Jameson Canyon area, and the Airport does support a very small vineyard of its own.

According to the *Soil Survey of Napa County, California* (U.S. Department of Agriculture (USDA), Natural Resources Conservation Service (NRCS), 1978), six soil units have been mapped on the Airport.

1. Clear Lake clay, drained: This soil is mainly used for pasture. Some areas in the northern part of Napa Valley are used for vineyards.
2. Cole silt loam, 0 to 2 percent slopes: This soil is used for vineyards, prune orchards, and irrigated pasture, but the orchards and pastures are being converted to vineyards. This soil forms a narrow unit through the center of the Airport and roughly follows the abandoned (historic) Fagan Creek channel.
3. Haire loam, 2 to 9 percent slopes: This soil is mainly used for grazing, but some of these areas are being planted to varietal wine grapes.
4. Haire clay loam, 2 to 9 percent slopes: This soil is mainly used for grazing, but some of these areas are being planted to wine grapes.
5. Haire clay loam, 9 to 15 percent slopes: This soil is mainly used for range. Some small areas are used for dry farmed grain.
6. Reyes silty clay loam: This soil is used for oats, hay, and grain where the areas are diked.

No further analysis is required.

3.14 Wild and Scenic Rivers – Affected Environment

Napa County Airport is located about one mile east of the Napa River, the only major river in the vicinity. The Wild and Scenic Rivers Act (1968, as amended) describes those river systems designated or eligible to be included in the Wild and Scenic River System. No segment of the Napa River is included in the Wild and Scenic Rivers Act.

No further analysis is required

3.15 Natural Resources and Energy Supply – Affected Environment

Expansion of a runway and taxiway, security fencing or property acquisition does not directly contribute to increased demand for energy or services. The Airport, with implementation of the proposed action, will continue to serve aircraft that consume aviation fuel. Near-term consumption levels would be consistent with those for aircraft currently served by the airport. Increased aviation fuel consumption would occur on an incremental level with increase aircraft operations. The supply of aviation fuel is expected to support future demand.

The proposed action does not increase the demand for services. There are no anticipated demands for potable water, sanitary sewers or storm drainage from the proposed projects. Any increase is considered minor. No further analysis is required.

3.16 Hazardous Materials and Solid Waste – Affected Environment

This chapter addresses existing and potential hazardous materials and solid waste conditions associated with the proposed actions.

Hazardous Materials

A database search was conducted for the Airport and surrounding environs to identify existing and potential sources of contamination that could affect proposed Master Plan projects (BBL Environmental Information, 2005, Appendix C). Information regarding hazardous material sites includes operating permits, the approximate location of unauthorized releases, and the enforcement status of the release.

Four individual sites were identified on the Airport:

- Leaking underground storage tank, IASCO, as agent for Japan Airlines. Case closed, site remediated.
- Leaking underground storage tank, Napa County Airport
- Hazardous waste permit, underground storage tank, IASCO, as agent for Japan Airlines
- Hazardous waste permit, underground storage tank, Napa County, Department of Public Works

The hazardous materials sites identified in the database search have been closed and do not represent a significant affect on the proposed action. The proposed action will not contribute to hazardous materials or waste quantities, or to the likelihood of an unauthorized release. No further analysis is required.

Solid Waste

Solid waste on the Airport is collected and transported by an independent contractor to the Devlin Road Recycling and Transfer Facility, 889 Devlin Road in American Canyon. This transfer facility has the capacity to process up to 1,440 tons of solid waste daily and currently handles an average of 1,000 tons of waste per day. Solid waste is transported from the Devlin Road facility by truck to the Keller Canyon landfill in Contra Costa County.

The proposed action is not expected to significantly increase solid waste quantities generated at the Airport. No further analysis is required.

4.1 Noise - Environmental Consequences

Introduction

The purpose of this analysis is to evaluate the noise effects of the proposed action as indicated by the project's compliance with adopted noise standards for the project area. The adoption and implementation of the Napa County Airport Master Plan would result in changes in noise levels resulting from construction activities and aircraft operations on Runway 18L-36R. Both of these effects are addressed below. Based on existing conditions, noise increases resulting from the proposed actions will have a minor effect on receptors on, or near the Airport.

Effects

Effect 4.1-1: Construction Noise

Construction activity associated with the implementation of the proposed action would include the operation of heavy equipment used for construction of new runway and taxiway extensions, new bridge, fence construction and RSA grading. Construction equipment typically generates noise levels of 80-90 dBA at a distance of 50 feet while operating (U.S. Environmental Protection Agency, 1971), and equipment operations can vary from intermittent to fairly continuous. Similarly, one or multiple pieces of equipment may operate concurrently.

Assuming that a bulldozer (87 dBA), backhoe (90 dBA), and a front-end loader (82dBA) are operating concurrently in the same area, construction activities could result in noise levels of as much as 94 dBA at a distance of 50 feet from the activity. Noise levels typically decrease by about 6 dBA with each doubling distance beyond 50 feet. Therefore, a person within about 2,000 feet of a construction site would experience occasional noise levels greater than 60 dBA. Areas within about 700 feet of a construction site would experience episodes with noise levels greater than 70 dBA. Such episodes of higher noise levels would not be continuous throughout the day and generally would be restricted to daytime hours.

Aviation improvements would occur well within the existing Airport boundaries and would be located more than 1,500 feet from the nearest off-site receptors south and southwest of Runway 36L. There are no sensitive receptors located within the vicinity of the Airport.

Construction activity would include the demolition and reconstruction of the Airport Road bridge over Fagan Creek, the primary surface traffic entrance to the Airport. The bridge is located on the eastern Airport boundary, near existing railroad tracks and commercial facilities and industrial park. Construction noise associated with bridge demolition and reconstruction would be intermittent, limited to daytime hours and not affect any sensitive receptors.

Mitigation Measures

Mitigation Measure 4.1-1: Employ Sound Control Devices on Engines

All construction equipment powered by gasoline or diesel engines shall be required to have sound-control devices at least as effective as those originally provided by the manufacturer; no equipment shall be permitted to have an unmuffled exhaust.

Mitigation Measure 4.1-2: Shut off Equipment when Not in Use

Mobile noise-generating equipment and machinery will be shut off when not in use.

Mitigation Measure 4.1-3: Notify Businesses of Construction Schedule

Napa County shall notify all businesses within 1,000 feet of the bridge construction area of the construction schedule. The County shall notify effected businesses in writing and provide a telephone number and contact person in the event of questions or complaints.

Effect 4.1-2: Aircraft Operations Noise Effects of Existing Land Uses

Mead & Hunt modeled future noise conditions assuming completion of the proposed action. Projected CNEL contours are shown on Figure 3.1-2, Figure 3.1-3, and Figure 4.1-1. Figure 4.1-1 is an adjusted typical flight path map using the presumed paths considering a longer Runway 36R 18L and aircraft mix.

The extension of Runway 36R provides a longer runway to be used by JAL for pilot training. The JAL training includes touch-and go landings and takeoffs. The Traffic pattern is generally west of the Airport, over existing homes on the west bank of the Napa River. By using Runway 18L-36R, instead of 18R-36L, the training flights will move their flight tracks slightly eastward and away from existing residences.

Land uses in the vicinity of the Airport have been planned and zoned for aviation compatible uses, therefore, there are no sensitive receptors affected by current on-going aircraft operations. Zoning requirements also apply to aircraft operations including noise restrictions. Title 11, Airport, of the Napa County Zoning Ordinance addresses nearly all aspects of land use, safety and aircraft operations.

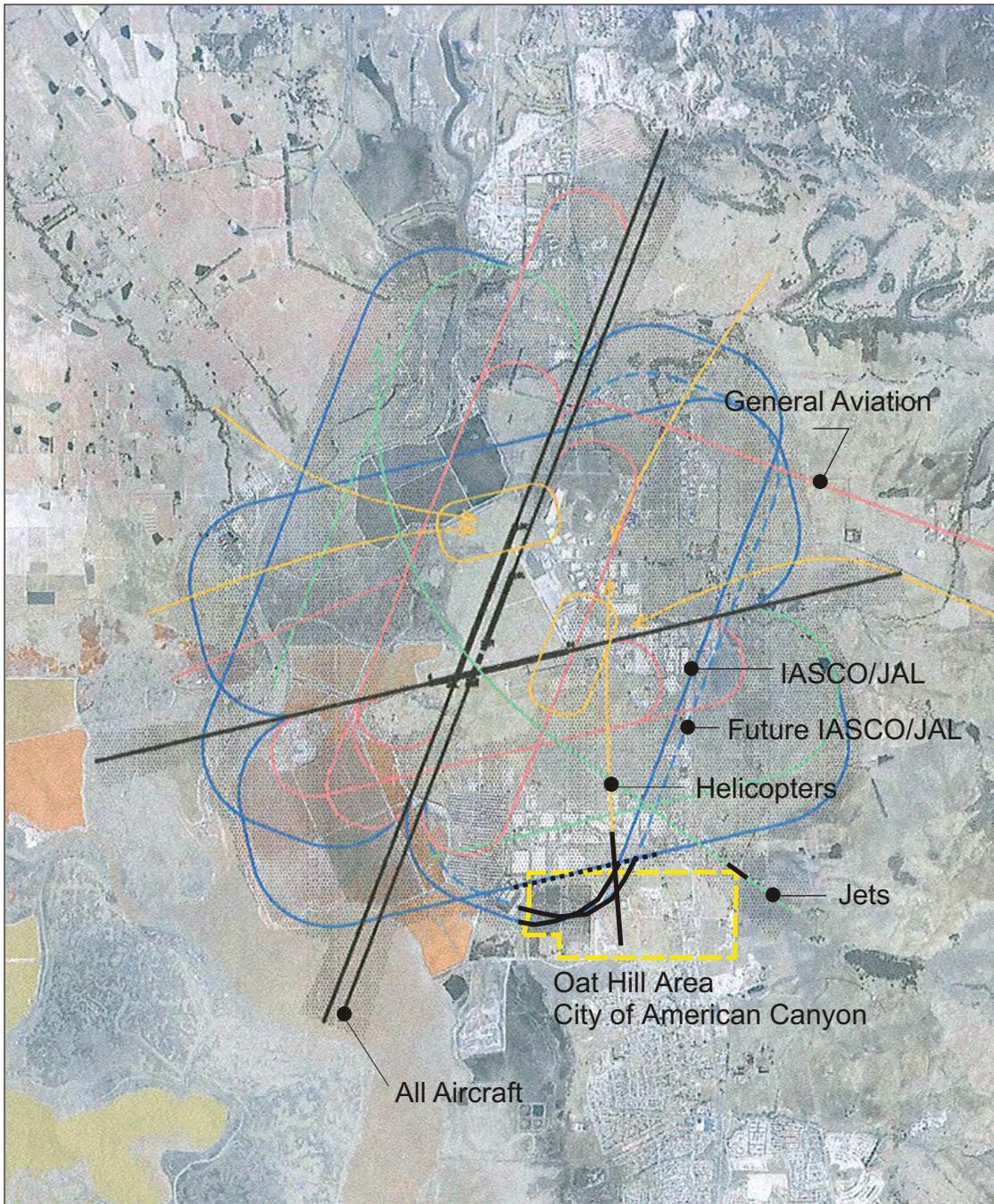
Effect 4.1-3: Aircraft Operations Noise Effects on Future Land Uses

Federal noise guidelines suggest that all land uses are acceptable outside of the 65 CNEL contour. A significant noise impact would occur if the noise analysis shows that the proposed action will cause noise sensitive areas to experience an increase in noise of CNEL 1.5dB or more at or above CNEL 65dB noise exposure when compared to the no action alternative for the same timeframe. However, this standard was established to address sensitive land uses in major metropolitan areas. In recognition of Napa County's rural environment, the Napa County Land Use Compatibility Plan (1991) adopted by the ALUC, sets a limit of 55 CNEL for most residential uses in the Airport environs. If residential units are located near other noise producing activities such as freeways, the acceptable noise level can be increased to 60 CNEL.

Currently, all of the 60 and 65 CNEL contours fall within Airport property. The 55 CNEL contour extends beyond the Airport to the north, west and south, over land uses that are designated as non-residential.

Based on increased aircraft activity, shift in aircraft types to larger aircraft and the extension of Runway 18L-36R for the near-term planning period (Figure 3.1-3, 2007) CNEL contours have the same basic shape as current contours. The 65 CNEL contour is completely within Airport property and the 60 CNEL contour extends slightly off of the Airport on the west. The 55 CNEL contour extends off of the Airport, but does not affect any sensitive land uses.

Napa County has adopted extensive land use planning and zoning ordinances to address aviation compatible development around the Airport.



**Preliminary Flight Tracks
Napa County Airport**

Napa County Airport Master Plan
Draft Environmental Assessment
December 2007

Source: Mead & Hunt, Inc. (July 2005)

Figure 4.1-1

↑
NORTH
Scale: 1" = 3,000'

4.2 Compatible Land Use - Environmental Consequences

Introduction

The proposed action would result in minor direct effects on land use within the Airport. Proposed extension of Runway 36R and Taxiway 'J' and the RSA grading at Runway 6 would occur entirely within areas currently devoted to and designated for aviation uses. The security fence through potentially sensitive environmental habitats is generally located along the western Airport boundary, adjacent to Fagan Marsh. These project components would involve physical disturbance with potential effects on biological resources, as addressed in other chapters.

The construction of a new bridge over Fagan Creek could have a temporary effect on biological resources and water quality, but would not affect the land use, since it would replace an existing bridge. The new bridge, although wider than the existing one, would not have an effect on traffic or nearby land uses since it would only be constructed to meet the current width of Airport Road and meet the circulation element of the Napa County Airport Industrial Area Specific Plan.

The acquisition of the Borges Atkins' property would remove the property from private ownership. Currently the property is not developed and used primarily for cattle grazing. Napa County will probably change the current zoning designation from industrial park/airport compatibility (IP:AC [combining zoning district; airport compatibility]) to airport (AV). Although the existing zoning designation would likely change, land use restrictions would not significantly change.

Effect 4.2-1: Property Acquisition

The proposed action includes acquisition of approximately 25.4-acres, generally referred to as the Borges Atkins property. The property is adjacent to the Airport along the southern property boundary between the FAA tower and Runway 36R. It forms the western boundary of the proposed Beringer Wine Estates, a 218-acre agricultural and industrial development (*Beringer Wine Estates, Draft EIR*, May 2001, prepared by Napa County). The acquisition of Borges Atkins property would improve safety at the Airport and provide resource protection. The proposed action's effect is considered minor because it would not result in substantial land use changes.

Effect 4.2-2: Potential Land Use Conflicts

All of the proposed actions, except the land acquisition of the Borges Atkins property, would occur on existing Airport property in areas designated for aviation compatible uses. Within the Airport property, there are no proposed actions that represent land use conflicts.

The proposed extension of Runway 18L-36R and the projected increases in Airport operations would result in noise increases in the Airport vicinity, but would not affect land use. Noise issues, as they relate to project consistency with the ALUC are addressed in Chapter 3.2.

The proposed action would have no adverse effect on adjoining land uses beyond those addressed in other chapters of the document.

Effect 4.2-3: Consistency with Napa County Plans and Zoning

The existence and importance of the Napa County Airport, and provisions for its continued operation and growth, is recognized in the Napa County General Plan (1983) land use designations and policy provisions and in the County's zoning designations (Title 11, Airports). The Airport is a principal consideration in the Napa County Airport Industrial Area Specific Plan (as amended, 1994) and the specific focus of the Napa County Airport Land Use Commission's *Airport Land Use Compatibility Plan* (revised 1999). The relationship of the proposed action to each of these documents is addressed below.

Napa County General Plan specifically recognizes the importance of the Airport to the transportation and economy of the County. The proposed action, including the property acquisition, is consistent with the General Plan goals and policy guidelines.

The proposed action is consistent with existing land use designations and zoning. Aviation improvements would be located within existing 'Airport' (AV) zoning designation. The Borges Atkins property is zoned "Industrial Park" (IP) within the 'Airport Compatibility - combining zone' (AC).

The Napa County Airport Industrial Area Specific Plan is intended to guide and facilitate development of the designated 2,945-acre Napa County Airport Industrial area. The specific plan area includes the 800-acre Napa County Airport and most of the land east of the Airport to State Route 29. All land in the specific plan area is zoned for industrial use (except the Airport) under a combining airport compatible designation. The plan specifically recognizes the need to maintain compatibility between the planning area land uses and Napa County Airport activities. Likewise, the proposed action at the Airport is consistent with the goals and policies of the specific plan.

The proposed action would involve a new bridge crossing over a channelized portion of Fagan Creek on Airport Road, the entrance to the Airport. This portion of the action would be consistent with the proposed internal circulation system layout element for arterial roads in the specific plan.

The primary function of the *Airport Land Use Compatibility Plan* (ALUCP) is to provide guidance to the Airport Land Use Commission in reviewing the land use

plans and zoning regulations of the affected local jurisdictions to ensure that future development in the Airport's environs is compatible with Airport activities. The proposed action would involve no conflict with the provisions of the ALUCP. The Airport Master Plan is consistent with the ALUCP's review criteria for airport master plans and development plans. There are no conflicts between the ALUCP, the Airport Master Plan and the proposed action.

In accordance with 49 USC 47107(a)(10), Napa County has provided written assurance that "appropriate action, including the enforcement of zoning laws, has been or will be taken, to the extent reasonable, to restrict the use of land adjacent to or in the immediate vicinity of the Napa County Airport to activities and purposes compatible with normal airport operations" (Appendix F).

Effect 4.2-4: Change in Flight Tracks

Napa County zoning ordinance, Title 11, Airports, and the ALUCP specifically identifies allowable flight tracks. Based on the 2004 Airport Master Plan, current flight tracks will change. These flight track changes may affect proposed residential land use in the City of American Canyon. Figure 4.1-1 shows future flight tracks if the proposed action is implemented.

The City of American Canyon is located south of the Airport. In 1994 the City adopted its General Plan that included residential land uses in the vicinity of Oat Hill, a topographic feature (elevation 260 feet) about 1.8 miles south of the Airport (Figure 4.1-1). Based on the ALUC airspace plan, the northern portion of the Oat Hill area is within the Part 77 horizontal surface and the remainder is within the 20:1 conical surface, but not within the approach surface for any runway. Other residential areas adopted in the City's General Plan are located south of Oat Hill.

Flight tracks, as currently identified in the ALUCP, indicate that the northern edge of the Oat Hill area is within the inbound and out bound flight tracks for Runway 6-24; the majority of the Oat Hill area is south of the flight tracks.

The newly proposed flight tracks (Mead Hunt, 2005) are shown in Figure 4.1-1. These flight tracks, although preliminary, indicate that flight patterns, all within the Part 77 horizontal surface, over the Oat Hill area likely to increase. The City and Napa County have an agreement related to land use planning and aircraft activities, dated October 16, 2003, provisions of which are relevant to the Oat Hill area. One of those provisions provides that the City and County will jointly study the ALUC definition and criteria for Zone D (horizontal surfaces, Figure 3.2-1) and its impact on future Oat Hill development.

4.3 Air Quality – Environmental Consequences

Introduction

The analysis of the air quality effects of the proposed action is based on short-term anticipated construction-related effects. The proposed actions, particularly the runway and taxiway extensions, do not directly affect the projected increase in aircraft operations. The 2004 Airport Master Plan projects an increase in annual aircraft operations from the 2001 level of 126,000 to an average of about 235,000 annual operations, or less than 1979 peak annual operations of 250,000, but equal to the 1984 levels (Mead and Hunt, 2004). The Airport configuration in 1979 and 1984 was basically the same as a no-action alternative described in this EA. Therefore, the runway and taxiway extensions are considered indirectly related to increases in aircraft operations.

Locally, the Bay Area Air Quality Management District (BAAQMD) emission inventories (2003 and 2005), assigns aviation emissions 2.2 percent to 2.4 percent of the total San Francisco Bay Area air emissions. Most of the air emissions of concern consist of carbon dioxide (CO₂) and nitrogen oxide (NO_x) emissions. Most of the aircraft emissions data collected by the BAAQMD comes from air monitoring stations located at major commercial airports (San Francisco, Oakland and San Jose) and Travis Air Force Base. Napa County Airport is one of twelve general aviation airports used to estimate air pollution contributions from aircraft.

In 2003, the Metropolitan Transportation Commission, the San Francisco Bay Conservation and Development Commission and the Association of Bay Area Governments jointly issued the *Regional Airport System Plan, General Aviation Element, Final Report*, Regional Airport Planning Committee, June 2003. The report states:

General aviation aircraft produce varying levels of emissions that contribute to the formation of ozone at the regional level. The Bay Area is a nonattainment area for ozone on current Federal air quality standards. However, these aircraft emissions are a very small fraction of the total Bay Area emission inventory (about 0.15 percent in 2000 and 0.27 percent in 2005). The increasing percentage is not the result of the growth in activity, but the declining amount of pollution generated by other sources of emissions, which are subject to greater control. Any future reductions in emissions would depend largely on action by the Environmental Protection Agency (EPA) to improve the engine technology, which appears unlikely at present. This does not mean, however, that there are no control measures that may apply to general aviation airports and their activities. Future control strategies may begin to focus on episodic controls that affect emissions on the six or seven days a year when possible ozone limits could be exceeded. While these measures have not been defined, some could apply to general aviation airports, either directly or indirectly. In addition to pollutants that contribute to ozone, general aviation aircraft also produce carbon monoxide in the engine combustion

process, but the Bay Area has been in attainment with the carbon monoxide standard since the early 1990s.

Like the air carrier airports, there is a continuing issue about how general aviation airport master plan improvements are addressed in the Federal air quality “conformity” process, which is the process defined in EPA’s regulations for showing that the future activity at the airports will not contribute to problems with the Federal ozone standard. The FAA is the lead on this issue.

The joint agency report estimates that annual aircraft operations from twenty-five San Francisco Bay Area airports in 2003, including Napa County Airport, were 3,332,600. Napa County Airport contributed 0.06 percent of these aircraft operations. Based on the BAAQMD’s estimate that 2.4 percent of San Francisco Bay Area air emissions are the result of aircraft, the Napa County Airport contribution as estimated for the year 2010 will not exceed 0.0014 percent of all aircraft emissions in the San Francisco Bay Area.

Two primary laws apply to air quality: The National Environmental Policy Act (NEPA) and the Clean Air Act (CAA). NEPA and CAA Amendments of 1990 have separate requirements and processes; however, their steps are integrated and combined for efficiency. As a Federal agency, the FAA is required under NEPA to prepare an environmental document for major federal actions that have the potential to affect the air quality of the human environment.

The project area is subject to major air quality planning programs required by both the federal Clean Air Act (CAA), which was last amended in 1990, and the California Clean Air Act of 1988. Both the federal and state statutes provide the ambient air quality standards to protect public health, timetables for progressing toward achieving and maintaining ambient standards, and the development of plans to guide the air quality improvement efforts of state and local agencies. The CAA requires states to submit a State Implementation Plan (SIP) for review and approval by EPA. The SIP contains control strategies that demonstrate attainment with national ambient air quality standards (NAAQS) by deadlines established in the CAA. The state plan is called the Clean Air Plan (CAP)(Bay Area Air Quality Management District (2005)). The SIP and CAP overlap and in general contain the same emissions control measures. The SIP control strategy is updated periodically at the direction of EPA, while the CAP is updated every three years as mandated by state law. Both the SIP and the CAP rely on the combined emission control programs of EPA, CARB, and BAAQMD.

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. The inventory includes both direct and indirect emissions that are reasonably foreseeable.

At the Napa County Airport, based on the nature of the project and consultation with state and local air quality agencies, additional analysis is not deemed appropriate, such as that

required for cumulative impacts; further analysis is not required for pollutants as emissions are not likely to exceed general conformity thresholds.

Effect 4.3-1: Construction Equipment Emissions

Construction of the proposed action would result in the temporary generation of emissions of ROG, NO_x, and PM 10. Construction-related emissions would result from construction equipment exhaust, construction employee vehicle exhaust, dust from land clearing, wind erosion of exposed soil and paving. Construction-related emissions would vary substantially, depending on the level of activity, length of construction period, the specific construction operations, types of equipment, number of personnel, wind and precipitation conditions, and soil moisture.

Mitigation Measure 4.3-1: Reduce Air Emissions

The following shall be implemented to mitigate the effects of construction activities on air quality to a minor level.

1. Water all active construction sites at least twice daily, except when naturally wet.
2. Limit on-site vehicle speed to less than or equal to 15 mph.
3. Suspend all construction activities when ambient wind speeds exceed 20 mph.
4. Plant vegetative cover on disturbed areas as soon as possible after work is completed using the grass mix currently applied to the Airport by the Napa Sanitation District.
5. Cover inactive storage piles, or stabilize such piles through watering of dust suppression agents.
6. Sweep or wash paved streets adjacent to or used as access to the construction site each day.
7. Post a sign visible to the public that gives the telephone number and name of the site contact regarding dust complaints.
8. Prior to project final approval, cover, landscape, or stabilize all disturbed ground surfaces to minimize dust emissions.

4.4 Water Quality – Environmental Consequences

The proposed action would have direct effects on surface water resources. These would include effects on Fagan Creek, seasonal wetland swales and the perennial marsh.

Effect 4.4-1: Direct Effects on Surface Water Resources

Fagan Creek

The proposed new bridge crossing over Fagan Creek (Airport Road) would involve direct effects on the Fagan Creek channel. Although bridge demolition and construction sequences have not been established, the initial concept is to construct a parallel two-lane section of bridge next to the existing bridge, when the new two lane bridge is complete, demolish the existing bridge and build the second section of two-lanes (pers. comm. Ahmann, Napa County Public Works, 2005). The bridge (Airport Road) would span the channelized section of Fagan Creek, a distance of about 40 feet. Bridge abutments would disturb a relatively small area, probably about 360 square feet within the channelized stream channel.

Wetlands and Perennial Marsh

The Runway 18L 36R and Taxiway ‘J’ extensions would have a localized effect on hydrology. The runway extension would require filling about 0.58-acres of a seasonal wetland (ECORP, 2005) at the south end of the existing runway. The Taxiway ‘J’ extension requires filling or crossing four sections of a seasonal wetland swale, two on the taxiway extension, one section on the extension of Taxiway ‘C’ and one section on the runway hold area for Runway 36R (Figure 4.4-1). The Taxiway ‘J’ extension and its associated projects would directly effect about 0.14-acres of the seasonal wetland swale.

Runway 6 RSA requires filling and grading about 2.5-ares in and adjacent to the perennial marsh within the Airport. ECORP (2005) has delineated about 0.166-acres of perennial marsh within the RSA that may be filled during implementation of the action.

The effect of the proposed action on surface water resources, particularly on wetlands, is considered adverse. Implementation of the following mitigation measures would reduce the effect to an insignificant level.

Effect 4.4-2: Alter Surface Water Drainage Pattern

Construction of the runway extension would alter the surface water drainage pattern in the vicinity of Runway 36R. The shallow drainage swale on the west side of the runway will be redirected near the south end of the existing runway to accommodate the extension. Mitigation is addressed in Mitigation Measure 4.4-3.

Effect 4.4-3: Increased Impermeable Surfaces

Construction of the runway and taxiway would increase impermeable surfaces on the Airport by about six acres, less than one per cent of the total Airport area. Runoff from these areas would collect in existing surface water drainages and be carried off-site through the existing drainage system. The increased impermeable surfaces do not contribute significant surface water and the existing drainage system has the capacity to handle the minor surface water runoff increases (Brandley, per. Comm., 2005).

Mitigation Measures

Mitigation Measure 4.4-1: Bridge over Fagan Creek

The proposed bridge crossing, including the demolition of the existing bridge, over Fagan Creek shall be designed to minimize backwater, scour, or other potential effects on the Fagan Creek channel in the bridge vicinity. Napa County shall secure the necessary agreement from the California Department of Fish and Game in accordance with Fish and Game Code, Section 1600.

Mitigation Measure 4.4-2: Wetlands and Perennial Marsh

Implementation of the proposed action would result in the loss of about 0.72-acres of wetlands and 0.166-acres of perennial marsh (Corps has not verified the preliminary wetland delineation map for the proposed action). Mitigation measures are addressed Mitigation Measure 4.4-3 below.

Mitigation Measure 4.4-3: Filling waters of the United States

Napa County shall obtain authorization from Corps for the placement of fill in Waters of the U.S., required to implement the proposed action under any alternative (except the No Action Alternative). Depending on the total amount of fill, mitigation to offset impacts to waters of the U.S. may be attached to the ACOE permit. The County shall abide by all conditions attached to the 404 permit. Napa County shall also obtain Water Quality Certification (or a waiver) from the Regional Water Quality Control Board (RWQCB), as it will be required to make the Corps permit valid. The County, if necessary, shall also enter into a Streambed Alteration Agreement (Section 1600) with CDFG.

The need for mitigation to offset impacts to jurisdictional wetlands (if any) will be determined in consultation with Corps during the permitting process. If deemed necessary, mitigation would be attached as a condition of the 404 permit. The amount and type of mitigation will be largely dependent on the selected alternative and the extent of jurisdictional waters of the U.S. as determined by Corps when they verify the wetland delineation as the first step in the permitting process. Generally, mitigation for impacts to wetlands are at a ratio of 2:1 or 2.5:1, depending on level of disturbance and wetland functions and values. Depending on the conditions of the permit, this mitigation may be accomplished through contributing to an approved mitigation bank, on- or off-site creation, restoration, and/or preservation.

By securing and abiding by the conditions of Section 404 of the Clean Water Act permit, including providing mitigation and obtaining Section 401 Water Quality Certification from the RWQCB, impacts to jurisdictional Waters of the U.S. and wetlands would be below the threshold of significance.

4.5 Cultural Resources – Environmental Consequences

Effects

Effect 4.5-1: Impacts on Archaeological Resources

The FAA has determined the proposed undertaking will not affect any properties eligible for listing in the National Register of Historic Places (NRHP). The FAA conducted Section 106 consultation (National Historic Preservation Act) with the California State Historic Preservation Office. Confirmation of the consultation is included in Appendix A.

Excavation associated with the action could encounter as yet unidentified cultural materials. If these deposits were determined to be significant under state or federal regulations, the disturbance of the buried deposit would be considered an adverse effect under Section 106 of the National Historic Preservation Act. Implementation of the following mitigation measures would reduce this effect to a minor level.

Mitigation Measures

Mitigation Measure 4.5-1: Halt Construction if Resources are Discovered

If subsurface cultural materials are encountered, all construction in that area shall be halted until a qualified archaeologist can examine the materials and determine their significance. Further mitigation and/or construction shall be consistent with recommendations from the archaeologist.

Mitigation Measure 4.5-2: Stop Work and Comply with Applicable Laws if Human Remains are Discovered

If human remains are discovered during project construction, work shall stop at the discovery location and any nearby area reasonably suspected to overlie adjacent human remains (Public Resources Code, Section 7050.5). The county coroner shall be contacted to determine if the cause of death must be investigated.

If the coroner determined that the remains are of Native American origin, it shall be necessary to comply with state laws regarding the disposition of Native American burials, which fall within the jurisdiction of the Native American Heritage Commission (NAHC) (Pub. Res. Code, Section 5097). The coroner shall contact the NAHC. The descendants or most likely descendants of the deceased shall be contacted. Work shall not resume until descendants have made a recommendation to the landowner or the person responsible for the excavation work for means of treating or disposing of, with appropriate dignity, the human remains and any associated grave goods as provided in Public Resources Code, Section 5097.98. Work may resume if NAHC is unable to identify a descendant, or a descendant fails to make a recommendation.

4.6 Fish, Wildlife and Plants – Environmental Consequences

Introduction

The USFWS designated most of the Airport as critical habitat for the Vernal pool fairy shrimp. Four biotic communities were identified within the Airport: California Annual Grassland, Perennial Salt Marsh, Seasonal Salt Marsh and Riparian Corridor. This chapter addresses the effects of the proposed action on designated critical habitat and the four primary biotic communities.

The FAA entered into formal consultation with the USFWS pursuant to Section 7 of the Endangered Species Act. The result of the formal consultation, a Biological Opinion issued by the USFWS, is included as Appendix E. The Biological Opinion concluded that conservation measures to protect vernal pool fairy shrimp habitat could be framed in such a way as to continue airport operations.

Effects

Effect 4.6-1: USFWS Critical Habitat for the Vernal Pool Fairy Shrimp

Some of the proposed actions addressed in this EA fall within the boundaries of a Critical Habitat unit (Unit 17) for Vernal pool fairy shrimp (*Branchinecta lynchi*) as designated by the USFWS. Section 7 of the federal Endangered Species Act (ESA) applies to federal agency actions and sets forth requirements for consultation to determine if the proposed action “may affect” an endangered or threatened species. If an agency determines that an action “may affect” a threatened or endangered species, then Section 7(a)(2) requires each agency to consult with USFWS or National Marine Fisheries Services (NMFS), as appropriate, to ensure that any action the agency authorizes, funds, or carries out is not likely to jeopardize the continued existence of any Federally listed endangered or threatened species or result in destruction or adverse modification of critical habitat. Additionally, Section 9 prohibits a Federal agency from taking, without an incidental take permit, any endangered species.

Final ruling on critical habitat for the Vernal pool fairy shrimp was established by USFWS in August 2005. In February 2006, the USFWS issued its final administrative determination for critical habitat for Vernal pool fairy shrimp in California and Oregon. One of the California critical habitat units, Unit 17-Napa River Unit (USGS 1:24,000 scale quadrangle Cuttings Wharf), includes most of the Napa County Airport.

Section 7 of the ESA (16 U.S.C. § 1536) requires each federal agency to insure that any action authorized, funded, or carried out by the agency is not likely to jeopardize the continued existence of a listed species or "result in the destruction or adverse *modification of...* " critical habitat. If an action is likely to jeopardize or result in adverse modification of critical habitat, the agency must consult with the USFWS.

Under the statutory language consultation is triggered by either jeopardy or adverse modification of critical habitat. The consultation process applies to all actions by federal agencies and to all actions with a federal nexus through an approval, permit, or funding, if there is reason to believe that a listed species may be present in the project area and is likely to be affected by project activities.

Consultation entails study of the likely effects of project actions, a statement by the Secretary on whether jeopardy or adverse modification is found and suggestions for reasonable and prudent alternatives to the harmful aspects of the proposed project in order to avoid jeopardy or adverse modification of critical habitat.

Between April and September 2006, the FAA and the USFWS conducted formal consultations to determine the affect of the proposed federal action on Vernal pool fairy shrimp with the critical habitat within the Airport. In October 2006 the USFWS issued a biological opinion in accordance with the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 *et seq.*), which concluded that the USFWS “concur[s] with [the FAA] determination that the proposed action is not likely to adversely affect the vernal pool fairy shrimp.” The UFWS agreed that habitat loose within the annual grassland would not affect Vernal pool fairy shrimp habitat. No mitigation measures are required for Vernal pool fairy shrimp.

The environmental consequences of annual grassland habitat loss within the designated critical habitat area are evaluated in Effect 4.6-2: Loss of California Annual Grassland.

The FAA-prepared biological assessment and the USFWS biological opinion are attached to this EA as Appendix E. The USFWS prepared its biological opinion after review, consultation and comment on the FAA-prepared biological assessment for the Airport. The biological assessment was prepared in accordance with legal requirements set forth under Section 7 of the Endangered Species Act (16 U.S.C. 1536 (c)), and followed the standards established in FAA, NEPA guidance and ESA guidance.

Effect 4.6-2: Loss of California Annual Grassland

Project construction would result in the direct, permanent removal of approximately six acres of annual grassland habitat within the designated critical habitat area on the Airport. The USFWS in its biological opinion (October 2006, attached to this EA in Appendix E) determined the following:

Additional acres adjacent to the construction footprint may be temporarily disturbed during construction because of grading, equipment storage or vehicle travel. The runway safety area (Runway 6-24) and areas of temporary disturbance during construction are expected to recover to annual grassland habitat within 1 – 2 years following project construction.

The removal of non-native annual grassland, a common and widespread habitat type in southern Napa County, would not result in a substantial regional decrease in that habitat type. Furthermore, removal of annual grassland would not result in a substantial adverse effect on non-listed special status species that may forage on the Airport..

Mitigation Measures 4.6-1: Annual Grassland Habitat (Vernal Pool Fairy Shrimp Critical Habitat)

The following mitigation measures are derived from the USFWS biological opinion, conservation measures for Vernal pool fairy shrimp critical habitat.

1. All construction activities associated with the proposed action would be limited to the non-rainy season, typically May through October.
2. Prior to any construction in vernal pool fairy shrimp critical habitat areas, all contractor employees and other personnel involved with the proposed work would attend a biological resources education class. The biological resources education class would consist of a brief presentation by a person(s) knowledgeable in vernal pool fairy shrimp biology; and critical habitat and legislative protection to explain endangered species concerns to contractors and their employees. The program would include the following: a description of the vernal pool fairy shrimp habitat needs; a report of the occurrence of these species in the action area; an explanation of the protection afforded these species, and vernal pool fairy shrimp critical habitats under the Act; and a list of measures being taken to reduce impacts to these species and critical habitats during construction and implementation of the proposed action. A fact sheet conveying this information would be prepared for distribution to the above-mentioned people and anyone else who enters vernal pool fairy shrimp critical habitat areas. Classes would be repeated for all new employees before they access the vernal pool fairy shrimp critical habitat areas.
3. Prior to the initiation of construction activities for the proposed action, all avoided vernal pools and other seasonal wetlands within the action area would be designated as environmentally sensitive areas (ESAs). During construction, no activities, including stockpiling soil, driving or parking any equipment or vehicles, storing supplies or containers, and creation of borrow pits would be permitted within the ESAs. The wetlands would be marked with bright orange fencing at least five feet (1.54 meters) tall, by a Service-approved biologist. Such fencing would be adequate to prevent encroachment of construction personnel and equipment into vernal pool and other seasonal wetland areas during project work activities. Not only would the immediate boundaries of the vernal pools and other seasonal wetlands be protected but also the watershed that may be affected. The fencing would buffer vernal pool and other seasonal wetland areas by 250 feet (76.20 meters), if possible. Such fencing would be inspected and maintained daily until completion of the

proposed action when it would be removed. Adequate signage would be placed on the fence to indicate areas to be avoided.

4. A Service-approved biologist would be onsite during all initial groundbreaking activities within vernal pool fairy shrimp critical habitat areas. The written qualifications of the any on-site biologist/monitor selected to work within these areas would be presented to the Service at least thirty (30) calendar days prior to the planned initiation of work activities within these areas for review and approval by the Service. After initial groundbreaking has occurred, the project proponent would designate a person to monitor work activities within vernal pool fairy shrimp critical habitat areas. The Service-approved biologist would ensure that this individual receives the training class as outlined above. The biological monitor would be present on-site each day that work occurs within 100 feet (30.48 meters) of any ESA. The monitor and the Service-approved biologist would have the authority to halt any action that might result in impacts to an ESA.
5. No construction activities, including travel ways, parking or maintenance, would occur within 100 feet (30.5 meters) of any vernal pools or seasonal wetlands avoided during implementation of the proposed action. No construction activities would occur within 300 feet (91.4 meters) of a vernal pool found to support vernal pool fairy shrimp during surveys in 2002/2003.
6. During construction of the proposed action, stockpiled topsoil and other construction materials (*e.g.*, soil, debris, *etc.*) would not be placed in areas where the materials may erode into vernal pools or other seasonal wetlands through exposure to wind, rain, etc. Runoff from dust control, and oil or other chemicals used in other construction activities would be retained in the construction site and prevented from flowing into adjacent vernal pool and other seasonal wetland areas. The runoff would be retained in the construction site by creating small earthen berms, installing silt fences or hay-bale dikes, or implementing other measures on the construction site to prevent runoff from entering the vernal pools and other seasonal wetlands.
7. To compensate for the permanent loss of about six acres (2.4 hectares) and the temporary disturbance of about 1.1 acres (0.45 hectare) of non-native grasslands within Critical Habitat Unit 17 for the vernal pool fairy shrimp, the project proponent would set aside and preserve 18 acres (7.3 hectares) along the southern boundary of the Airport prior to any groundbreaking at the Airport. The project proponent would develop and implement a management, operations, and monitoring plan for the 18 acres (7.3 hectares) preserved on-site. Prior to any groundbreaking at the Airport, the location of the preserve area and the management, operations, and monitoring plan would be subject to review and approval by the Service. The plan would include, but not be limited to, the following components: discussion of the management and maintenance of the area to benefit vernal pool fairy shrimp critical habitat;

discussion on funding for implementation of the plan; discussion of runoff control and maintenance of hydrology; provisions for management and maintenance of upland habitat; discussion of grazing strategies, non-native species control, sedimentation, erosion, and controlled burning, if applicable; appropriate individual(s) to undertake the duties of implementing the management plan; and provisions for a monitoring program, including a monitoring report that addresses the attainment of objectives within the maintenance/ management plan. The management plan would include a list of activities prohibited in the 18-acre (7.3-hectare) preserve area that are inconsistent with the maintenance of this area to benefit vernal pool fairy shrimp critical habitat, including, but not limited to: (1) a restriction that no vehicles (except as outlined in the management plan) would be allowed; (2) alteration of existing topography or any other alteration or uses for any purposes, including the exploration for, or development of mineral extraction; (3) placement of any structures; (4) dumping and/or burning of rubbish, garbage, or any other wastes or fill materials; (5) building of any roads or trails; (6) killing, removal, alteration, or replacement of any existing native vegetation; (7) placement of storm water drains or other diversion or alteration of water that would disturb the existing hydrologic characteristics of watersheds on-site or on adjacent areas; (8) fire protection activities not required to protect any existing structures; (9) use of pesticides, rodenticides, and herbicides; and (10) actions that would degrade the quality of runoff from the area.

8. The project proponent would prepare and implement a detailed erosion control plan. The plan would, at minimum, require revegetation of areas temporarily disturbed, and if necessary, protection of stream banks and slopes, and erosion control. Construction plans and specifications for all elements of the projects would include provisions for erosion control in the event of summertime or early seasonal rainfall during construction, and for disturbed areas that remain unvegetated during the rainy season. Rainy season erosion control measures would be in place before October 1 of each year.
9. Construction activities would comply with State National Pollutant Discharge Elimination System permit requirements.
10. Temporary adverse effects, such as construction runoff effects or water quality effects, to vernal pools, seasonal wetlands, and tidal wetlands avoided on-site would be prevented by use of best management practices during construction and by directing surface water runoff from paved surfaces into the Airport drainage system.
11. During construction of the proposed action, the project proponent would ensure that construction equipment and vehicles operated in the action area are checked and maintained daily to prevent leaks of fuels, lubricants or other fluids. The contractor(s) would develop an approved Hazardous Materials

Spill Prevention Plan before starting any construction activities.

12. The project proponent would provide the Service with annual reports to describe the progress of implementation of all the commitments in the *Proposed Conservation Measures* and *Terms and Conditions* sections of this biological opinion. The reports would include: (1) dates that construction occurred; (2) pertinent information concerning the applicant's success in meeting project compensation measures; (3) an explanation of failure to meet such measures, if any, and recommendations for remedial actions and request for approval from the Service, if necessary; (4) known project effects on federally listed species, if any; (5) occurrences of incidental take of federally listed species, if any; and (6) other pertinent information. The first report would be submitted by January 31, the first year after any ground disturbance, and annually on January 31 thereafter until all terms and conditions and/or performance criteria are met.
13. If requested, during or upon completion of construction activities in vernal pool critical habitat areas, the on-site biologist, and/or representative from the FAA and/or project proponent would accompany Service or California Department of Fish and Game personnel on an on-site inspection of the action area to review project effects to critical habitat areas.

Effect 4.6-3: Loss of Marsh Habitat

The construction of the security fence through a 650-foot portion of Fagan Marsh on the Airport has the potential to directly and indirectly impact salt marsh harvest mouse habitat. The estimated impact on the pickleweed habitat favored by the mouse may be about 0.4 acres (25 feet X 650 feet). This effect is temporary since it will result primarily from construction activities and should recover. The only permanent effect will be a 6-foot high chain link fence along the Airport property line. The fence, once constructed will not affect the mouse's ability to move through the fence line.

Likewise, the habitat for the California black rail may be disrupted during fence construction. However, the bird does not depend on pickleweed habitat, and if it were present, it would more likely be found in brackish or saline water channels, or in rushes.

Mitigation Measures 4.6-2: Marsh Habitat

The following mitigation measures are derived from the USFWS biological opinion, conservation measures for California clapper rail, salt marsh harvest mouse and soft bird's beak, and their habitat in Fagan Marsh.

1. All construction activities associated with the proposed action would be limited to the non-rainy season, typically May through October.

2. Prior to any construction in Fagan Marsh, all contractor employees and other personnel involved with the proposed work would attend a biological resources education class. The biological resources education class would consist of a brief presentation by a person(s) knowledgeable in California clapper rail, salt marsh harvest mouse and soft bird's beak biology; and soft bird's beak critical habitats; and legislative protection to explain endangered species concerns to contractors and their employees. The program would include the following: a description of the California clapper rail, salt marsh harvest mouse and soft bird's beak and their habitat needs; a report of the occurrence of these species in the action area; an explanation of the protection afforded these species and soft bird's beak critical habitats under the Act; and a list of measures being taken to reduce impacts to these species and critical habitats during construction and implementation of the proposed action. A fact sheet conveying this information would be prepared for distribution to the above-mentioned people and anyone else who enters Fagan Marsh. Classes would be repeated for all new employees before they access Fagan Marsh.
3. All work associated with construction of the new security fence (and removal of the existing fence) within Fagan Marsh would be avoided during the California clapper rail breeding season from February 1 through August 31 each year. If work activities in Fagan Marsh could not be avoided during the clapper rail breeding season, then preconstruction surveys would be conducted. Preconstruction surveys for California clapper rails in Fagan Marsh would follow the Service's January 21, 2000, draft survey protocol (or any subsequent revision). Prior to the implementation of planned surveys, the proposed survey protocol(s) would be provided to the Service for review and approval. After the surveys are completed and prior to initiation of the construction activities, the results of the surveys would be provided to the Service for review to evaluate the appropriateness of work being proposed by the project proponent. If clapper rails are not detected within 250 feet (62.5 meters) of the work area, then work would proceed. If clapper rails are detected within 250 feet (62.5 meters) of the construction area, then the project proponents would consult with the Service to determine what, if any, additional measures may be required to allow construction work to proceed. Construction of the new security fence in Fagan Marsh would not be initiated until after the Service has approved the planned work based on the review of the survey results.
4. The new security fence would not cross any waterways within Fagan Marsh. All soil cuttings from the drilling of fence posts would be collected and disposed in an upland area. After the posts are installed and the holes filled with concrete, the top six inches (15.2 centimeters) of the holes would be backfilled with native soil. The disturbed area around each post would be re-seeded with pickleweed to prevent establishment of non-native, invasive plant species. A qualified botanist would conduct a non-native plant assessment of areas subject to construction activities and recommend specific measures to

control the spread of non-native plant species. Specific vegetative performance criteria would be developed and defined in a wetland mitigation and monitoring plan. The bottom of the section of chain link security fence through Fagan Marsh would be raised approximately six inches (15.2 centimeters) above the existing ground surface to allow unimpeded ground movement by salt marsh harvest mouse and California clapper rails. The top of the fence posts would be constructed with commercially available dense needle strips to prevent potential avian predators from perching on the fence posts. No crossbars would be installed between fence posts along the top of the chain link fence. No access road or walkway would be constructed along the new fence line.

5. A qualified biologist/botanist permitted by the Service would conduct a preconstruction survey for soft bird's-beak, no more than three (3) days in advance of the proposed fence construction in Fagan Marsh. The biologist would document and mark in the marsh any occurrences of this plant. The biologist would instruct the construction crews to avoid any plants during construction of the new fence. The biologist would be present onsite to monitor for soft bird's beak during excavation and installation work for the proposed fence in Fagan Marsh. The biological monitor would have the authority to stop work if deemed necessary for any reason to protect the plant or any other federally listed species. The areas excavated to install fence posts would be immediately revegetated with native plants (primarily pickleweed) to prevent the incursion and establishment of non-native, invasive plants. The biologist/botanist would visit the revegetated areas at least monthly for the first three months after revegetation to ensure plant survival. The project proponent would revegetate areas as determined by the biologist/botanist.
6. A qualified biologist permitted by the Service would be present onsite to monitor for salt harvest mice during excavation and installation work for the proposed fence in Fagan Marsh. The biologist monitor would have the authority to stop work if deemed necessary for any reason to protect salt marsh harvest mice or any other federally listed species. If a mouse of any species is observed in the work area, then the biological monitor would stop work immediately until the mouse leaves the work area on its own volition. If the mouse does not leave the work area, work would not be initiated again until after the Service and California Department of Fish and Game (CDFG) have been contacted and a decision reached on how to proceed with further work activities. The biological monitor would direct the project engineer or construction inspector on how to proceed accordingly.
7. The written qualifications of the any on-site biologist/monitor selected to work within Fagan Marsh would be presented to the Service at least thirty (30) calendar days prior to the planned initiation of work activities within this area for review and approval by the Service.

8. A representative(s) would be appointed by the project proponent who will be the contact source for any employee or contractor who might inadvertently kill or injure a California clapper rail or salt marsh harvest mouse or who finds a dead, injured, or entrapped individual. The representative(s) would be identified during the employees' biological resources education program. The representative's name and telephone number would be provided to the Service prior to the initiation of any construction activities in Fagan Marsh.
9. The project proponent would develop a final revegetation and monitoring plan for Fagan Marsh which will specifically define vegetative performance criteria and address control of non-native species, including *Lepidium* and non-native *Spartina* species. The plan would be provided to the Service for review and approval prior to the implementation of any work activities within Fagan Marsh.
10. Construction activities would comply with State National Pollutant Discharge Elimination System permit requirements.
11. Temporary adverse effects, such as construction runoff effects or water quality effects seasonal wetlands and tidal wetlands avoided on-site would be prevented by use of best management practices during construction and by directing surface water runoff from paved surfaces into the Airport drainage system.
12. During construction of the proposed action, the project proponent would ensure that construction equipment and vehicles operated in the action area are checked and maintained daily to prevent leaks of fuels, lubricants or other fluids. The contractor(s) would develop an approved Hazardous Materials Spill Prevention Plan before starting any construction activities.
13. The project proponent would provide the Service with annual reports to describe the progress of implementation of all the commitments in the *Proposed Conservation Measures* and *Terms and Conditions* sections of this biological opinion. The reports would include: (1) dates that construction occurred; (2) pertinent information concerning the applicant's success in meeting project compensation measures; (3) an explanation of failure to meet such measures, if any, and recommendations for remedial actions and request for approval from the Service, if necessary; (4) known project effects on federally listed species, if any; (5) occurrences of incidental take of federally listed species, if any; and (6) other pertinent information. The first report would be submitted by January 31, the first year after any ground disturbance, and annually on January 31 thereafter until all terms and conditions and/or performance criteria are met.
14. If requested, during or upon completion of construction activities in Fagan Marsh and vernal pool critical habitat areas, the on-site biologist, and/or

representative from the FAA and/or project proponent would accompany Service or California Department of Fish and Game personnel on an on-site inspection of the action area to review project effects to these areas.

Effect 4.6-4: Riparian Corridor

Fagan Creek is either channelized or directed into box culverts beneath the Airport for all but about 450 feet in the northwestern portion of the Airport. This riparian corridor hydrologically connects the Airport to Fagan Slough and the Napa River. A portion of the security fence traverses the corridor.

4.7 Threatened and Endangered Federal Species of Flora and Fauna – Environmental Consequences

Special Status Federal Species Plants

Special status species are plants and animals that are legally protected under the federal Endangered Species Act (ESA), the California Endangered Species Act (CESA), or other regulations and species considered sufficiently rare by the scientific community to qualify for such listing.

Based on biological studies conducted on the Airport since 1991, including a biological assessment (April 2006) there are no known, or identified federal special status species of plants in the Airport environs. The only federal special status plant species, the Suisun Marsh aster, was reported in 2002, along Sheehy Creek, before the creek became part of the Airport property. Six plants were harvested during creek restoration. The aster has not been reported on any other area of the Airport.

Although not reported on the Airport, Soft bird's-beak is a federally listed endangered plant; this annual herb is also listed by the State of California as rare and is on CNPS List 1B. It is a partially parasitic plant of the upper reaches of coastal salt marsh vegetated by saltgrass, pickleweed and alkali heath. In the vicinity of the Airport, the plant is known from west of the Airport between Fagan Slough and Steamboat Slough, and Fly Bay northwest of Edgerly Island. In its range, non-native plants, erosion, trampling and marsh drainage threaten soft bird's-beak. There are no known occurrences of the species on the Airport. However, during consultation with the USFWS, it was determined that soft bird's beak must be accounted for during construction activities in Fagan Marsh. Therefore, its identification and protection is included in the mitigation measures.

Special Status Federal Species Animals

Habitat for four federally protected animal species have been identified on, or near, the Airport: the vernal pool fairy shrimp; the California clapper rail; the salt-marsh harvest mouse, and the California red legged frog.

Effect 4.7-1: Vernal pool fairy shrimp

The vernal pool fairy shrimp (threatened) breeds in one of the vernal pools (along the southern Airport property line. Habitat for vernal pool shrimp will not be affected, as it is located outside the construction footprint, provided the recommended mitigation measures are implemented (Mitigation Measure 4.7-1). In particular, the security fence and existing Airport restrictions on public access provide a considerable level of protection to vernal pool shrimp.

Effect 4.7-2: California clapper rail

One avian taxa, the California clapper rail (endangered), is reported in Fagan Marsh, and habitat for the bird is present along the western boundary of the Airport. During construction the birds may leave the immediate area because of construction noise and human presence. Upon project completion the birds are expected to return (Mitigation Measure 4.7-2). The habitat for the California clapper rail may be disrupted during fence construction. However, the bird does not depend on pickleweed habitat, and if it were present, it would be more likely to be found in brackish or saline water channels or in rushes

Effect 4.7-3: Salt marsh harvest mouse

One mammal, the salt-marsh harvest mouse (endangered) is assumed to be present in the Fagan Marsh Ecological Reserve along the western edge of the Airport. During construction of the perimeter fence their habitat will be disturbed. This effect is believed to be for the short-term (Mitigation Measure 4.7-3). The construction of the security fence through a 650-foot portion of Fagan Marsh on the Airport has the potential to directly and indirectly impact salt-marsh harvest mouse habitat. The estimated impact on the pickleweed habitat favored by the mouse may be about 0.4 acres (25 feet by 650 feet). This effect is temporary since it will result primarily from construction activities and should recover. The permanent effect will be a 7-foot high chain link fence along the Airport property line. The fence, once constructed will not affect the mouse's ability to move through the fence line.

Effect 4.7-4: California red legged frog

Protocol level surveys in Sheehy Creek (2002) for the red-legged frog (threatened) found no frogs. The frog is not known to occur in Fagan Creek or other wetlands on the Airport. The Fagan Creek watershed was included in the American Canyon Critical Habitat area (USFWS, 2001) designated for the California red-legged frog but the area was withdrawn in 2006.

Prior to January 2006 Fagan Creek, at the western edge of the Airport, supported riparian corridor, a potential habitat for the frog. However, flooding in January 2006 affected Fagan Creek. Fine sediments and sand were deposited in the stream channel and the riparian corridor; a number of willow trees were swept away as was much of the understory. The flooding reduced available habitat, in the near term, for the California red-legged frog. No mitigation measures are proposed, related to the Airport projects.

Mitigation Measure 4.7-1: Vernal pool fairy shrimp

Vernal pool fairy shrimp were collected from one vernal pool along the southern Airport property line (Section 3.9). That vernal pool, shown in Figure 3.8-1, will

not be disturbed during any construction project and its upslope drainage area will remain undisturbed. Napa County shall comply with following mitigation measures as described in the USFWS biological opinion (October 2006).

1. All construction activities associated with the proposed action would be limited to the non-rainy season, typically May through October.
2. Prior to any construction in vernal pool fairy shrimp critical habitat areas, all contractor employees and other personnel involved with the proposed work would attend a biological resources education class. The biological resources education class would consist of a brief presentation by a person(s) knowledgeable in vernal pool fairy shrimp biology; and critical habitat and legislative protection to explain endangered species concerns to contractors and their employees. The program would include the following: a description of the vernal pool fairy shrimp habitat needs; a report of the occurrence of these species in the action area; an explanation of the protection afforded these species, and vernal pool fairy shrimp critical habitats under the Act; and a list of measures being taken to reduce impacts to these species and critical habitats during construction and implementation of the proposed action. A fact sheet conveying this information would be prepared for distribution to the above-mentioned people and anyone else who enters vernal pool fairy shrimp critical habitat areas. Classes would be repeated for all new employees before they access the vernal pool fairy shrimp critical habitat areas.
3. Prior to the initiation of construction activities for the proposed action, all avoided vernal pools and other seasonal wetlands within the action area would be designated as environmentally sensitive areas (ESAs). During construction, no activities, including stockpiling soil, driving or parking any equipment or vehicles, storing supplies or containers, and creation of borrow pits would be permitted within the ESAs. The wetlands would be marked with bright orange fencing at least five feet (1.54 meters) tall, by a Service-approved biologist. Such fencing would be adequate to prevent encroachment of construction personnel and equipment into vernal pool and other seasonal wetland areas during project work activities. Not only would the immediate boundaries of the vernal pools and other seasonal wetlands be protected but also the watershed that may be affected. The fencing would buffer vernal pool and other seasonal wetland areas by 250 feet (76.20 meters), if possible. Such fencing would be inspected and maintained daily until completion of the proposed action when it would be removed. Adequate signage would be placed on the fence to indicate areas to be avoided.
4. A Service-approved biologist would be onsite during all initial groundbreaking activities within vernal pool fairy shrimp critical habitat areas. The written qualifications of the any on-site biologist/monitor selected to work within these areas would be presented to the Service at least thirty (30) calendar days prior to the planned initiation of work activities within these areas for review and

approval by the Service. After initial groundbreaking has occurred, the project proponent would designate a person to monitor work activities within vernal pool fairy shrimp critical habitat areas. The Service-approved biologist would ensure that this individual receives the training class as outlined above. The biological monitor would be present on-site each day that work occurs within 100 feet (30.48 meters) of any ESA. The monitor and the Service-approved biologist would have the authority to halt any action that might result in impacts to an ESA.

5. No construction activities, including travel ways, parking or maintenance, would occur within 100 feet (30.5 meters) of any vernal pools or seasonal wetlands avoided during implementation of the proposed action. No construction activities would occur within 300 feet (91.4 meters) of a vernal pool found to support vernal pool fairy shrimp during surveys in 2002/2003.
6. During construction of the proposed action, stockpiled topsoil and other construction materials (*e.g.*, soil, debris, *etc.*) would not be placed in areas where the materials may erode into vernal pools or other seasonal wetlands through exposure to wind, rain, etc. Runoff from dust control, and oil or other chemicals used in other construction activities would be retained in the construction site and prevented from flowing into adjacent vernal pool and other seasonal wetland areas. The runoff would be retained in the construction site by creating small earthen berms, installing silt fences or hay-bale dikes, or implementing other measures on the construction site to prevent runoff from entering the vernal pools and other seasonal wetlands.
7. To compensate for the permanent loss of about six acres (2.4 hectares) and the temporary disturbance of about 1.1 acres (0.45 hectare) of non-native grasslands within Critical Habitat Unit 17 for the vernal pool fairy shrimp, the project proponent would set aside and preserve 18 acres (7.3 hectares) along the southern boundary of the Airport prior to any groundbreaking at the Airport. The project proponent would develop and implement a management, operations, and monitoring plan for the 18 acres (7.3 hectares) preserved on-site. Prior to any groundbreaking at the Airport, the location of the preserve area and the management, operations, and monitoring plan would be subject to review and approval by the Service. The plan would include, but not be limited to, the following components: discussion of the management and maintenance of the area to benefit vernal pool fairy shrimp critical habitat; discussion on funding for implementation of the plan; discussion of runoff control and maintenance of hydrology; provisions for management and maintenance of upland habitat; discussion of grazing strategies, non-native species control, sedimentation, erosion, and controlled burning, if applicable; appropriate individual(s) to undertake the duties of implementing the management plan; and provisions for a monitoring program, including a monitoring report that addresses the attainment of objectives within the maintenance/ management plan. The management plan would include a list of

activities prohibited in the 18-acre (7.3-hectare) preserve area that are inconsistent with the maintenance of this area to benefit vernal pool fairy shrimp critical habitat, including, but not limited to: (1) a restriction that no vehicles (except as outlined in the management plan) would be allowed; (2) alteration of existing topography or any other alteration or uses for any purposes, including the exploration for, or development of mineral extraction; (3) placement of any structures; (4) dumping and/or burning of rubbish, garbage, or any other wastes or fill materials; (5) building of any roads or trails; (6) killing, removal, alteration, or replacement of any existing native vegetation; (7) placement of storm water drains or other diversion or alteration of water that would disturb the existing hydrologic characteristics of watersheds on-site or on adjacent areas; (8) fire protection activities not required to protect any existing structures; (9) use of pesticides, rodenticides, and herbicides; and (10) actions that would degrade the quality of runoff from the area.

8. The project proponent would prepare and implement a detailed erosion control plan. The plan would, at minimum, require revegetation of areas temporarily disturbed, and if necessary, protection of stream banks and slopes, and erosion control. Construction plans and specifications for all elements of the projects would include provisions for erosion control in the event of summertime or early seasonal rainfall during construction, and for disturbed areas that remain unvegetated during the rainy season. Rainy season erosion control measures would be in place before October 1 of each year.
9. Construction activities would comply with State National Pollutant Discharge Elimination System permit requirements.
10. Temporary adverse effects, such as construction runoff effects or water quality effects, to vernal pools, seasonal wetlands, and tidal wetlands avoided on-site would be prevented by use of best management practices during construction and by directing surface water runoff from paved surfaces into the Airport drainage system.
11. During construction of the proposed action, the project proponent would ensure that construction equipment and vehicles operated in the action area are checked and maintained daily to prevent leaks of fuels, lubricants or other fluids. The contractor(s) would develop an approved Hazardous Materials Spill Prevention Plan before starting any construction activities.
12. The project proponent would provide the Service with annual reports to describe the progress of implementation of all the commitments in the *Proposed Conservation Measures* and *Terms and Conditions* sections of this biological opinion. The reports would include: (1) dates that construction occurred; (2) pertinent information concerning the applicant's success in meeting project compensation measures; (3) an explanation of failure to meet

such measures, if any, and recommendations for remedial actions and request for approval from the Service, if necessary; (4) known project effects on federally listed species, if any; (5) occurrences of incidental take of federally listed species, if any; and (6) other pertinent information. The first report would be submitted by January 31, the first year after any ground disturbance, and annually on January 31 thereafter until all terms and conditions and/or performance criteria are met.

13. If requested, during or upon completion of construction activities in vernal pool critical habitat areas, the on-site biologist, and/or representative from the FAA and/or project proponent would accompany Service or California Department of Fish and Game personnel on an on-site inspection of the action area to review project effects to critical habitat areas.

Mitigation Measure 4.7-2: California clapper rail; Salt marsh harvest mouse and soft bird's beak

Fagan Marsh on the Airport is the eastern-most extension of the Fagan Marsh Ecological Reserve. In order to preserve and manage this resource, and known habitat for the California clapper rail, Napa County shall preserve, on the Airport, a total of 5.28 acres of the Fagan Marsh west of Runway 18R-36L. The County shall provide a management plan, prepared by a qualified biologist, in cooperation with CDFG, to ensure compatible goals and objectives with those of the Fagan Marsh Ecological Reserve. Napa County shall comply with following mitigation measures as described in the USFWS biological opinion (October 2006).

1. All construction activities associated with the proposed action would be limited to the non-rainy season, typically May through October.
2. Prior to any construction in Fagan Marsh, all contractor employees and other personnel involved with the proposed work would attend a biological resources education class. The biological resources education class would consist of a brief presentation by a person(s) knowledgeable in California clapper rail, salt marsh harvest mouse and soft bird's beak biology; and soft bird's beak critical habitats; and legislative protection to explain endangered species concerns to contractors and their employees. The program would include the following: a description of the California clapper rail, salt marsh harvest mouse and soft bird's beak and their habitat needs; a report of the occurrence of these species in the action area; an explanation of the protection afforded these species and soft bird's beak critical habitats under the Act; and a list of measures being taken to reduce impacts to these species and critical habitats during construction and implementation of the proposed action. A fact sheet conveying this information would be prepared for distribution to the above-mentioned people and anyone else who enters Fagan Marsh. Classes would be repeated for all new employees before they access Fagan Marsh.

3. All work associated with construction of the new security fence (and removal of the existing fence) within Fagan Marsh would be avoided during the California clapper rail breeding season from February 1 through August 31 each year. If work activities in Fagan Marsh could not be avoided during the clapper rail breeding season, then preconstruction surveys would be conducted. Preconstruction surveys for California clapper rails in Fagan Marsh would follow the Service's January 21, 2000, draft survey protocol (or any subsequent revision). Prior to the implementation of planned surveys, the proposed survey protocol(s) would be provided to the Service for review and approval. After the surveys are completed and prior to initiation of the construction activities, the results of the surveys would be provided to the Service for review to evaluate the appropriateness of work being proposed by the project proponent. If clapper rails are not detected within 250 feet (62.5 meters) of the work area, then work would proceed. If clapper rails are detected within 250 feet (62.5 meters) of the construction area, then the project proponents would consult with the Service to determine what, if any, additional measures may be required to allow construction work to proceed. Construction of the new security fence in Fagan Marsh would not be initiated until after the Service has approved the planned work based on the review of the survey results.
4. The new security fence would not cross any waterways within Fagan Marsh. All soil cuttings from the drilling of fence posts would be collected and disposed in an upland area. After the posts are installed and the holes filled with concrete, the top six inches (15.2 centimeters) of the holes would be backfilled with native soil. The disturbed area around each post would be re-seeded with pickleweed to prevent establishment of non-native, invasive plant species. A qualified botanist would conduct a non-native plant assessment of areas subject to construction activities and recommend specific measures to control the spread of non-native plant species. Specific vegetative performance criteria would be developed and defined in a wetland mitigation and monitoring plan. The bottom of the section of chain link security fence through Fagan Marsh would be raised approximately six inches (15.2 centimeters) above the existing ground surface to allow unimpeded ground movement by salt marsh harvest mouse and California clapper rails. The top of the fence posts would be constructed with commercially available dense needle strips to prevent potential avian predators from perching on the fence posts. No crossbars would be installed between fence posts along the top of the chain link fence. No access road or walkway would be constructed along the new fence line.
5. A qualified biologist/botanist permitted by the Service would conduct a preconstruction survey for soft bird's-beak, no more than three (3) days in advance of the proposed fence construction in Fagan Marsh. The biologist would document and mark in the marsh any occurrences of this plant. The biologist would instruct the construction crews to avoid any plants during construction of the new fence. The biologist would be present onsite to

monitor for soft bird's beak during excavation and installation work for the proposed fence in Fagan Marsh. The biological monitor would have the authority to stop work if deemed necessary for any reason to protect the plant or any other federally listed species. The areas excavated to install fence posts would be immediately revegetated with native plants (primarily pickleweed) to prevent the incursion and establishment of non-native, invasive plants. The biologist/botanist would visit the revegetated areas at least monthly for the first three months after revegetation to ensure plant survival. The project proponent would revegetate areas as determined by the biologist/botanist.

6. A qualified biologist permitted by the Service would be present onsite to monitor for salt harvest mice during excavation and installation work for the proposed fence in Fagan Marsh. The biologist monitor would have the authority to stop work if deemed necessary for any reason to protect salt marsh harvest mice or any other federally listed species. If a mouse of any species is observed in the work area, then the biological monitor would stop work immediately until the mouse leaves the work area on its own volition. If the mouse does not leave the work area, work would not be initiated again until after the Service and California Department of Fish and Game (CDFG) have been contacted and a decision reached on how to proceed with further work activities. The biological monitor would direct the project engineer or construction inspector on how to proceed accordingly.
7. The written qualifications of the any on-site biologist/monitor selected to work within Fagan Marsh would be presented to the Service at least thirty (30) calendar days prior to the planned initiation of work activities within this area for review and approval by the Service.
8. A representative(s) would be appointed by the project proponent who will be the contact source for any employee or contractor who might inadvertently kill or injure a California clapper rail or salt marsh harvest mouse or who finds a dead, injured, or entrapped individual. The representative(s) would be identified during the employees' biological resources education program. The representative's name and telephone number would be provided to the Service prior to the initiation of any construction activities in Fagan Marsh.
9. The project proponent would develop a final revegetation and monitoring plan for Fagan Marsh which will specifically define vegetative performance criteria and address control of non-native species, including *Lepidium* and non-native *Spartina* species. The plan would be provided to the Service for review and approval prior to the implementation of any work activities within Fagan Marsh.
10. Construction activities would comply with State National Pollutant Discharge Elimination System permit requirements.

11. Temporary adverse effects, such as construction runoff effects or water quality effects seasonal wetlands and tidal wetlands avoided on-site would be prevented by use of best management practices during construction and by directing surface water runoff from paved surfaces into the Airport drainage system.
12. During construction of the proposed action, the project proponent would ensure that construction equipment and vehicles operated in the action area are checked and maintained daily to prevent leaks of fuels, lubricants or other fluids. The contractor(s) would develop an approved Hazardous Materials Spill Prevention Plan before starting any construction activities.
13. The project proponent would provide the Service with annual reports to describe the progress of implementation of all the commitments in the *Proposed Conservation Measures and Terms and Conditions* sections of this biological opinion. The reports would include: (1) dates that construction occurred; (2) pertinent information concerning the applicant's success in meeting project compensation measures; (3) an explanation of failure to meet such measures, if any, and recommendations for remedial actions and request for approval from the Service, if necessary; (4) known project effects on federally listed species, if any; (5) occurrences of incidental take of federally listed species, if any; and (6) other pertinent information. The first report would be submitted by January 31, the first year after any ground disturbance, and annually on January 31 thereafter until all terms and conditions and/or performance criteria are met.
14. If requested, during or upon completion of construction activities in Fagan Marsh and vernal pool critical habitat areas, the on-site biologist, and/or representative from the FAA and/or project proponent would accompany Service or California Department of Fish and Game personnel on an on-site inspection of the action area to review project effects to these areas.

Effects on Non-Federal Species of Plants and Animals

Sections 3.8, 3.9 and 4.6 of this EA discuss affected environments and effects of the proposed actions on non-federally listed plants and animals. Napa County, through the CEQA process and in consultation with CDFG, addresses potential impacts and mitigation measures.

4.8 Wetlands and Waters of the United States – Environmental Consequences

Effects

Effect 4.8-1: Loss of, and Impacts on, Jurisdictional Waters of the United States

The proposed action would result in the direct removal of about 1.643-acres of waters of the United States on the Airport: 0.721-acres of seasonal wetland swale; 0.60-acres of seasonal wetland, and 0.60-acres of perennial marsh. No vernal pools would directly or indirectly be affected by the proposed construction projects.

Ground disturbance in the vicinity of the seasonal wetland swale, seasonal wetland and perennial marsh would cause varying degrees of erosion, sedimentation and alteration of the hydrologic regimes, thereby affecting water quality and wetland habitat. The total area within the 250-foot buffer zone of the waters of the United States is about 58-acres. Of this total watershed area, about 37.8-acres of waters of the United States would be indirectly affected by proposed construction projects. Table 4.8-1 shows the estimated direct and indirect effects of the proposed projects on waters of the United States:

Table 4.8-1: Estimated Effected Acreage Waters of the U.S.

Project Component	Direct effect on waters of the U.S.	Indirect effect on waters of the U.S. (250-foot buffer)
Taxiway 'J' extension	0.121	0.496
Runway 6-24 RSA	0.600	7.346
Security fence	0.287	28.696
Runway 36R extension	0.635	1.469
Total Effected	1.643	37.823

The exact total acreage affected by the proposed action is estimated pending verification of a wetland delineation by the Corps.. However, the determination of the effects and associated mitigation measures are considered to be the similar to those anticipated after wetland verification by the U.S. Army Corps of Engineers.

Construction of the security fence through sensitive habitats in, or adjacent to the perennial marsh, along the western Airport property boundary seemingly has an inordinately large indirect effect. However, allowing for a length of 2,500 feet and a 250-foot buffer on each side of the fence, the indirect effect is determined to be 1,250,000 square feet, 28.696-acres. It is more likely that the indirect effects will be confined to the east side of the fence line because of a levee that parallels the Airport property west of the fence line and creates a hydrologic barrier. The actual

indirect effect is more likely within 50 feet of the east side of the fence, creating an indirect effect of about 2.87-acres. The final indirect effect determination after the Corps has completed its wetland verification. The actual direct effect is also difficult to determine. The estimated direct effects are based on continuous disturbance 5-feet wide along the entire length (2,500 ft X 5 ft = 12,500 ft. sq.; 0.287-acres).

Wetland and marsh habitats provide important ecological functions and values, provide habitat for federally listed species and are considered sensitive biological communities. For this reason, the federal government supports a policy of minimizing “the destruction, loss, or degradation of wetlands” (Executive Order 119900, May 24, 1977), and Sections 401 and 404 of the Clean Water Act regulate waters of the United States. Discharge of fill into waters of the United States is regulated by the Corps and requires a Section 404 permit, and a Section 401 certification from the RWQCB. In 1987, the CDFG adopted a no-net loss policy for wetlands, as has the State of California (the Governor’s California Wetlands Conservation Policy, State of California, August 23, 1983). Activities that modify the bed and bank or substantially divert flows of streams, sloughs and intermittent drainages are also subject to regulations by the CDFG under Section 1600 of the Fish and Game Code. Direct and indirect effects on approximately 37.823-acres of seasonal wetland swales, season wetlands and perennial marsh are considered substantial.

Implementation of mitigation measure 4.8-1 would provide for no-net loss of wetlands and marsh, such that the net effect after mitigation is completed would be considered minor.

Mitigation Measures

Mitigation Measure 4.8-1: Filling waters of the United State

This mitigation measure is described in 4.4-3.

Mitigation Measure 4.8-2: Preservation, Conservation, Mitigation and Management of Sensitive Resources

Napa County shall establish management plans and, if necessary, conservation easements for sensitive biological resources in unaffected areas. In identifying the areas for management and conservation, an approximate acreage is present below. The final acreage may be different, as actual limits of the area to be protected shall be determined in consultation with the USFWS and CDFG. These preservation and management measures would address the following requirements:

- Preserve, on the Airport, a total of 5.28 acres of the Fagan Marsh (ecological reserve) west of Runway 18R-36L. Provide a management

plan, prepared by a qualified biologist, in cooperation with CDFG, to ensure compatible goals and objectives with those of the Fagan Marsh Ecological Reserve.

- Provide continuing management for the Sheehy Creek realignment and enhancement project under Corps agreement 24755N.

Mitigation Measure 4.8-3: Impacts to Vernal Pool Fairy Shrimp Habitat

Mitigation measures to Vernal pool fairy shrimp habitat within the designated critical habitat area are described in Mitigation Measure 4.6-1 of this EA.

Mitigation Measure 4.8-4: Impacts to Fagan Marsh

Mitigation measures to Fagan Marsh habitat are described in Mitigation Measure 4.6-2 of this EA.

4.9 Construction Impacts – Environmental Consequences

Introduction

The projects proposed in this action involve physical disturbance to the environment. Therefore, the following mitigation measures are recommended to address anticipated construction impacts. Mitigation measures for construction effects related to noise and air quality are discussed in Chapters 4.1 and 4.3 respectively.

Mitigation Measure 4.9-1: General Mitigation Measures for Construction Activities

1. Napa County shall continue to implement the adopted Storm Water Pollution Prevention Plan (SWPPP) for all applicable aspects of project construction.
2. Napa County shall develop a spill prevention control plan under guidance from the FAA. The plan shall identify potential fuel spill sources and other hazardous materials; specify procedures for documenting and controlling accidental fuel spills; and designate responsibilities, training requirements, and procedural priorities to Airport personnel in preparation for possible accidental spills.
3. Construction activities will be limited to the non-rainy season, typically May through October.
4. Construction plans and specifications for all elements of the projects shall include provisions for erosion control in the event of nonseasonal or early seasonal rainfall during construction, and for disturbed areas that remain unvegetated during the rainy season.
5. Rainy season erosion control measures shall be in place before October 1 of each year.
6. Construction activities shall be limited to the hours of 7am to 7pm.
7. All construction traffic or other activities on the Airport shall be coordinated with FAA air traffic controllers, and all construction vehicles and contractor employees shall be accompanied by trained Airport personnel capable of communicating with the FAA tower.
8. Construction activities shall comply with state National Pollutant Discharge Elimination System permit requirements.
9. Napa County shall prepare and implement a detailed erosion control plan. The plan shall, at minimum, require revegetation of disturbed areas, protection of stream banks and slopes, and erosion control.
10. Temporary adverse effects, such as construction runoff effects or water quality effects, shall be avoided by use of best management practices during construction and by directing surface water runoff from paved surfaces into the Airport drainage system.

Specific construction mitigation measures are required for the following individual projects.

Mitigation Measure 4.9-2: Security Fence through Fagan Marsh

1. The security fence through Fagan Marsh on Airport property is about 650 linear feet. The fence is entirely within pickleweed habitat of the endangered salt marsh harvest mouse. Mitigation measures shall conform to those in Mitigation Measure 4.7-2.

Mitigation Measure 4.9-3: Fagan Creek Bridge

Construction of a wider bridge over a channelized portion of Fagan Creek requires the following specific construction mitigation measure:

1. The existing bridge serves as the nesting area for dozens of swallows. Prior to construction, a qualified biologist shall determine when swallow nests can be safely destroyed so as not to disrupt the breeding season.

5.0 Alternatives Analysis

Alternative 1 (No-Action Alternative)

The No-Action Alternative involves maintaining the current Airport configuration under its existing Master Plan and ALP and no new construction or improvement projects. This alternative would not result in the extension of Taxiway 'J' or Runway 18-L-36R, the construction of a new bridge or security fencing, any property acquisition or RSA grading, or the installation of a glide slope indicator. However, this alternative does not satisfy the purpose and need for the action.

Alternative 2 (Proposed Action)

Airport Layout Plan (ALP)

The proposed action would involve unconditional approval of a revised ALP. The ALP encompasses the proposed extension of Taxiway 'J', perimeter security fencing, acquisition of 25.4 acres south of the Airport, widening the Fagan Creek bridge on Airport Road, Runway 6 runway safety grading (approximately 100,000 square feet), extending Runway 36R to the proposed extension of Taxiway 'J' (approximately 2,500 feet), and installation of glide slope indicator on the approach to Runway 36L (Figures 2-1 and 2-2).

Extend Taxiway 'J'

The 2004 Airport Master Plan Update includes a provision to extend Taxiway 'J', the southern parallel taxiway to Runway 6-24, west to the southern end of Runway 36L. It would also connect to the proposed extension of Runway 36R. The completed taxiway extension would maintain its current width of 50 feet and would extend from the existing end of the taxiway an additional 2,500 feet to the west. One taxiway connection is also planned: a southern extension of Taxiway 'C'.

The Taxiway 'J' extension provides a completed southern parallel taxiway (Taxiway 'H' provides full length northern parallel taxiway) for access to the southern portion of the Airport. There is a seasonal swale (refer to Section 3.11) between the runway and Taxiway 'J'. The taxiway extension crosses the swale near its western connection with Runway 36R. The swale, which carries surface water runoff from the southern portion of the Airport into an un-named creek, would cross under the taxiway in a culvert. The culvert under the taxiway would replace about 300 linear feet of the swale.

The southern extension of Taxiway 'C', to its connection with Taxiway 'J', also crosses the seasonal swale. The swale would cross under Taxiway 'C' in a culvert for a distance of approximately 75 linear feet.

Perimeter Fencing

Due to increased security requirements at general aviation airports, the TSA recommends a chain link fence around the Airport, including along the western portions of the Airport, areas that have not historically been fenced. The fence will limit Airport access by unauthorized personnel and will alert Airport management to their presence. The seven-foot fence impedes large mammals, primarily deer, from entering active portions of the airfield. Deer on active runways and taxiways pose a safety risk to humans and aircraft.

The proposed fence, along the Airport's western boundary, crosses through, or near, potentially environmentally sensitive marsh habitat. This fence line is adjacent to public lands (Fagan Marsh Ecological Reserve).

Property Acquisition: Borges Atkins Property

This 25.4-acre property south of Taxiway 'J' and between the FAA tower and Runway 36R provides the Airport with a portion of the RPZ for Runways 36L and 36R, and a reasonable guarantee that no incompatible land uses will be allowed on the property.

Widen Airport Road Bridge Over Fagan Creek

The only vehicular entrance to the Airport is via Airport Road, which crosses a channelized section of Fagan Creek on a two-lane (24-foot wide) bridge. The bridge is too narrow to effectively serve as the main entrance to the Airport and does not match the existing width of Airport Road. The bridge will be replaced with one that functionally and esthetically serves as an entry to the Airport. The wider bridge will accommodate vehicular and bicycle traffic and will match the existing width of Airport Road and will be designed and constructed to CalTrans and Napa County specifications.

Runway 6: Runway Safety Area Grading

Runway 6-24 meets the FAA Runway Safety Area (RSA) requirements along its entire length and 1,000 feet beyond the end of Runway 24. However, the RSA does not extend much beyond the end of Runway 6. The southwest end of Runway 6 is located approximately 300 feet from the Airport's western property boundary. Between the end of the runway and the property boundary, the land slopes into a perennial marsh and an eight-foot high levee that marks the eastern edge of a former salt evaporation pond. The salt pond is now part of the Napa Sonoma Marsh Restoration project. The proposed action addressed in this EA is to fill and grade the sloping land immediately southwest of the Runway 6 threshold, an area of approximately 2.3 acres. This action does not include any direct effects beyond the Airport property boundaries.

Extend Runway 18L-36R

Runway 18L-36R will be extended to the south to an intersection with Runway 6-24 and beyond to the extension of Taxiway 'J'. The runway extension will increase the existing runway length from 2,500 feet to 4,440 feet. With this additional length, the runway will support touch-and-go operations by most single engine aircraft. This improvement has two benefits:

1. Reduces congestion and delays on Runway 36L-18R, the Airport's primary runway.
2. Because the traffic pattern for Runway 36R-18L is east of the Airport, the frequency of overflights of the residential area located west of the Airport by training flights would be reduced.

The proposed runway extension will also expand the range of aircraft that can be accommodated in the runway's secondary role of providing additional capacity during peak operational periods.

Install a Glide Slope Indicator

Runway 18R-36L is Napa Airport's main runway. The glide slope indicator and distance measuring equipment (DME), when used in conjunction with the existing localizer, comprise an instrument landing system (ILS) that enables aircraft to fly precision approaches to Runway 36L. The glide slope indicator provides pilots with information regarding the proper descent path for the aircraft, typically a 3° descent. The DME provides pilots with a known fix to determine their distance from the Airport.

Napa Airport needs to install an ILS to provide safe aircraft approaches to Runway 36L. This ILS approach allows aircraft to land in poor weather conditions. Adding the ILS on Runway 36L will increase the amount of time the airport is open during poor weather conditions, and will provide a precision instrument approach when either Runway 6-24 or 18L-36R is closed due to construction or because of weather conditions.

Alternative 3 (Modified Action Alternative): Eliminate Taxiway 'J' Extension

This Modified Action Alternative would result in similar effects to the proposed action (Alternative 2) except direct effects to 0.138-acres and 0.321-acres of indirect effects to a seasonal wetland swale would be eliminated. The alignment of Taxiway 'J' cannot be altered to avoid impacts to wetlands features. The taxiway must be straight to maintain the required separation of 400 feet from Runway 6-24. The proposed extension must extend from the end of the existing taxiway and be parallel to Runway 6-24. The western end of the taxiway extension would connect to Runway 36L, the Airport's main runway. This connection provides a taxiway ingress and egress to the southern portion of the

Airport from Runway 18R-36L where none exists now to improve aircraft movement on the airfield.

Alternative 4 (Modified Action Alternative) Do Not Construct Perimeter Security Fencing

This Modified Action Alternative would result in similar effects to the proposed action (Alternative 2) except direct effects to about 0.26-acres of marsh would be eliminated. Napa County has determined that any fence constructed to provide overall Airport security must follow the property line. Diverting the fence around the portion of the marsh on the Airport would provide public access onto Airport property and to within 200 feet of the main runway. Moving the fence close to Runway 18R-36L would encroach into airspace and could allow individuals to within less than 200 feet of an active runway.

The perimeter fence also prevents uncontrolled public access. As areas north, south and west of the Airport change land use, the opportunity for trespass increases as more people gain access to property around the Airport. A perimeter security fence constructed on the property line clearly defines the Airport boundaries and keeps people the farthest distance possible from airfield operations. The fence will prevent wildlife, particularly deer, from entering active portions of the Airport. Generally, the fence will not disrupt birds or rodents that cross Airport boundaries. The seven-foot fence impedes large mammals, primarily deer, from entering active portions of the airfield. Deer on active runways and taxiways pose a safety risk to humans and aircraft.

Alternative 5 (Modified Action Alternative) Do Not Acquire Property South of Runway 36R

This Modified Action Alternative would result in similar effects to the proposed action (Alternative 2) except that Napa County would not have direct control over future land uses. Although Napa County exercises land use controls through zoning, acquisition of property provides a direct land use control. Acquisition of the Borges Atkins property is the best way to guarantee an RZP. The property acquisition also provides the Airport with land that may be suitable for creek restoration and other mitigation uses which may arise for future projects.

Alternative 6 (Modified Action Alternative) Do Not Widen Bridge Over Fagan Creek

This Modified Action Alternative would result in similar effects to the proposed action (Alternative 2) except that the bridge would not meet circulation element designs set forth in the approved Napa County Airport Industrial Area Specific Plan. The Airport Road bridge over Fagan Creek is the only surface street access onto the Airport. The only option for this alternative is to leave the bridge at its current width or provide a new bridge that meets Napa County and CalTrans standards.

Alternative 7 (Modified Action Alternative) Do Not Grade Runway Safety Area, Runway 6

This Modified Action Alternative would result in similar effects to the proposed action (Alternative 2) except that the Runway 6 RSA would not begin to meet FAA design standards and direct effects to 0.60–acres and indirect effect to 7.346– acres of marsh would be eliminated. The FAA design standard for the RSA on Runway 6 requires an area 500 feet wide and 1,000 feet in length. If this RSA were constructed, it would extend off of Airport property and into the Napa-Sonoma Marsh restoration project, currently salt evaporation Pond 10. The proposed RSA grading provides limited, but better than nothing, safety for aircraft operation on Runway 6-24.

Alternative 8 (Modified Action Alternative) Do Not Extend Runway 36R

This Modified Action Alternative would result in similar effects to the proposed action (Alternative 2) except the direct effect to 0.60–acres and indirect effect to 1.469–acres of seasonal wetland swale would be eliminated. Retaining the current runway length would not alter flight path tracks, or noise contours that may effect land uses in the Airport vicinity. Extending Runway 36R provides runway for flight training, independent of the main flow of air traffic. This moves the flight paths eastward, away from residential development west of the Napa River. The runway extension also provides additional airfield capacity to minimize delays during periods of peak use.

Alternative 9 (Modified Action Alternative) Do Not Install Glide Slope Indicator

This Modified Action Alternative would result in similar effects to the proposed action (Alternative 2) except that the glide slope indicator would not be installed for the approach to Runway 36L and, therefore could not be used in conjunction with the existing localizer as a instrument landing system.

Summary

The purpose of this EA is to assess the potential environmental effects of seven projects proposed in the Napa County Airport Master Plan, 2007 and evaluate the overall environmental conditions on the Napa County Airport. Given the nature of the seven projects, any one of them could be eliminated to create an alternative to the proposed action. Therefore seven alternatives, each representing the elimination of one project are evaluated in this EA. However, none of the alternatives is significantly environmentally superior to the proposed action (Alternative 2):

- Alternative 3 –Extension of Taxiway ‘J’: This alternative impacts about 0.138-acres of seasonal wetland swale. This swale is a portion of a man-made drainage feature that provides internal drainage for seasonal runoff

south of Runway 6-24. The swale would be placed in culverts only where necessary for a minimal distance under the taxiway. The hydrology of the swale is unchanged.

- Alternative 4 –Construct the Security Fence: The potentially significant impacts resulting from fence construction though sensitive habitats in Fagan Marsh are primarily related to actual construction periods. Construction equipment and construction activities would temporarily affect about 0.4-acres of sensitive habitat in Fagan Marsh. Mitigation measures proposed in this EA would reduce any environmental effects to below a level of significance.
- Alternative 5 – Acquisition of the 25.4-acre Borges Atkins Property: This property is not affected by Airport development. However, acquisition of the 25.4 acres, including about 1,300 linear feet of an un-named creek provides Napa County with potential area for creek restoration or on-site wetland mitigation areas.
- Alternative 6- Bridge over Fagan Creek: Construction of a wider bridge over a channelized portion of Fagan Creek offers no long-term environmental effects. Construction that could temporarily affect water quality is mitigated to a minor effect.
- Alternative 7 – Grading Runway 6 RSA: The RSA for Runway 6 is substandard, and the proposed project to grade about 2.25-acres provides partial compliance runway safety. The impact to about 0.60-acres of perennial marsh is unavoidable. Mitigation measures reduce this impact to a less than significant.
- Alternative 8 –Extension of Runway 36R: This alternative impacts about 0.60-acres of seasonal wetland swale. This swale is a portion of a man-made drainage feature that provides internal drainage for seasonal runoff between Runways 18R-36L and 18L-36R. If this swale were impacted by the proposed project, a new portion of the drainage swale would need to be constructed. This new portion of the swale may be proposed as mitigation, and ultimately there is no net wetland loss.
- Alternative 9 – Install a Glide Slope Indicator: This alternative impacts about 500 square feet in the upland area of the vernal pool fairy shrimp critical habitat. This installation area is west of Runway 36L and therefore not within the vicinity of the only vernal pool known to provide vernal pool fairy shrimp habitat. The glide slope indicator and resulting ILS are an important element to providing safe aircraft operations.

Based on a comparison of the alternatives, after mitigation, none provides an environmentally superior alternative to the proposed action.

6.0 Environmental Consequences – Other Considerations

Cumulative Effects

A cumulative effect is an environmental effect of the project combined with the similar effects of other past, present, or future projects. A cumulative effect is not considered adverse if it is less than “cumulatively considerable.” That is, even individually minor effects can become collectively significant. This may occur when the action is required to implement or fund its fair share of the mitigation measures designed to alleviate the cumulative effect or when environmental conditions would essentially be the same, whether or not the proposed action is implemented. In any case, the analysis should be guided by standards of practicality and reasonableness, and should focus on the actual contributions of the proposed action to cumulative effects.

A cumulative effects analysis may be based on:

- List of past, present and probable projects producing related or cumulative impacts, or
- A summary of projections contained in an adopted general plan, related planning document, or adopted and certified environmental document designed to evaluate regional or area-wide conditions.

The following analysis of cumulative effects is based on past, present and probable projects, including those identified in the 1991 Master Plan but evaluated in this EA and projects on land within the vicinity of the Airport that are likely to occur, but which have not been certified or approved by an approving agency.

2004 Napa County Airport Master Plan Projects

In addition to the seven specific project evaluated in this EA, the 2007 Airport Master Plan lists the following near-term projects (within 5 years):

1. Runway 18R-36L, joint repair and 3-inch overlay/seal coat
2. Runway 6-24 joint repair and 4-inch overlay
3. Taxiway ‘C’, pulverize and rebuild
4. Terminal design
5. Grading between old and new hangers
6. Taxiway ‘A’ joint repair and 4-inch overlay
7. Taxiway ‘E’, pulverize and rebuild
8. Runway 18L-36R seal coat
9. Taxiway ‘B’, pulverize and rebuild
10. Redesign parking area for FAA tower
11. Taxiways ‘D’, ‘F’ and ‘J’ seal coat
12. Wash rack (currently being evaluated under a Categorical Exclusion)

13. Construct Runway 6 RSA to meet FAA design requirements

Of the near-term projects proposed for Airport improvements listed above all are related to ongoing maintenance or have been evaluated under a NEPA Categorical Exclusion, except construction of the Runway 6 RSA to meet FAA design standards (1,000 feet X 500 feet). The maintenance projects will not contribute to the cumulative effects of the proposed action. The potential cumulative effects of the RSA are discussed below.

Runway 6 RSA

In order to meet FAA design standards for an RSA, the existing RSA for Runway 6 must be extended off of Airport property and into the former salt evaporation ponds, now proposed as part of the Napa-Sonoma Marsh Restoration project. These ponds currently are part of CDFG wetland restoration project, but have not been restored to viable habitat. The extended RSA will fill part of the un-named creek and perennial marsh, requiring wetland mitigation. The exact acreage affected by this action has not been determined, but is probably about 6-acres. However, given the larger area under consideration for wetland restoration, the FAA should be capable of mitigating effects from the extended off-Airport RSA within the salt pond restoration area. The Airport and the FAA will also evaluate the wildlife attractants created by the restored wetlands. Currently, the salt ponds provide only limited wildlife habitat.

Other Projects in the Vicinity of the Airport

South of the Airport, Napa County has approved the 218-acre Beringer Wine Estates, Devlin Road Facility, and integrated winery facility. Mitigation measures approved for this facility have reduced impacts to less than significant, and therefore there are no reasonably foreseeable cumulative effects. The project proponent, Beringer Wineries, withdrew plans to build this project after the company was sold in 2005. It is unlikely that this project as approved will be constructed. However, Napa County still recognizes this as a proposed project.

A resort developer has proposed a destination golf resort north of the Runway 18R RPZ, approximately 3,500 feet off the north end of the main runway, immediately north of Sheehy Creek. The resort, as originally proposed, included a 10-acre holding pond, and existing and created wetlands. FAA Advisory Circular 150/5200-33A (2004) advises a minimum distance of 5,000 feet from the nearest air operations area to wildlife attractants such as ponds and wetlands.

The FAA and Napa County worked with the resort developer to remove wildlife attractants from within 5,000 feet of any active runway. In January 2006, Napa County certified a Supplemental Environmental Impact Report (SEIR) under the California Environmental Quality Act that reflected mitigation measures to conform to FAA AC 150/5200-33A.

Growth Inducing Effects

Growth inducement is the indirect effect of a proposed action that results in fostering economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environments. Actions that could induce growth include those that would remove obstacles to population growth or that may encourage and facilitate other activities that could adversely affect the environment. Actions proposed in the Airport Master Plan do not substantially foster economic growth or induce population growth.

Known Areas of Controversy and Issues to be Resolved

The following areas of controversy and concern were raised during development of the proposed action:

- Noise and/or overflight impacts on proposed residential development (Oat Hill) in the City of American Canyon.

8.0 List of Preparers

The Napa County Airport Master Plan Draft Environmental Assessment was prepared on behalf of the Federal Aviation Administration by Jim Wallace Environmental Consulting Services, Port Townsend, Washington.

JIM WALLACE ENVIRONMENTAL CONSULTING SERVICES:

Jim Wallace, Principal

BA, History, Humboldt State University

Mr. Wallace has more than thirty years of experience as an environmental and natural resource consultant. He serves as project manager for NEPA and CEQA compliance for complex publicly financed projects and as project manager for environmental planning at mines and for mine land reclamation strategies. Mr. Wallace specializes in environmental compliance and developing workable environmental strategies for complex projects throughout northern California. Mr. Wallace has served as project manager for various NEPA compliance documents on behalf of the FAA including general aviation airports in Weaverville, Chico, Chester, Placerville, Madera, Georgetown, Cedarville, Mammoth Lakes, Tule Lake, Watsonville, Livermore and Napa.

Carter Schleicher, Project Manager

BS, Wildlife Management, Humboldt State University

Mr. Schleicher has 30 years of experience in natural resource analysis. Mr. Schleicher is a Certified Wildlife Biologist and has completed numerous wildlife and wildlife habitat impact analyses. He is trained and versed in wetland delineations, permitting, and mitigation. He is familiar with the policies and procedures of the U.S. Army Corps of Engineers wetland regulations. Mr. Schleicher has supervised and conducted threatened and endangered species surveys and incorporated the survey findings into biological assessments. The biological assessments identified conservation measures that were incorporated into biological opinions developed by the U.S. Fish and Wildlife Service. Mr. Schleicher has managed and participated in numerous NEPA documents. He was the Nevada Department of Transportation Public Hearings Officer and Environmental Studies Manager. In that capacity he conducted and participated in numerous public hearings including those that involved controversy. Mr. Schleicher was a lecturer at San Francisco State University in natural resource management.

List of Preparers

Jim Wallace Environmental Consulting Services (continued)

Bill Jordan, Senior Biologist/Botanist

BA, Biology, San Francisco State University

MS, Botany, San Francisco State University

PhD, Botany, University of Wisconsin, Madison

Dr. Jordan is the former Chairman of the Department of Biology and Dean of Science at the University of San Francisco and is Professor Emeritus of Biology and Environmental Science. Dr. Jordan has over thirty years of experience in environmental and biological sciences and has conducted numerous studies throughout Northern California including:

Rabbit Valley Monitoring Program, Lake County

Effects of Treating Clear Lake Waters With *Microflora Bioremediation Products*

Heavy Metal Content of Lichens in Mendocino, Lake and Sonoma Counties

Biological Assessment of Pelican Bay State Prison Sites, Humboldt County

Fish Survey following a Geothermal Spill on Squaw Creek

Bear Canyon and Westford Flat Monitoring Program, Sonoma County

Element Content of Small Mammals in the Vicinity of the Geysers

Pescadero Creek Monitoring Program, San Mateo County

Lobos Creek and Vicinity - Biological Assessment, San Francisco County

Parasite Survey of Black-tailed Deer in Geothermal Steam Fields

Jim Wallace Environmental Consulting Services was assisted during preparation of the EA by the following qualified environmental consulting firms, all with extensive experience in environmental compliance. Various individuals from each firm participated in preparing sections of the EA.

EMAssist, Inc. 90 Blue Ravine Road Folsom, CA 95630

www.emassist.com

EMAssist is a disadvantaged small business enterprise that provided air quality data and interpretation for the preparation of the EA.

ECORP Consulting Inc.

2260 Douglas Blvd., Suite 160

Roseville, CA 95661

www.ecorpconsulting.com

ECORP Consulting provided biological, wetland and cultural resource data reviews, field mapping and report preparation for the EA.

Mead & Hunt, Inc.

707 Aviation Boulevard Santa Rosa, CA 95403

www.meadhunt.com

Mead & Hunt provided noise analysis for the preparation of the EA.

The Federal Aviation Administration reviewers:

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. Principal FAA Planner/Environmental Protection Specialist responsible for detailed FAA evaluation of the Environmental Assessments and Environmental Impact Statements as well as coordination of comments from various federal and state agencies in the FAA’s Western-Pacific Region.

Leslie A. Grey, Regional Environmental Protection Specialist, FAA, Airports Division, Alaskan Region, B.S. Geography, M.S. Geography. Conducted FAA's review of the Napa County Airport Draft Environmental Assessment document. Ms. Grey has over 17 years of environmental experience and is the Project Manager for three on-going Environmental Impact Statements. She also reviews Environmental Assessment documents for the FAA in the Alaskan Region.

9.0 Public Participation

The FAA has a community involvement policy (FAA-EE-90-03, August 1990). That policy recognizes community involvement as an essential part of FAA programs and decisions. ARP, like each FAA office, must incorporate open, effective community involvement to achieve the following goals and tasks.

- a.** Provide active, early, and continuous public involvement and reasonable public access to information that accurately describes a proposed project and its environmental effects.
- b.** Ask for and consider public input on plans, proposals, alternatives, impacts, and mitigation.
- c.** Use public involvement techniques designed to meet the needs of different interest groups and individuals.
- d.** Promote an active public role to lessen potentially adverse community reaction to agency actions needed for safe, efficient aviation.

A notice of availability of this Draft Environmental Assessment was published in the legal section of the _____ on _____. The public comment period was offered for 30-days after the notices were published.