DRAFT
ENVIRONMENTAL IMPACT REPORT
for the
WATSONVILLE MUNICIPAL AIRPORT
MASTER PLAN

SCH #2002062089

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Prepared For

CITY OF WATSONVILLE

Prepared By

DENISE DUFFY & ASSOCIATES
947 Cass Street, Suite 5
Monterey, CA 93940
Phone: (831) 373-4341

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1.0 INTRODUCTION

PURPOSE

This Environmental Impact Report (EIR) addresses the potential environmental effects of the proposed Watsonville Airport Master Plan. A full description of the project is presented in Section **3.0 PROJECT DESCRIPTION** of this document.

This EIR has been prepared for the City of Watsonville, which is the lead agency for the project. The EIR focuses on evaluation of the following potentially significant impacts: geotechnical, drainage and water quality, biological resources, traffic, noise, air quality, land use, and water supply.

This EIR has been prepared in accordance with the California Environmental Quality Act (CEQA) as amended in October 1998, and State CEQA Guidelines. As stated in the CEQA Guidelines, an EIR is an "informational document" with the intended purpose to: "inform public agency decision-makers and the public generally of the significant environmental effects of a project, identify possible ways to minimize the significant effects, and describe reasonable alternatives to the project." Although the EIR does not control the ultimate decision on the project, the City must consider the information in the EIR and respond to each significant effect identified in the EIR. As defined in the CEQA Guidelines, a "significant effect on the environment" is:

> ...a substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project, including land, air, water, minerals, flora, fauna, ambient noise, and objects of historic or aesthetic significance. An economic or social change by itself shall not be considered a significant effect on the environment. A social or economic change related to a physical change may be considered in determining whether a physical change is significant.

EIR PROCESS

A Notice of Preparation (NOP) was circulated in 1995, based on a Draft Master Plan that was prepared and initiated in 1993. During a proposal to remove clay at the airport in 1993 for use as landfill lining, the State listed endangered plant Santa Cruz tarplant was found on airport property. Based on concerns about this endangered plant, the clay removal project was abandoned. Work on the Master Plan and EIR were also delayed in order to consult with the California Department of Fish and Game (CDFG) regarding mitigation and recovery options. A Final Tarplant Mitigation Plan was completed in October 2001, as were other Draft Master Plan revisions. A second NOP was prepared and circulated in June 2002 for the current EIR. The updated NOP identified the issues and potential impacts anticipated to result from the current Draft Master Plan.

This Draft EIR will be published and circulated for review and comment by the public and other interested parties, agencies and organizations for a 45-day review period. Following the public review, a Final EIR (FEIR) will be prepared that includes responses to comments received during the public review period. The Final EIR will then be presented to the City Council. The City Council must ultimately certify that it has reviewed and considered the information in the EIR and that the EIR has been completed in conformity with the requirements of CEQA.

Pursuant to the policy stated in Sections 21002 and 21002.1 of CEQA, no public agency shall approve or carry out a project for which an EIR has been completed which identifies one or more significant effects unless such public agency makes one or more of the following findings:

A. Changes or alterations have been required in, or incorporated into, such project which mitigate or avoid the significant environmental effects thereof as identified in the completed environmental impact report.

B. Such changes or alterations are within the responsibility and jurisdiction of another public agency and such changes have been adopted by such other agency, or can and should be adopted by such other agency.

C. Specific economic, social or other considerations make infeasible the mitigation measures or project alternatives identified in the environmental impact report.

FEDERAL NEPA REVIEW

The first 5-year phase of capital improvements planned at the Watsonville Municipal Airport are subject to approval by the Federal Aviation Administration (FAA). Pursuant to FAA environmental guidelines, Phase One of the proposed Airport Master Plan is being evaluated with an Environmental Assessment (EA). Because the component of the project subject to federal environmental review (the first 5 years) is less than the total subject to CEQA environment environmental review (20-year Master Plan), the EA is being prepared as a separate document.

REPORT ORGANIZATION

Each topical section in this EIR presents information in three parts. The Environmental Setting sections provide a general overview of the conditions on and adjacent to the project site. Local, State and federal regulations are also identified and discussed, when relevant.

A Relevant Project Characteristics section provides a description of the elements of the project that are relevant to the impact analysis for a particular topic. Relevant project information may relate to the size, characteristics and/or location of facilities and other plan elements, such as landscaping and design guidelines. Any project elements that may cause impacts, as well as those that may serve to minimize impacts, will be identified.

The Environmental Impacts and Mitigation Measures section provides a brief description of standards used to evaluate whether an impact is considered significant based on standards identified in the California Environmental Quality Act (CEQA), State CEQA Guidelines, agency policy or regulations and/or professional judgment are also used to further define what actions may cause significant effects. Significant impacts are identified and analyzed. Mitigation measures that would reduce significant impacts are identified. The significance of the impact after mitigation is also identified. For impacts found to be less-than-significant, mitigation measures are not required, but where relevant, the EIR recommends project modifications or appropriate conditions of approval.

2.0 SUMMARY OF ENVIRONMENTAL IMPACTS

INTRODUCTION

This summary provides a brief description of the proposed project, known areas of concern, project alternatives, and all potentially significant impacts identified during the course of this environmental analysis. This summary is intended as an overview and should be used in conjunction with a thorough reading of the EIR. The text of this report, including figures, tables and appendices, serves as the basis for this summary.

Pursuant to the policy stated in §21002 and §21002.1 of CEQA, no public agency shall approve or carry out a project for which an EIR has been completed which identifies one or more significant effects unless such public agency makes one or more of the following findings:

A. Changes or alterations have been required in, or incorporated into, such project which mitigate or avoid the significant environmental effects thereof as identified in the completed environmental impact report.

B. Such changes or alterations are within the responsibility and jurisdiction of another public agency and such changes have been adopted by such other agency, or can and should be adopted by such other agency.

C. Specific economic, social or other considerations make infeasible the mitigation measures or project alternatives identified in the environmental impact report .

SUMMARY OF PROPOSED PROJECT

This Environmental Impact Report (EIR) addresses the potential environmental effects of implementation of the Watsonville Municipal Airport Master Plan. The Master Plan identifies future facility demands and improvement needs, planning goals within several elements, and specific improvement projects within four planning periods.

AREAS OF CONCERN

The City of Watsonville, as the Lead Agency, has identified areas of concern based on the Notice of Preparation (**Appendix A**). Issues of expressed concern include special status species and habitats occurring on the site, traffic, water supply, land use compatibility, and noise.

SUMMARY OF ALTERNATIVES

CEQA Guidelines require that an EIR describe and evaluate alternatives to the project which could eliminate significant adverse project impacts or reduce them to a less-than-significant level. The following alternatives are evaluated in Section **6.0 ALTERNATIVES**.

- No Project
- Modified Site Design
- Reduced Scale

SUMMARY OF IMPACTS AND MITIGATION MEASURES

All impacts identified during the course of this environmental analysis are summarized below. This summary groups impacts of similar ranking together, beginning with significant unavoidable impacts, then potentially significant impacts that can be mitigated, followed by impacts not found to be significant.

Significant Unavoidable Impacts

Water Supply

Although cumulative water demand represents a small percentage of the total demand within the Pajaro Valley Water Management Agency jurisdiction, cumulative effects on water supply and groundwater withdrawal are considered significant and unavoidable under the current basin conditions.

Potentially Significant Impacts and Mitigation Measures

Geology and Soils

Impact 4.1-1: New development may be subjected to ground shaking associated with moderate to large earthquakes centered along nearby faults, and subject to site-specific soil constraints.

Mitigation

4.1-A Require all future proposed structures be designed in accordance with the requirements of the Uniform Building Code, current edition, and designed in accordance with recommendations of a site-specific geotechnical report at the time habitable structures are proposed and designed.

Drainage and Water Quality

Impact 4.2-1: Implementation of the Master Plan and full buildout would result in an increase in impervious surfaces and runoff, especially from future commercial development. Although future development would not alter existing drainage patterns, capacity of storm drains may be adversely effected.

Mitigation

4.2-A Require future commercial/industrial developments to provide an engineered drainage system onsite, in accordance with City Public Works Department requirements, to insure that post-project runoff does not exceed existing storm drain capacities.

4.2-B New development shall incorporate drainage design that is specifically directed toward reducing the amount of runoff from paved surfaces. Runoff volumes can be reduced by site design that limits paved areas, employs permeable paving designs, and/or incorporates drainage design that disperses runoff into areas designed to slow runoff and encourage percolation into soils.

4.2-C Prior to development, a plan for conducting regular maintenance and cleaning of on-site drainage and detention facilities, to ensure ongoing provision of adequate capacity, shall be drafted and approved by the City Public Works Department.

Impact 4.2-2: Proposed development of the Master Plan could result in significant water quality impacts from erosion or surface water quality degradation.

Mitigation

4.2-D The City shall amend the airport's Storm Water Pollution Prevention Plan and submit the plan to the RWQCB for review and approval prior to construction.

4.2-E The City shall update the Hazardous Materials Management Plan as part of the SWPPP so that potential pollutants such as fuels, oil, bitumens, sewage, and other hazardous chemicals and materials will not be discharged into storm drains or drainage channels, nor will they be stored or dumped in any location where they might enter the ground water or drainage systems.

4.2-F Require implementation of standard erosion control best management practices during future development projects, including but not limited to: minimizing area of disturbance, prohibiting grading during the rainy season (approximately October 15 through April 15), controlling graded areas during the rainy season, and revegetating disturbed areas with species that do not conflict with the Tarplant Mitigation Plan recommendations (See also Section **4.3 BIOLOGICAL RESOURCES**).

Biological Resources

Impact 4.3-1: Implementation of the proposed Master Plan would result in a loss of 5.54 acres of sensitive coastal terrace prairie habitat and 12.28 acres of habitat supporting the endangered Santa Cruz tarplant.

Mitigation

4.3-A Implement Tarplant Mitigation Plan, as proposed, upon approval by the California Department of Fish and Game as executed with a Memorandum of Understanding.

Impact 4.3-2: The proposed project would result in the loss of approximately 1.47 acres of jurisdictional wetland habitat, including 1.33 acres of willow riparian wetland and 0.14 acres of seasonal wetland.

Mitigation

4.3-B Incorporate the MVCD's best management practices for mosquito abatement into the Wetlands Mitigation Plan before final approval and implementation.

4.3-C Implement the Wetland Mitigation Plan, as proposed, upon approval by the Army Corps of Engineers, as executed with a Memorandum of Understanding.

Impact 4.3-3: Development of the non-aviation commercial area on the west side of the Airport could indirectly impact the listed California red-legged frog and other special status species if construction activities are not controlled.

Mitigation

4.3-D Require future development in areas near wetlands to be set back a minimum of 50 feet from the adjacent riparian/wetland area (Santa Cruz County Code 16.30.040), and require implementation of erosion control measures during construction to prevent erosion/sedimentation into this area.

4.3-E Prior to construction in area 15d, or construction of the planned new road off of Manfre Road, conduct a pre-construction survey for California red-legged frogs in accordance with USFWS requirements in effect at the time development is proposed. If the species are found, implement construction controls as recommended by the resource agencies designed to prevent injuries to special status species.

4.3-F Require grading activities for future road construction (Manfre Road) and development in area 15d to be conducted during the dry season (April 15 – October 15), when California red-legged frogs are most likely to be found at aquatic sites. Additionally, require all trenches, pits, and the like, to be filled prior to October 15. If construction activities are not completed prior to October 15, require installation of exclusion fences around the remaining work areas to prevent the possible movement and entrapment of frogs in the work areas.

4.3-G Schedule ground clearing and grading for future road construction (Manfre Road) and development in area 15d to occur outside the primary nesting season for yellow warblers (April 15 – July 31), unless a pre-construction survey indicates that nesting is not occurring. If nesting birds are not found, no further action is necessary. If a nesting raptor or special status species bird is found within 300 feet of the development area, construction should occur after the bird has fledged, or consultation should take place with the CDFG to determine whether an appropriate buffer can be established.

4.3-H Prior to construction in area 15d or construction of the planned new road off of Manfre Road, conduct a pre-construction survey for the San Francisco dusky-footed woodrat in accordance CDFG requirements in effect at the time development is proposed. If the species is found, implement a trapping and relocation program as approved by CDFG to prevent injuries to special status species.

Traffic and Circulation

Impact 4.5-3: The automobile parking supply would not increase with the addition to the airport terminal building.

Mitigation

4.5-A Adequate vehicle and bicycle parking should be provided in the terminal area in accordance with City of Watsonville parking requirements. Furthermore, parking for the proposed industrial/commercial developments around the airport should be provided in accordance with City of Watsonville parking requirements.

Air Quality

Impact 4.6-2: Project construction involves grading and use of equipment and vehicles with internal combustion engines resulting in air pollutant emissions that would potentially exceed the Monterey Bay Unified Air Pollution Control District thresholds of significance.

Mitigation

4.6-A Require implementation of the following dust control measures as a part of future construction projects*:*

- use water trucks and sprinklers as often as necessary to control dust;
- clean all vehicles leaving the work site to prevent dirt and mud from reaching adjacent streets;
- keep street free of dust and dirt;
- cover all material transported in trucks to prevent excessive dust release; and
- minimize vehicle-related dust emissions by reducing the speed of vehicles traveling on exposed surfaces.

4.6-B Restrict grading and earthmoving on the site to less than 2.2 acres of grading or excavation per day (assuming daily watering) unless monitoring shows that PM_{10} levels do not exceed 82 lbs per day.

4.6-C Maintain all construction equipment and vehicle internal combustion engines according to manufacturer specifications.

Noise

Impact 4.7-1: The proposed extension of Runway 2-20 would expose residences to unacceptable noise levels.

Mitigation

4.7-A An acoustical analysis of the existing residential structures that are not now, but would be located within the 2010 CNEL 60 dB contour shall be prepared, subject to the review and approval of the City. With the support of this analysis, the City shall:

- Verify that the structures currently have an average interior noise level of CNEL 45 dB; or
- Ensure that appropriate measures are taken by the City/Airport to modify the structure to reduce the interior noise level to CNEL 45 dB (e,g., with insulation, weatherstripping, and/or double-pane windows); or
- Obtain an aviation easement(s) for the subject properties.

4.7-B The City shall require that any new noise-sensitive development (i.e., residential, schools, churches, etc.) proposed to be constructed within the CNEL 60 dB airport noise contour for the Watsonville Airport, be constructed so as to ensure attainment of an average interior noise level of CNEL 45 dB. The City shall also restrict new development inside the CNEL 60 dB contour to those uses not considered noise-sensitive.

4.7-C The Watsonville Airport plans shall include FAA-approved noise abatement arrival and departure procedures, which shall be made available to all pilots.

Impact 4.7-2: The development of T-hangars in the northeastern portion of the airport may result in an increase in noise impacts to the adjacent residential units.

Mitigation

Implementation of the following mitigation measure will reduce the impact to a *less-than-significant* level.

4.7-D A landscaped earth berm or sound wall shall be incorporated into the final design of the new hangar development, in coordination with a qualified noise engineer, between the hangars and the residential units in the northeast corner of the project site.

Impact 4.7-3: Existing residences in the vicinity of project construction activities, particularly the residences to the northeast of the project site, could be affected by temporary and intermittent construction-related noise.

Mitigation

4.7-E Restrict construction within 1,000 feet of noise-sensitive receptors to the daytime period from 7:00 a.m. to 7:00 p.m. In addition, no construction within 1,000 feet of noise-sensitive uses shall be permitted on weekends or on legal holidays. Equipment maintenance and servicing shall be confined to the same restrictions.

4.7-F All construction equipment shall have sound-control devices (i.e. mufflers) that are as effective as those provided on original equipment. No equipment with un-muffled exhaust shall be permitted.

4.7-G All equipment shall comply with any and all federal, State, and local standards for noise control.

4.7-H Equipment mobilization areas, water tanks, and equipment storage areas shall be placed in a central location as far from existing residences as feasible.

Water Supply

Impact 4.8-1: The project would result in an incremental demand for municipal water service.

Mitigation

4.8-A Implement water-conserving fixtures and water conservation practices in landscaping and new commercial/industrial development.

4.8-B Future development of the areas proposed for commercial/industrial uses shall be subject to impact fees assess by the City of Watsonville for necessary improvements to the municipal water system infrastructure.

Less-Than-Significant Impacts

No mitigation is required for the following impacts found to be less-than-significant.

Cultural Resources

Impact 4.4-1: Future site grading for improvements and development identified in the Master Plan could result in excavation of buried cultural resources previously unknown.

Recommendation

If resources are identified during grading, halt all work within 50 meters (150 feet) of the find until it can be evaluated by a qualified archaeologist. If the find is determined to be significant, appropriate mitigation measures shall be formulated and implemented.

Traffic and Circulation

Impact 4.5-1: Implementation of the proposed Master Plan will result in additional traffic, but will not result in a decrease in Level of Service to unacceptable levels at any intersection.

Recommendation

No mitigation measures are required, but the following is recommended:

- At the time the new western access road is developed, require construction of a left-turn lane on Buena Vista Drive to facilitate safe and efficient access to the new access road from westbound Buena Vista Drive.

Impact 4.5-2: New access points will be added that would slightly change the flow of traffic on the roadways surrounding the airport.

Recommendation

No mitigation measures are required, but the following is recommended:

- Before final construction plans are completed, require the traffic analysis to be updated so as to include the circulation changes and improvements that have been made since the time of the initial analysis (i.e., changes to Airport Boulevard and cumulative project list).

Impact 4.5-4: Cumulative traffic increases (including the proposed project) will result in additional traffic, but will not result in a decrease in Level of Service to unacceptable levels.

Air Quality

Impact 4.6-1: Implementation of the Master Plan would result in an incremental increase in regional operational emissions.

Land Use

Impact 4.9-1: There is the potential for a land use conflict between the Airport uses and the planned PVUSD New Millennium High School.

3.0 PROJECT DESCRIPTION

PROJECT LOCATION

The project site is located on the northwest boundary of the City of Watsonville in the southern portion of Santa Cruz County (**Figure 3-1**). The Watsonville Municipal Airport covers approximately 344 acres, including 53 acres of non-contiguous land for clear-zone protection.

Access to the site is provided by Highway 1, which forms the airport's southern boundary, and by Airport Boulevard, which forms the airport's eastern boundary (**Figure 3-2**). The airport's western boundary coincides with a portion of the City's western city limits. Access to the airport's terminal building is via Aviation Way off of Airport Boulevard.

Residential land uses occur to the north and east of the airport around the residential community of Freedom, and in narrow strips along Manfre Road and Buena Vista Drive. Concentrated residential land uses are also located to the east across Airport Boulevard. Light industrial development and the Watsonville Community Hospital are located southeast of the airport. Except for the residential development described above, most of the land uses along the runway approaches to the north, west, and south are agricultural.

EXISTING AIRPORT FACILITIES AND OPERATIONS

The Watsonville Municipal Airport is the only public, general aviation airport in Santa Cruz County. The airport is owned and operated by the City of Watsonville, and administered by the Administrative Services Department. An airport manager and several line staff conduct day-to-day operations. The City Council is responsible for major policy decisions associated with airport planning, budgeting and operations.

The Airport has two paved runways serving single and twin-engine aircraft and helicopters, as well as turboprops and turbine-powered business jets. Three non-precision instrument approaches serve the airport. A terminal building with offices and a restaurant is located in the terminal area. The airport has various services including FBOs (fixed based operators) and fueling.

The runways and runway approaches are described as follows: runway 2-20, oriented roughly northeast-southwest, is the primary runway and is 4,501 feet long; the east-west crosswind runway 8-26 is 3,999 feet long. The terminal and hanger areas are located in the southeast quadrant of the intersecting runways.

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Regional Map

Figure 3-1

Source: Watsonville Municipal Airport Master Plan

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Vicinity Map

Figure 3-2

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The general aviation area, located in the southeast quadrant of the airport between the two runways, consists of the terminal building and support areas. This includes aprons, hangers, fueling facilities and a restaurant. There are 206 t-hangar spaces and 17 corporate/other hangars in the terminal area for a total of 223 hangars. Approximately 19 acres of aircraft parking apron, accommodating 202 tie-down spaces, are located in front of the terminal building.

There are currently 326 aircraft based at the airport. Approximately 92% of all aircraft owners at the Watsonville Municipal Airport are from Santa Cruz County (Master Plan 2002). In 2000, the annual aircraft operations totaled approximately 122,890 up 29% from approximately 95,000 annual operations in 1985 (AMBAG).

PROJECT HISTORY

Development of Watsonville Municipal Airport began in 1942 by the Civil Aeronautics Authority. Later that same year, the partially constructed airport was taken over by the War Department. The airport was completed in 1943 and commissioned as Naval Auxiliary Air Station, Watsonville. In March 1946, the War Department, through an Instrument of Transfer, returned the airport to the City of Watsonville for civilian use. The airport received a permit from the California Department of Transportation, Division of Aeronautics as the Watsonville Municipal Airport.

Development of the airport between 1970 and 1985 included the installation of many new features. These new facilities included:

- Apron lighting
- Construction of a terminal building
- Visual Approach Slope Indicators (VASI) installed on Runways 2 and 20
- Expansion of the apron area
- Additional T-hanger space
- Installation of a Localizer
- Installation of a Marker Beacon
- Construction of a City Fire Station No. 2
- The realignment of a south parallel taxiway
- Extension of the main apron for additional aircraft parking

Runway 2-20 lighting was reconstructed in 1991, and various pavement and drainage reconstruction projects were undertaken. Additional hangars were built between 1997-1999.

The first *Watsonville Municipal Airport Master Plan/Initial Study* was prepared and adopted in 1986. Revision of the Master Plan was initiated in 1993, as was preparation of an EIR. In 1993, there was a proposal to remove clay at the airport for use as landfill lining. During this review, the State listed endangered plant Santa Cruz tarplant was found on airport property. Based on concerns about this endangered plant, the clay removal project was abandoned. Work on the Master Plan and EIR was also delayed to consult with the California Department of Fish and Game regarding mitigation and recovery options. A Mitigation Plan was completed in October for the Santa Cruz tarplant and coastal terrace prairie habitats.

PROJECT OBJECTIVES

The objective of the *Watsonville Municipal Airport Draft Master Plan, 2001-2020* (hereafter referred to as the Master Plan) is to facilitate the orderly, flexible, and environmentally sensitive expansion and development of the Airport. The following are the planning objectives for the Airport that are addressed in the Master Plan:

- Support the development of an efficient public use airport by:
  - Remedying existing operational deficiencies by lengthening and improving the primary runway to more fully accommodate turbine-powered aircraft (75 percent fleet with 60 percent load).
  - Remedying existing operational and safety deficiencies by installing a precision instrument landing system (ILS) to increase the number of hours each day that aircraft may operate in foggy conditions and to increase the overall safety of landings in all conditions.
  - Remedying existing space deficiencies by providing for the expansion and enhancement of the terminal and hangar facilities, plus providing new and improved access to accommodate new facilities.
  - Maintaining and enhancing natural resources on the site.
  - Facilitating the development of complementary light industrial and general commercial uses for affiliates of the airport.
  - Providing a fiscally responsible financial plan that will provide suitable facilities and generate revenues necessary for proper operation, management and development of the airport.

- Provide for the development of the Watsonville Municipal Airport consistent with the Master Plan while minimizing adverse effects on the natural physical setting by:
  - Providing for development consistent with the resource protection regulations administered by the United States Army Corps of Engineers, United States Fish and Wildlife Service, the California Coastal Commission and other agencies.
  - Protecting and enhancing wetlands and sensitive habitat areas.

- Provide for the development of the Watsonville Municipal Airport consistent with the Master Plan while minimizing adverse effects on adjacent land uses, the local community and the region by:
  - Providing the basis for creation of a noise mitigation plan that ensures neighboring properties are not significantly affected by airport-generated noise.
  - Developing ancillary uses on the site that are designed to be compatible with existing and planned development in the area.

PROJECT CHARACTERISTICS

Airport Operations Forecast

Aviation forecasts are used for runway capacity analyses and estimates of future apron and hangar parking requirements. The forecasts also provide information on aircraft operations by type for use in the airport noise analyses. **Table 3-1** is a summary of the aircraft and operations forecasts for the years 2000 to 2020.

Table 3-1 Watsonville Municipal Airport: Aircraft & Operations Forecast

	2000	2005	2010	2015	2020
Based Aircraft					
Single Engine	291	291	306	321	338
Multi-Engine	24	24	26	27	28
Helicopter	1	1	1	1	1
Turboprop	5	5	6	7	7
Turbine	5	6	6	7	7
TOTAL	**326**	**327**	**345**	**363**	**381**
Annual Aircraft Operations					
By Type of Operation					
Local	49,156	49,556	52,270	55,140	58,092
Itinerant	73,734	74,334	77,920	82,020	86,411
TOTAL	**122,890**	**123,890**	**130,190**	**137,160**	**144,503**
By Type of Aircraft					
Singe-Engine	106,430	106,880	113,180	119,600	126,003
Multi-Engine	12,140	12,690	12,690	13,240	13,949
Helicopter	0	0	0	0	0
Turboprop	2,820	2,820	2,820	2,820	2,971
Turbine	1,500	1,500	1,500	1,500	1,580
TOTAL	**122,890**	**123,890**	**130,190**	**137,160**	**144,503**
Aircraft Operations Distribution					
Peak Month	11,675	11,770	12,368	13,030	13,728
Peak Week	2,923	2,947	3,097	3,264	3,439
Average Day of Peak Month	390	394	413	435	458
Peak Hour of Average	59	60	63	66	70

Source: Watsonville Municipal Airport Master Plan, 2000-2020; AMBAG 1995 RASP; Watsonville Airport Manager.

Airport Master Plan Elements

Land Use Plan

Figure 3-3 illustrates the Airport Land Use Plan, which includes seven land use designations as described below; acreages are summarized on **Table 3-2**. The designated land uses and their locations are intended to be a broad guideline for future airport development based upon the forecast needs as developed in this Master Plan, and were developed through analysis of the specific aviation needs of the airport.

Table 3-2 Land Use Summary

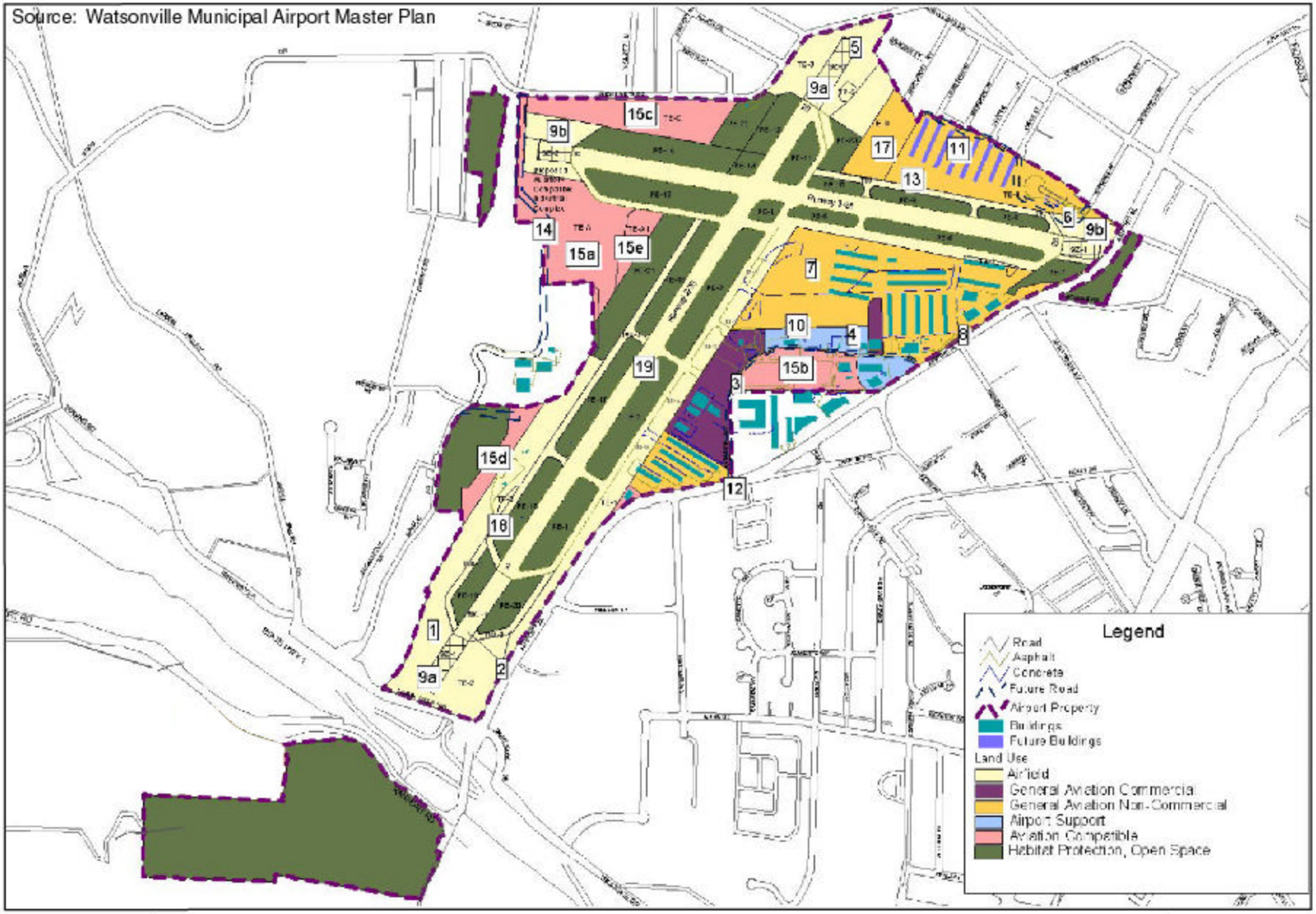
Land Use Category	Acreage
Airfield	106.38
General Aviation – Commercial	9.78
General Aviation – Non-Commercial	58.93
Airport Support	5.81
Aviation Compatible	36.28
Habitat Protection, Open Space	126.56
Total	**343.72**

Source: City of Watsonville GIS Department, Coastplans.com

Airfield. This category includes runways, taxiways, runway protection zones, approach areas, and land within the building restriction lines. The Master Plan includes the following "Airfield" improvement projects: extension of Runway 2-20 and taxiway; construction of a north parallel taxiway; installation of instrument system to complete the Instrument Landing System (ILS) for safety; installation of underground utilities; and paving runway blast pads.

General Aviation Commercial. This category includes fixed based operator (FBO) facilities, involving the sale of general aviation products and services to the general public, and limited service commercial facilities, such as avionics sales and repair shops, aircraft paint shops and aircraft maintenance facilities. The Master Plan includes one following "General Aviation Commercial" improvement, which is the construction of a new access road from Airport Boulevard to serve the commercial hangars in the eastern portion of the airport.

General Aviation Non-Commercial. This category includes facilities for the basing and servicing of aircraft owned by individuals or organizations, and is to be used solely for the benefit of the private aircraft owner. The Master Plan includes the following "General Aviation Non-Commercial" improvements: construction of approximately 100 new hangars north of runway 8-26; construction of a new access road to the new hangar area via extension of Burchell Avenue; construction of a taxiway that runs parallel and west of Runway 2-20; and provide security lighting for existing hangars.



Airport Land Use Plan

Figure 3-3

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Airport Support. This category includes facilities that provide airport-related services, such as airport administration, airport maintenance, aviation fuel facilities, pilot lounge and general services facilities, and aircraft rescue and fire-fighting facilities (ARFF). The Master Plan includes the following "Airport Support" improvement projects: realignment of Aviation Way; construction of an aircraft maintenance shelter (approximately 2,000 square feet); expansion of the existing terminal by 7,000 square feet; and installation of a traffic light at the easterly intersection of Aviation Way and Airport Boulevard.

Aviation-Compatible. This category includes land that may accommodate aviation-related or aviation-compatible uses such as automobile rental agencies, airport restaurant, motel, or other commercial uses, to produce revenues for the airport. Such use must be compatible with and not interfere with the existing aviation uses at the airport. The Master Plan includes the following "Aviation Compatible" improvements: construction of a new access road from Buena Vista Drive and/or Manfre Road; and development of an Airport Research and Development Park on approximately 28.6 acres within five areas.

Habitat Protection/Open Space. This category includes land that has been set aside for habitat protection, or land acquired by Watsonville Municipal Airport for use as clear zone. Land uses in the clear zone are limited to low-density uses. This designation relates to the operation of Watsonville Airport and does not supersede other land use designations for properties outside the Airport. The Master Plan includes implementation of a Tarplant Mitigation Program to mitigate for loss of Santa Cruz tarplant habitat. Details of the program are presented in the BIOTIC RESOURCES section of this EIR.

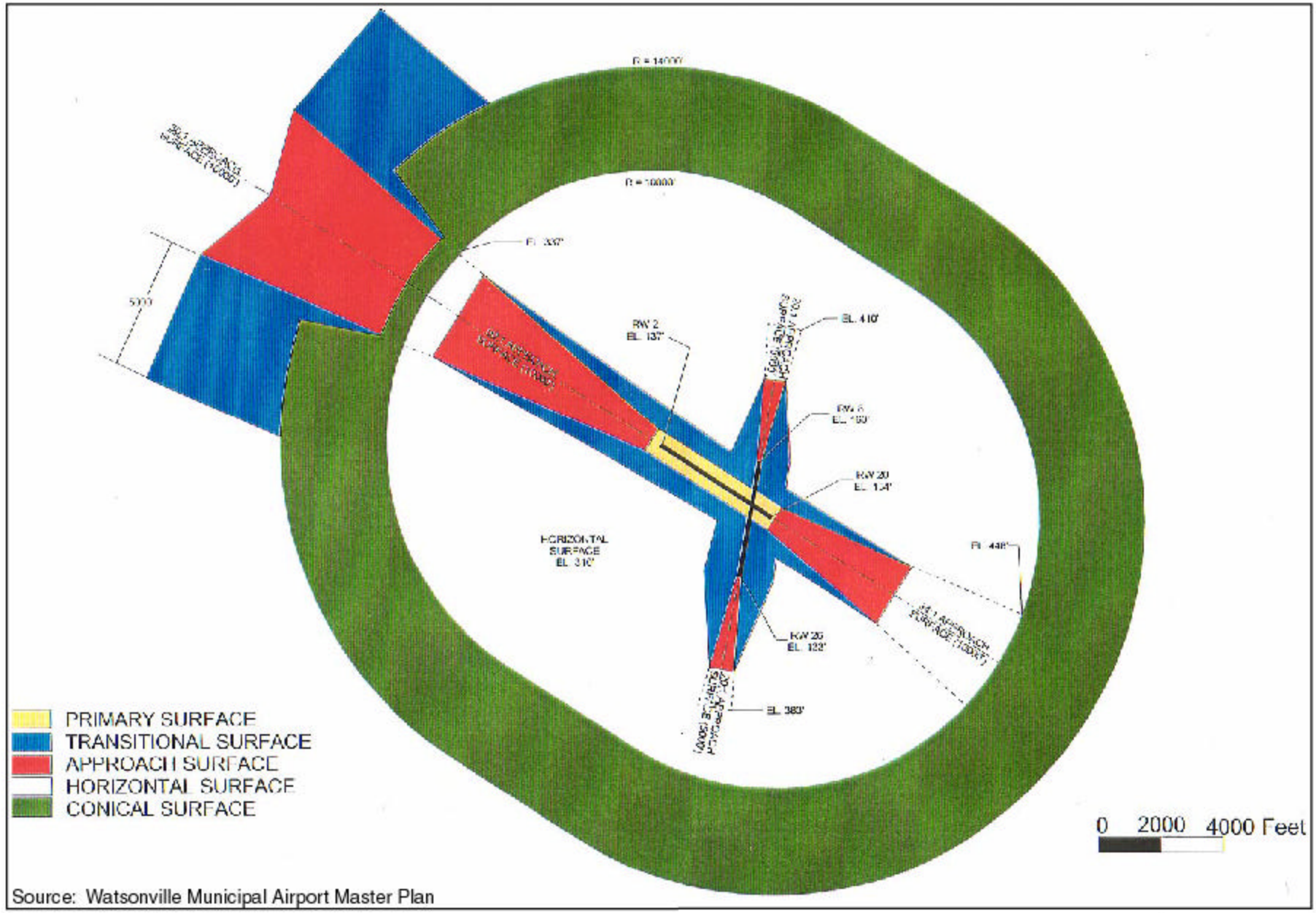
Future Acquisition. This category includes land that should be acquired to protect the ultimate capacity of the airport site, including existing parcels and large areas for future airport expansion and approach protection. Acquisition of additional clear-zone property is also included in this category. Watsonville Municipal Airport has, in the past few years, purchased property west of State Route 1 for airport clear zone. Currently, the Airport owns three properties in this area – APNs 018-351-04, 052-011-17, and 052-011-46.

Airport Layout Plan

This element consists of drawings that describe existing and future airfield conditions, including runways, taxiways, lighting, and approach systems. Specific improvements are described above.

Airspace Protection Plan

The Airspace Protection Plan shows imaginary primary, transitional, approach, horizontal and conical surfaces as shown on **Figure 3-4**. A key function is to provide a basis for height zoning in the environs and to identify obstructions in the vicinity of the airport, which may have an impact on the use of the runways and adjacent airspace.



Source: Watsonville Municipal Airport Master Plan

Airspace Protection Plan

Figure 3-4

DENISE DUFFY & ASSOCIATES, INC.

Terminal Area Plan

The terminal area includes the aircraft parking aprons, hangar areas, terminal building, air traffic control tower, fueling facilities, and other aviation-related facilities and services. Construction of approximately 100 additional hangars and expansion of the terminal building by approximately 2,300 square feet are proposed.

Access Plan

Airport access is provided via Airport Boulevard and Aviation Way. Aviation Way is planned for realignment to bring the facility closer to the airport terminal buildings. The Master Plan also includes provisions for other access improvements. The installation of a traffic signal is planned at the easterly intersection of Aviation Way and Airport Boulevard.

The proposed new access roads are shown on **Figure 3-5**. New access is required for the new fuel tank and future hangars to be located on the north side of Runway 8-26. This will be provided by extending Burchell Avenue approximately 100 feet. Another new road is proposed to service the commercial hangars in the eastern portion of the airport, which would tie into Airport Boulevard.

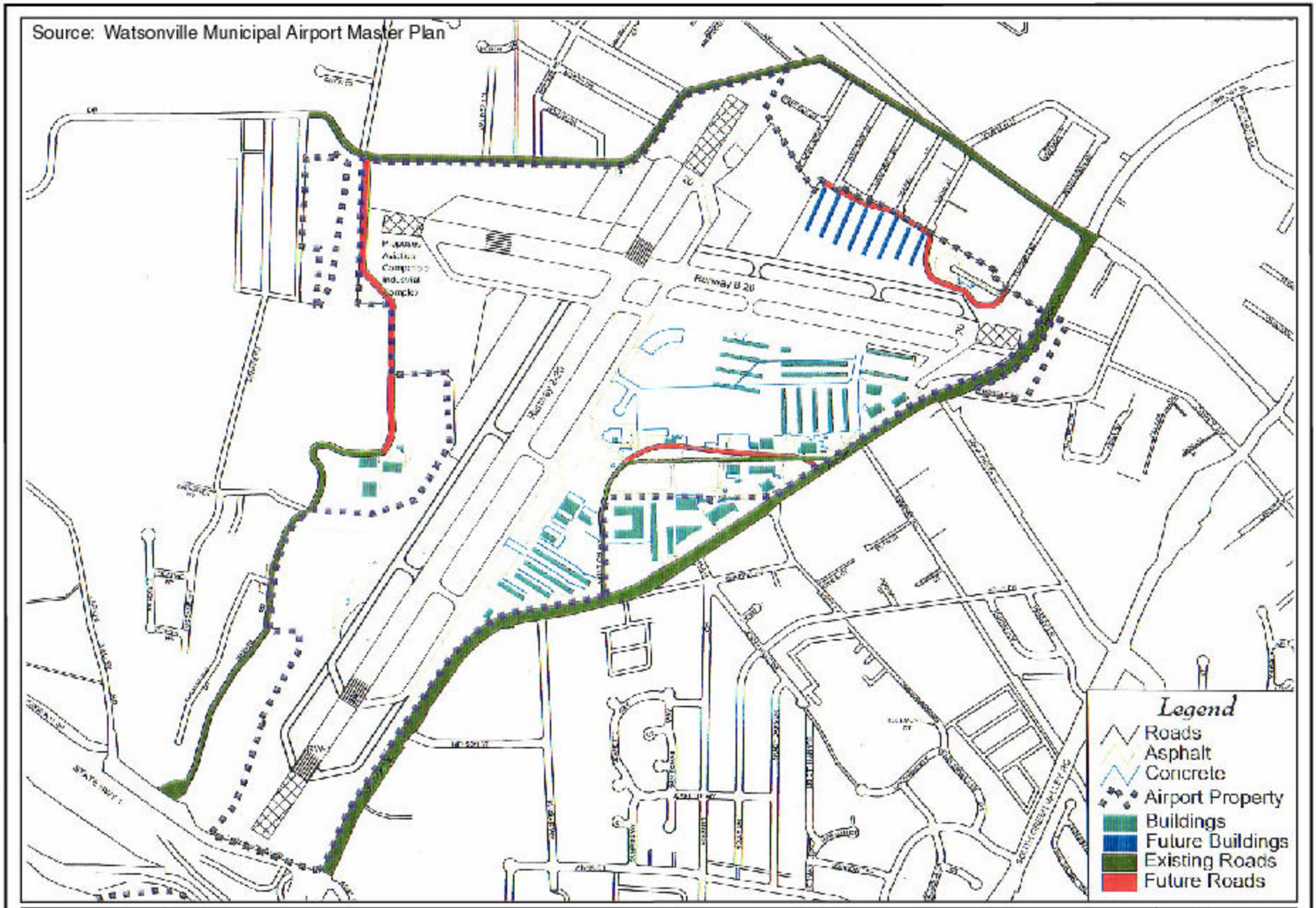
Additionally, a new access road is planned along the northwestern perimeter of the airport to allow access to future industrial development areas northwest of runway 2-20, and will connect Manfre Road at the south end and Buena Vista Drive on the north end. This road will be designed as a two-lane local commercial street with a 58-foot right-of-way (two 14-foot travel lanes with parking on both sides, landscape strips between sidewalk and curb). The northern portion of the proposed alignment is located on Airport property, and the southern portion is located on private property, part of which supports an existing private road.

Planned Airport Improvements and Phasing

Development of airport improvements is anticipated to occur in four phases. The proposed projects for each phase are summarized below. **Figure 3-6** illustrates development phasing and location of the following planned improvements. The numbers below correspond to the improvement numbers shown on **Figure 3-6**.

Phase I: 0 to 5 years (2001-2006):

1. Installation of an instrument landing system (ILS) for safety;
2. Extension of Runway 2-20 by 800 feet to the south with taxiway extensions and lighting;
3. Relocation of Aviation Way and construction of main apron for automobile parking;
4. Construction of an airport maintenance shelter and wash rack;
5. Installation of underground utilities and relocation of Runway 2-20 threshold;
7. Installation of security light at the existing hangars south of Runway 8-26;
8. Construction of new airport access road to the commercial hangars from Airport Blvd.;
10. Expansion of the terminal building and restaurant,
12. Installation of a traffic signal at Aviation Way/Airport Boulevard intersection;



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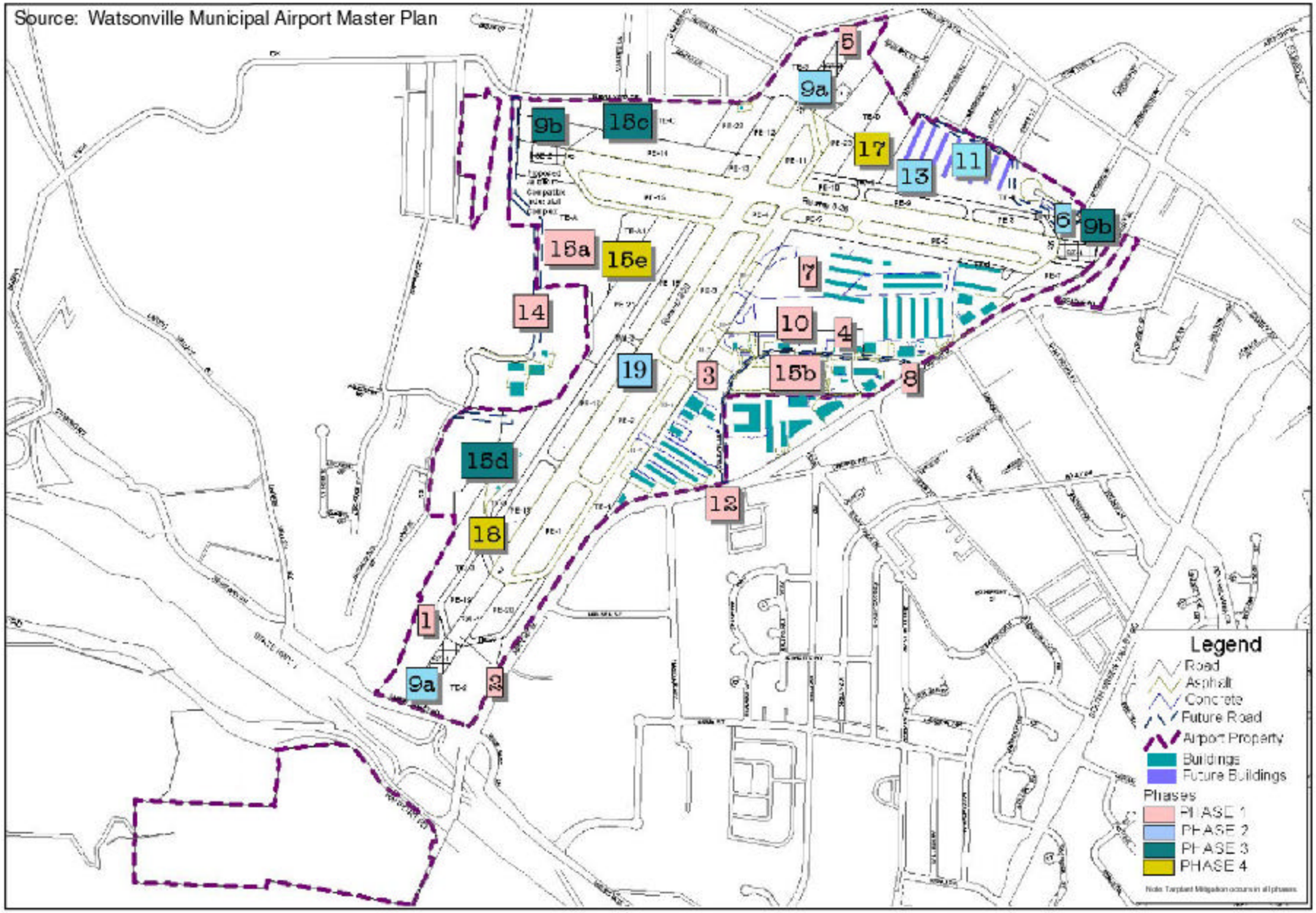
Airport Access Plan

Figure 3-5

DENISE DUFFY & ASSOCIATES, INC.



N

Airport Development Plan and Phasing

Figure 3-6

DENISE DUFFY & ASSOCIATES, INC.

14. Construction of new access road with underground utilities connecting Manfre Road (to the south) and Buena Vista Drive/Bradford Road (to the north) to provide access to commercial/industrial area A;
15. Construction of airport-related commercial/industrial development west of Runway 8-26 (Area 15a) and south of Aviation Way (Area 15b);
16. (Left Blank);
19. Implementation of Tarplant Mitigation Program.

Phase II: 6 to 10 years (2007-2011):

6. Construction of new airport access (Burchell Avenue northeast of runway 8-26);
9. Paving of runway blast pads at both ends of Runway 2-20;
11. Construction of 60-70 new hangars and taxiways north of runway 8-26;
13. Construction of parallel taxiway adjacent to runway 8-26;
19. Implementation of Tarplant Mitigation Program.

Phase III: 11-15 years (2012-2016):

9. Paving of runway blast pads at both ends of Runway 8-26;
15. Construction of airport related commercial/industrial development north of Runway 8-26 (Area 15c) and west of Runway 2-20 (Area 15d);
19. Implementation of Tarplant Mitigation Program.

Phase IV: 16-20 years (2016-2021):

15. Construction of airport related commercial/industrial development west of Runway 2-20 (Area 15e);
17. Construction of new hangars in Area TE-D;
18. Construction of a parallel taxiway west of runway 2-20;
19. Implementation of Tarplant Mitigation Program.

Potential Terminal, Commercial and Industrial Development

As previously indicated, the Master Plan includes expansion of the terminal building by approximately 7,000 square feet. Planned structural development also includes a 2,300 square foot Airport maintenance shelter. Future commercial/industrial development could occur within five onsite areas as shown on **Figure 3-3**, for an area totaling approximately 28.6 acres and 311,750 square feet of building space. This includes a 3.4-acre area adjacent to Aviation Way (Area 15b), and 25 acres on the west side of the Airport (shown as Areas 15a, 15c, 15d, and 15e). The Plan assumes that 80% of the available area will be built out during the timeframe of the Master Plan (2001-2020). Under the phasing plan, Areas 15a and 15b would be developed within the next 10 years, and the remainder of the development areas would be developed in the last 10 years.

The *Watsonville 2005 General Plan* designates all of these areas as "Transportation, Communications & Utilities" and allows development intensity for these areas to be determined "based on the appropriateness of the location, accessibility, traffic impacts, existing site conditions, design compatibility with adjacent land uses, natural and built constraints, and community impacts." The *City of Watsonville Zoning Ordinanc*e zones thesesame areas "TCU, Transportation, Communication, and Utilities District." Uses allowed in the development areas include light industry, office, and research and development that can be demonstrated to be compatible with on-going airport operations.

Maximum development intensity for these development areas is 0.35 square feet of floor area per each one (1) square foot of net lot area (i.e., floor area ratio, FAR = .35). Although, typical FAR for these development areas are .25. Maximum height allowed in these areas is 42 feet. **Table 3-3** summarizes typical potential industrial/commercial development at Watsonville Municipal Airport.

TABLE 3-3 Industrial/Commercial Development Potential

Development Area	Net Area (Acres)	Net Area (Square Feet)	Typical FAR	Typical Floor Area Potential
Industrial Area A (TE-A)	11.2 ac	490,000 s.f.	.25	122,500 s.f.
Industrial Area B	3.4 ac	150,000 s.f.	.25	37,500 s.f.
Industrial Area C (TE-C)	9.2 ac	400,000 s.f.	.25	100,000 s.f.
Industrial Area D	2.3 ac	100,000 s.f.	.25	25,000 s.f.
Industrial Area E (TE-A1)	2.5 ac	107,000 s.f.	.25	26,750 s.f.
Total	**28.6 acres**	**1,247,000 s.f.**		**311,750 s.f.**
Assume 80% Buildout	**22.9 acres**	**997,000 s.f.**		**249,400 s.f.**

Source: Coastplans.com

AREA PLANS AND ZONING

City of Watsonville General Plan and Zoning

The Watsonville 2005 General Plan designates the project site as "Transportation, Communications, and Utilities". This land use designation allows for a variety of uses including, but not limited to, streets and roads, rail transportation, airports, above and below ground utilities, corporation yards, wastewater treatments plants, and solid waste facilities. Because of the large variation in uses for this designation, the allowable floor areas and intensities are determined on an individual project basis. The Watsonville Airport Master Plan is consistent with this land use designation.

The City of Watsonville Zoning Map currently identifies the site as "Transportation, Communications, and Utilities District" (TCU). The purpose of the TCU District is to establish land uses pertaining to transportation, communications and utilities, to minimize hazards and public nuisances, and to maintain a high level of compatibility with adjacent districts. The proposed project conforms to this zoning district.

Regional Airport System Plan

The Association of Monterey Bay Area Governments (AMBAG) produced the Regional Airport System Plan (RASP) in August 1995, and is currently working on updating the document. The RASP defines the roles of airport facilities within AMBAG's jurisdiction and outlines funding for proposed capital improvements. This AMBAG document reviews the existing inventory of regional facilities and presents aviation forecasts through the year 2015.

REQUIRED PERMITS AND APPROVALS

As indicated in the "Introduction", the EIR is an informational document for decision makers. CEQA requires that decision makers review and consider the EIR in their consideration of this project. The City of Watsonville is the Lead Agency responsible for approving the project.

Direct permitting authority will come from the City of Watsonville. The Federal Aviation Administration (FAA), Caltrans Aeronautics Division, and the California Department of Fish and Game will act as responsible agencies during the EIR review process. This EIR provides the environmental documentation required under CEQA and shall apply to all discretionary approvals by public agencies. Agencies with permit review or approval authority over any aspect of the project are summarized in **Table 3-4**.

Table 3-4
Summary of Discretionary Actions

AGENCY	PERMIT/REVIEW REQUIRED
FAA	Approval of Airport Layout Plan and Environmental Assessment
California Department of Fish and Game	Enter into a Memorandum of Understanding for tarplant mitigation
Army Corps of Engineers	Permit under Section 404 of the Clean Water Act
Regional Water Quality Control Board	Permit under Section 401 of the Clean Water Act

4.0 ENVIRONMENTAL SETTING, IMPACTS AND MITIGATION MEASURES

Each topical section in this EIR presents information in three parts. The Environmental Setting sections provide a general overview of the conditions on and adjacent to the project site. Local, State and federal regulations are also identified and discussed, when relevant.

A Relevant Project Characteristics section provides a description of the elements of the project that are relevant to the impact analysis for a particular topic. Relevant project information may relate to the size, characteristics and/or location of facilities and other Master Plan elements. Any project elements that may cause impacts, as well as those that may serve to minimize impacts, will be identified.

The Environmental Impacts and Mitigation Measures section provides a brief description of standards used to evaluate whether an impact is considered significant based on standards identified in the California Environmental Quality Act (CEQA), State CEQA Guidelines, agency policy or regulations and/or professional judgment are also used to further define what actions may cause significant effects. Significant impacts are identified and analyzed. Mitigation measures that would reduce significant impacts are identified. The significance of the impact after mitigation is also identified. For impacts found to be less-than-significant, mitigation measures are not required, but where relevant, the EIR recommends project modifications.

4.1 GEOLOGY AND SOILS

ENVIRONMENTAL SETTING

Regional Geology

The City of Watsonville is located within the Pajaro Valley, the floodplain for the Pajaro River and its tributaries, which is characterized by rich agricultural soils. The ridges of the Santa Cruz Mountains form the northeast extension of the Pajaro watershed; elevated terraces mark the northern and southern limits, and the Monterey Bay forms the westward extent of the valley.

Seismicity

Watsonville is located within a seismically active area of California, and lies between two major fault zones, the San Andreas to the northeast, and the San Gregorio offshore to the west. Other active or potentially active fault zones that could affect Watsonville include the Zayante and Corralitos fault zones located in the Pajaro Valley, and the Monterey Bay fault zone located to the west.

The San Andreas fault is located approximately 3.5 miles northeast of the City. The U.S. Geological Service has estimated that the San Andreas fault could produce an earthquake of 8.5 magnitude on the Richter scale. In this event, the potential for surface rupture would be high. Other ground failures such as landslides and soil liquefaction are also possible, depending on the intensity and duration of an earthquake. A large portion of Watsonville's urbanized area would be subjected to loss of soil strength resulting from liquefaction and settlement in the event of an earthquake with a magnitude similar to the 1906 San Francisco occurrence. In October 1989, a magnitude 7.1 earthquake on the San Andreas Fault rocked Watsonville and much of the San Francisco/Monterey Bay area. The epicenter was 5 miles from Watsonville.

The San Gregorio fault, a major branch of the San Andreas, is considered capable of generating earthquakes of magnitude 7.2 to 7.9. The Zayante-Vergales fault parallels the San Andreas to the southwest, and is considered a potentially active fault. The Zayante-Vergales fault zone is the closest known potentially active fault, and is approximately 0.75 miles from the project site.

The Airport site and surrounding area could be subject to intense ground shaking and liquefaction during a seismic event. Liquefaction is a process by which water-saturated granular soils transform from a solid to a liquid state because of sudden shock or strain. Soils susceptible to liquefaction typically occur along the banks of creeks, sloughs, rivers, and lakes that drain the Watsonville area. Liquefaction is a common result of earthquakes, and the entire southern portion of Santa Cruz County, including Watsonville, is within a zone of liquefaction potential. Those areas within the City limits and adjacent to the Pajaro River (Salsipuedes Creek and Watsonville and Struve Sloughs), are situated in zones of high liquefaction potential. Based on the Watsonville General Plan, the airport is not in either the high or moderate zone of potential liquefaction.

Soils

According to the Soil Conservation Service's *Soil Survey of Santa Cruz County*, soils on the Airport site include Pinto loam and Watsonville loam. *Pinto loam* soil (0 to 2 and 2 to 9 percent slopes) is a very deep, moderately well drained soil located on coastal terraces and old alluvial fans. Permeability of this soil is low (U.S. Soil Survey of Santa Cruz County, 1980). Surface runoff is slow to medium, and the hazard of erosion is slight to moderate. Pinto Loam soil contains a depth to the high water table that is greater than 6 feet.

The site also contains Watsonville loam (with 2 to 15 percent slopes) which is a very deep and somewhat poorly drained soil found on coastal terraces. Permeability of this soil is very low, and water is perched above the soil at times. Runoff is slow or medium and the hazard of erosion is slight to moderate. Watsonville loam soil contains a depth to the high water table that is 1.5 to 3.0 feet, and is normally perched during the months of November through March.

The other soil on the site is *"thick surface" Watsonville loam* (2 to 15 percent slopes) which is somewhat poorly drained and is found on coastal terraces. This soil was formed in alluvium, and typically the surface layer is slightly acid loam about 20 inches thick. The subsurface layer is slightly acid sandy loam about 6 inches thick. The subsoil is slightly acid clay about 21 inches thick. The substratum to a depth of 63 inches is slightly acid and medium acid sandy clay loam. Permeability of this soil is very slow. Water perches above the clay in places. Plant root depth is 60 inches, but roots are limited to cracks in the hard compacted clay below depths of 20 to 40 inches. Runoff is slow to medium and the hazard of erosion is slight to moderate. Erosion can be a hazard in steeper areas of this unit if the soil is disturbed and left bare. "Thick surface" Watsonville loam contains a depth to the high water table that is 1.5 to 3.0 feet and is normally perched during the months of November through March.

RELEVANT PROJECT CHARACTERISTICS

The proposed Watsonville Airport Master Plan identifies future facility demands and improvement needs, planning goals within several elements, and specific improvement projects within four planning periods. The Master Plan projects that may impact the geology and soils in the area include:

Phase I	1, 2, 3, 4, 5, 8, 10, 14, 15
Phase II	6, 9, 11, 13
Phase III	9, 15
Phase IV	15, 17, 18
Note: See Section **3.0 PROJECT DESCRIPTION** for a list of all Master Plan projects and their descriptions.	

IMPACTS AND MITIGATION MEASURES

Standards of Significance

In accordance with the California Environmental Quality Act (CEQA), State CEQA Guidelines, and agency and professional standards, a project impact would be considered significant if the project would:

- Be located on a site with geologic features which pose a substantial hazard to property and/or life (i.e. active fault, strong seismic shaking, seismic-related ground failure, including liquefaction active landslide or unstable slope) and that cannot be mitigated through the use of standard engineering design techniques;
- Be located in an area where soils or near-surface geologic conditions are sufficiently unstable or otherwise susceptible to failure such that soils and geologic engineering techniques do not reduce geologic hazards to a level of insignificance; or
- Result in substantial soil erosion and subsequent sedimentation into local drainage facilities and water bodies.

Impacts and Mitigation Measures

The Watsonville Municipal Airport is not located within areas subject to geological hazards except for seismic hazards and site specific soils constraints as discussed below. Potential erosion is discussed in section **4.2 DRAINAGE AND WATER QUALITY**.

Impact 4.1-1: New development may be subjected to ground shaking associated with moderate to large earthquakes centered along nearby faults, and subject to site-specific soil constraints. This is considered a *potentially significant impact*.

Watsonville lies between two major fault zones, the San Andreas to the northeast, and the San Gregorio offshore to the west. Other active or potentially active fault zones that could affect Watsonville include the Zayante-Vergales and Corralitos fault zones located in the Pajaro Valley, and the Monterey Bay fault zone located to the west. The Zayante-Vergales fault zone is located approximately 0.75 miles from the project site. Typically, structural development designed in accordance with the Uniform Building Code provides protection against structural failure in the event of seismic shaking.

The soils found at the Airport have constraints related to poor drainage and perched water tables. Habitable structures will need to be designed in accordance with recommendations of a site-specific geotechnical report, which determines foundation and other design parameters based on the soil characteristics found at the site.

Mitigation

Implementation of the following Mitigation Measure will reduce impacts to a *less-than-significant* level.

4.1-A Require all future proposed structures be designed in accordance with the requirements of the Uniform Building Code, current edition, and designed in accordance with recommendations of a site-specific geotechnical report at the time habitable structures are proposed and designed.

4.2 DRAINAGE AND WATER QUALITY

ENVIRONMENTAL SETTING

Drainage Patterns

The storm water flow on the north side of the airport originates from the adjacent residential community north of Buena Vista Drive and from the airport property. Storm water is then conveyed by underground storm water culverts that connect to an existing storm water culvert on Airport Boulevard. There is also an underground storm drain collection system between the main ramp and the south side of Runway 26 that connects to Airport Boulevard. The storm drains along Airport Boulevard in the vicinity of the project were recently upgraded due to widening of the street. New drains were also installed along Aviation Way, up to the fire station, to an existing drainage inlet.

On the west side of the airport, a 20-inch storm water line located under Runway 8 collects storm water flows from Buena Vista Drive and the airport property in the northwest corner of the airport. Storm water is then conveyed down the west side of Runway 2 between the Jennings Industrial Park on the west side of the airport and the pistol range. Storm water flow is then conveyed to Manfre Road, and via surface drainage facilities to Harkins Slough. On the east side of Runway 2 is a surface drain system that connects to the Airport Boulevard storm drain pipeline.

The truncated headwaters of Struve Slough and two artificial drainage ditches are located in the northeastern portion of the site. Approximately 1,000 feet of the slough channel downstream of this site, the channel is culverted beneath the airport. The slough channel eventually surfaces east of Airport Boulevard, near the Loma Prieta intersection (Mori, July 1998).

An approximately five foot wide earthen trapezoidal drainage channel is located along the western edge of the project and is connected to an approximately 825-foot long intermittent tributary to Harkins Slough. The tributary channel is approximately 10 feet wide with low banks along the upper half, and approximately five feet wide and more deeply incised along the lower half (Mori, 1998). The Harkins Slough tributary also includes a 700-foot long branch, which originates from just below the upper terrace of the project site. The higher drainage channel empties into this branch through a culvert beneath a dirt road. Most of the drainage is deeply incised with vertical banks, but gradually becomes shallow before joining the main stem of the tributary (Ibid.).

Flood Hazards

The Pajaro River and Corralitos Creek have a long history of flooding, as occurred in 1955, 1975, and 1995. According to the Watsonville General Plan, the airport site is not prone to inundation by a 100-year flood (a flooding event that has a one percent probability of occurring in any given year). The project site is not within flood zones designated in the City of Watsonville General Plan, nor is it within a FEMA designated 100-year flood boundary.

Water Quality

The National Pollutant Discharge Elimination System (NPDES) implements an amendment to the Clean Water Act, enacted by Congress in 1987 to regulate discharges of stormwater from certain sites after October 1, 1992. Under these regulations, facilities such as airports, which have storm water discharges associated with industrial activity, are required to obtain a NPDES permit under the appropriate program.

In 1990, the U.S. Environmental Protection Agency (EPA) adopted regulations to cover non-point discharges. In California, the EPA delegated its authority to administer the NPDES to the State Water Resources Control Board (SWRCB) and the Regional Water Quality Control Board (RWQCB).

Watsonville Municipal Airport is required to have a general permit under the "transportation" category. The intent of the airport's compliance permit is to develop and implement a Storm Water Pollution Prevention Plan (SWPPP) and Monitoring Program. The airport and City staff are responsible for amending the SWPPP whenever there is a change in construction, operation, or maintenance that would affect the quality or quantity of the industrial storm water discharge.

The general permit requires dischargers to :

- eliminate non-storm water discharges, including illicit connections to storm water systems;
- develop and implement a SWPPP; and
- perform water quality monitoring of discharges to storm water conveyance systems.

The SWPPP must emphasize best management practices, which may include treatment of storm water discharges along with source reduction. SWPPPs must be prepared, retained on site, and implemented by all industrial discharges. The SWPPP has two major objectives:

- to help identify the sources of pollution that affect storm water quality; and
- to describe and ensure the implementation of practices to reduce pollutants in industrial storm water discharges.

The City of Watsonville prepared the SWPPP in December 1992. The City staff is required to amend the SWPPP when there are changes affecting the storm water system.

RELEVANT PROJECT CHARACTERISTICS

The proposed Watsonville Airport Master Plan identifies future facility demands and improvement needs, planning goals within several elements, and specific improvement projects within four planning periods. The Master Plan projects that may impact drainage and water quality include:

Phase I	1, 3, 4, 8, 10, 14, 15
Phase II	6, 11
Phase III	15
Phase IV	15, 17
Note: See Section **3.0 PROJECT DESCRIPTION** for a list of all Master Plan projects and their descriptions.	

IMPACTS AND MITIGATION MEASURES

Standards of Significance

In accordance with the California Environmental Quality Act (CEQA), State CEQA Guidelines, and agency and professional standards, a project impact would be considered significant if the project would:

- Result in significant increased runoff volumes or rates which would exceed capacity of existing or planned storm drain facilities, cause downstream or offsite drainage problems, or increase the risk or severity of flooding in downstream areas;
- Substantially alter the existing drainage pattern of the site or area, which would result in offsite drainage or flood problems;
- Be located within a 100-year floodplain and expose property or people to flood hazards; or
- Result in degradation of surface water quality to a point of exceeding state water quality standards or objectives (e.g. RWQCB Basin Plan Objectives and State maximum contaminant levels, where applicable) or otherwise substantially degrades water quality.

Impacts and Mitigation Measures

The Watsonville Municipal Airport is not located within FEMA designated 100 year flood zones.

Impact 4.2-1: Implementation of the Master Plan and full buildout would result in an increase in impervious surfaces and runoff, especially from future commercial development. Although future development would not alter existing drainage patterns, capacity of storm drains may be adversely effected. This is considered a *potentially significant* impact.

Long-term impacts may include construction activities that result in the compaction of soil, which reduces natural absorption and increases storm runoff. The proposed project would increase the volume and velocity of storm water runoff by adding more impervious surfaces, such as new hangar development, taxiways, runway extensions, runway safety areas, non-aviation commercial lease areas and a roadway located in the northwestern portion of the site. Because the storm drain system already collects the majority of runoff from the areas of proposed runway and taxiway extensions, the incremental increase from airport improvements would not substantially increase existing runoff. However, future commercial/industrial development could result in significant increases in runoff due to potential development of approximately 30 acres on the west side of the Airport. Portions of this area are not served by storm drains.

Mitigation

Implementation of the following Mitigation Measures will reduce the impact to a *less-than-significant* level.

4.2-A Require future commercial/industrial developments to provide an engineered drainage system onsite, in accordance with City Public Works Department requirements, to insure that post-project runoff does not exceed existing storm drain capacities.

4.2-B New development shall incorporate drainage design that is specifically directed toward reducing the amount of runoff from paved surfaces. Runoff volumes can be reduced by site design that limits paved areas, employs permeable paving designs, and/or incorporates drainage design that disperses runoff into areas designed to slow runoff and encourage percolation into soils.

4.2-C Prior to development, a plan for conducting regular maintenance and cleaning of on-site drainage and detention facilities, to ensure ongoing provision of adequate capacity, shall be drafted and approved by the City Public Works Department.

Impact 4.2-2: Proposed development of the Master Plan could result in significant water quality impacts from erosion or surface water quality degradation. This is considered a *potentially significant* impact.

The west side of the airport contains 15% slopes that could be subjected to erosion, thus potentially impacting on-site and off-site drainage facilities, structures, and existing landscape contours. The non-aviation commercial lease area and the Bradford Road extension development proposed in the last phases of the Master Plan is located in the sloping area of the project site and is subject to erosion that may impact drainage facilities, structures, and existing landscape contours. Drainage channels and tributaries to the Watsonville Slough are located downstream of this area (See also Section **4.3 BIOLOGICAL RESOURCES**).

Development of the non-aviation commercial lease area and the Bradford Road extension may expose soils to potential erosion that can result in sedimentation of surface water drainage systems. Stripping of vegetation may result in the erosion of soils during times of heavy precipitation or during windy conditions. One concern is that if soil is washed into surface drainages, the drainage system may become clogged. Another concern is wind blown dust from exposed surfaces. These impacts are short-term and can be minimized through increased maintenance and specific control measures during the construction period.

The remaining Master Plan development is concentrated around existing structures and runways in the northeast quadrant of the site. Proposed runway extensions are located on the south end of runways 2 and 20. Taxiways are proposed for runways 2-20 and 8-26. The runway extensions and the associated taxiways would have little relative impact on the existing storm drain system. Any additional runoff from the extended runway/taxiway would be collected by extensions to the existing surface storm drain system to be constructed as part of the runway/taxiway extension.

Daily airport activities, including aircraft maintenance and repair, aircraft washing, engine-test operations, and the storage and dispensing of aircraft fuel, lubricating, and hydraulic fluids are potential sources of groundwater contamination, if not properly managed.

The proposed project would include construction of an aircraft maintenance shelter and wash rack located between the Administration Building and east T-hangers. Currently, five aircraft are washed per week (French, personal communication, August 2002). As part of the SWPPP, the airport staff is required to prepare and update a Hazardous Materials Management Plan that requires Material Safety Data Sheets detailing cleaning and disposal of spilled materials.

Mitigation

Implementation of the following Mitigation Measures will reduce this impact to a *less-than-significant* level.

4.2-D The City shall amend the airport's Storm Water Pollution Prevention Plan and submit the plan to the RWQCB for review and approval prior to construction.

4.2-E The City shall update the Hazardous Materials Management Plan as part of the SWPPP so that potential pollutants such as fuels, oil, bitumens, sewage, and other hazardous chemicals and materials will not be discharged into storm drains or drainage channels, nor will they be stored or dumped in any location where they might enter the ground water or drainage systems.

4.2-F Require implementation of standard erosion control best management practices during future development projects, including but not limited to: minimizing area of disturbance, prohibiting grading during the rainy season (approximately October 15 through April 15), controlling graded areas during the rainy season, and revegetating disturbed areas with species that do not conflict with the Tarplant Mitigation Plan recommendations (See also Section **4.3 BIOLOGICAL RESOURCES**).

4.3 BIOLOGICAL RESOURCES

ENVIRONMENTAL SETTING

The information provided in this section is based on baseline biological surveys conducted by BioSystems Analysis for Denise Duffy & Associates (DDA) in 1995 when the Master Plan EIR was initiated, and supplemental studies conducted by John Gilchrist & Associates (JGA), Bryan Mori Biological Consulting Services, and Laurie Kiguchi Biological Consulting, as noted in the text.

Vegetation

Existing habitat classification schemes were used to categorize and map habitat types on the project site that are in undeveloped areas. Aerial photographs on display in the administrative building of the airport facility were also used as an aid to the mapping effort. Habitat types found on the project site include grassland / coastal terrace prairie, central coast arroyo willow riparian forest, and seasonal wetlands.

Grassland / Coastal Terrace Prairie

The grassland community occurs over much of the Airport property and in previously disturbed areas of the project site. The community, dominated by annual, non-native grass species, is classified as California annual grassland as per the California Native Diversity Data Base (CNDDB) classification. There are scattered inclusions of native grasses and other native herbaceous species. Coastal terrace prairie was defined as grassland areas where visual estimations showed native bunchgrasses comprising 5-20% cover and representing a dominant presence in the habitat. Annual grasses were present, and extensive bunchgrass stands persisted. In contrast, annual grasslands comprised mostly exotic annual grass species; native bunchgrasses were scattered and relatively few.

Coastal terrace prairie (Holland 1986), also known as the California Oatgrass (*Danthonia californica*) community or series (CDFG 2000, Sawyer and Keeler-Wolf 1995), is a major component of the Airport biotic habitat. The Airport site was initially surveyed in1994, and again in 1998 as part of the Tarplant Mitigation Plan (DDA, 1995; JGA, 1998). On the Airport site, floristic composition of the grasslands varies from a complete dominance by non-native species to sites where native species dominate and exotic grasses are rare or largely absent.

The best developed portions of native coastal terrace prairie on the airport site are dominated by California oatgrass and purple needlegrass *(Nasella pulchra).* Santa Cruz tarplant (Holocarpha macradenia) is also abundant in this community with almost pure stands of tarplant occupying some areas. A variety of associated native grasses and graminoids which occur in this vegetation type are absent or infrequent at the airport site. By contrast, the coastal terrace prairie on the airport site is notable for the presence of a number of annual herbs which are less common at other sites in the region. An example of this is the early spring dominance of the airport site by the native wildflower pink Johnny-tuck (*Triphysaria eriantha* ssp*. rosea*). The Airport has not actively managed the coastal terrace prairie community, but the mowing regime used appears to have favored the development of California oatgrass and purple needlegrass, the two principal native components of the community.

Central Coast Arroyo Willow Riparian Forest

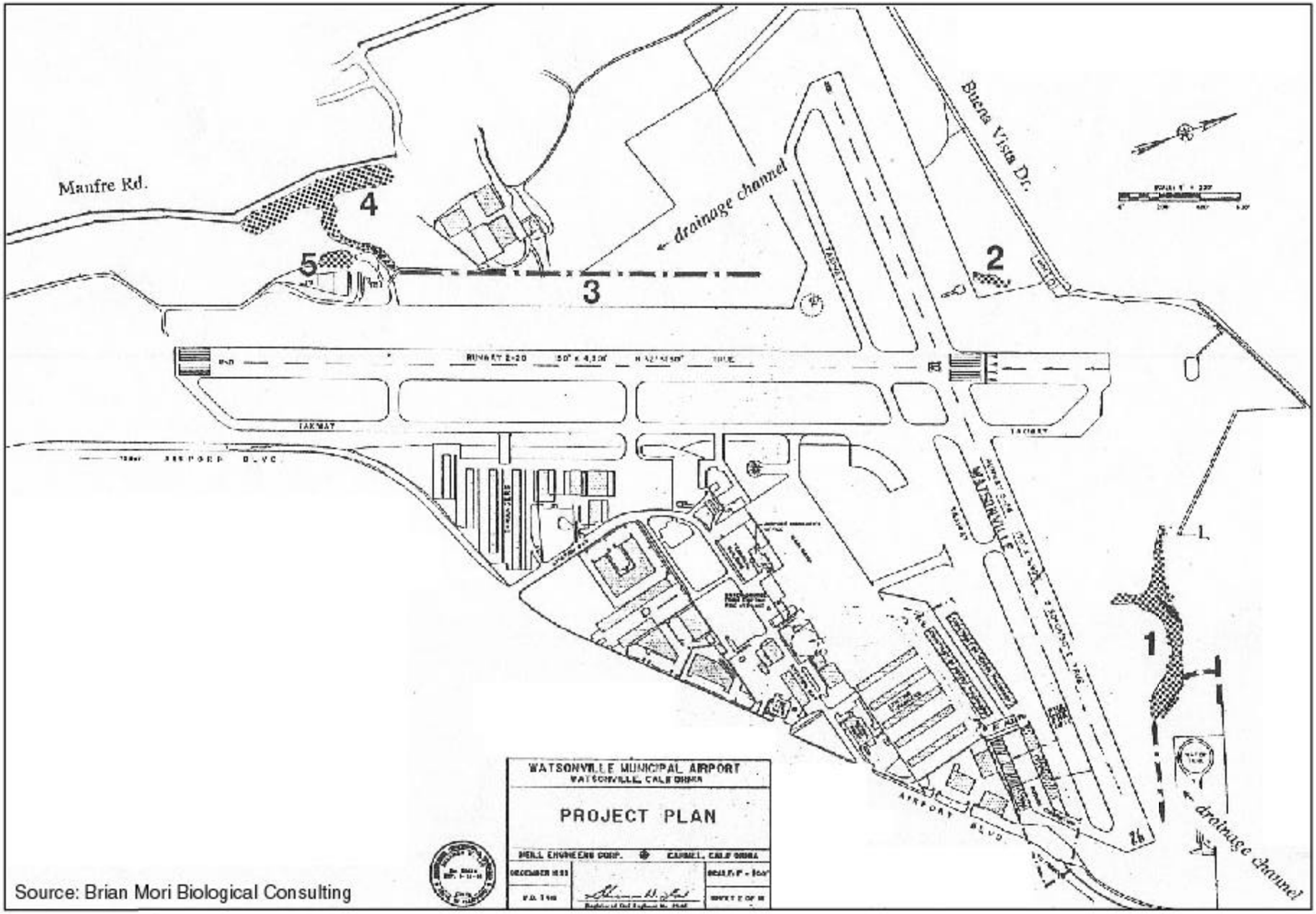
An approximate 1.3-acre wetland site is located along the northeastern edge of the project site and consists of the truncated headwaters of Struve Slough and two artificial drainage ditches which connect to the wetlands (shown as Site 1 on **Figure 4.3-1**). Approximately 1,000 feet of the slough channel downstream of the wetland site is culverted beneath the Airport. The slough channel eventually surfaces east of Airport boulevard near the Loma Prieta intersection (Mori, July 1998).

The area is characterized by a shallow channel with moderately sloping banks supporting a dense overstory of willow (*Salix* sp), riparian, and freshwater wetland vegetation dispersed along the borders, a small patch of elm and one eucalyptus tree (Ibid.). The area is a jurisdictional wetland under U.S. Army Corps of Engineers' definitions (JGA, February 1999). The site ponds seasonally in a linear topographical depression and channels associated with natural contours and artificial berms.

Seasonal Wetlands

In addition to the above site, there are four other wetland sites found on or adjacent to the Airport property. Site 2, as shown on **Figure 4.3-1**, is located in the northwest portion of the site, south of Buena Vista Drive. The site consists of two seasonally ponded depressions connected by shallow, narrow channels within a grassland community (Ibid.). Approximately 0.08 acres are considered jurisdictional wetlands (Ibid.). There is also a small depression located about 50 feet northwest of the westerly tip of Site 1, which contains 0.06 acres of jurisdictional wetland (Ibid.).

Site 3 of the same figure consists of an earthen trapezoidal drainage channel located along the western edge of the project site and joins with Site 4. The channel is approximately 5 feet wide with periods of standing water. Water is mostly confined in the channel. Site 4 is located on the western edge of the project site and includes approximately 825 feet of an intermittent tributary to Harkin's Slough. The banks of the channel support a dense, continuous stand of willow riparian vegetation. The channel is approximately 10 feet wide with low banks along the upper half, and approximately 5 feet wide and more deeply incised along the lower half (Mori, 1998). Site 5 is a small former stock pond located below the city of Watsonville Police Department Pistol Range, which supports cattails and willows (Ibid.). Sites 3, 4 and 5 were not delineated due to the fact that they will not be impacted by any of the proposed Airport projects.



Source: Brian Mori Biological Consulting

Habitat Location Map

Figure 4.3-1

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Wildlife

Prior to conducting field surveys, a literature search was conducted to determine what sensitive species might occur at the airport. In addition, the records of nearby surveys were searched along with other non-published sources to determine the likelihood of sensitive species habitat being present at the airport. A site reconnaissance survey was conducted in 1994 by BioSystems, and again in July 2001 by Biological Consulting Services. Special status wildlife species potentially occurring in the project vicinity are listed in **Table 4.3-1**.

Sensitive Habitat Areas

Sensitive habitat areas include those defined by the Natural Heritage Program of the California Department of Fish and Game (CDFG) such as riparian corridors, wetlands, habitats for legally protected species and species of special concern, areas of unusual or high biodiversity, and unusual or regionally restricted habitats. The California Natural Diversity Data Base (CNDDB) of the CDFG maintains information on the location and significance of special status communities within the state.

The Airport property supports three sensitive habitat areas: coastal terrace prairie, riparian, and wetlands. These are further discussed below.

Coastal Terrace Prairie

As previously indicated, coastal terrace prairie is a major component of the Airport biotic habitat. The coastal terrace prairie within the Airport property is considered a sensitive habitat due to the prevalence of native plant species, the known occurrence of an endangered plant species, and its limited distribution within the region. The decline in geographic extent and ecological integrity is the basis for its' Nature Conservancy Heritage Program Status Ranking as Very Threatened (JGA, October 2001).

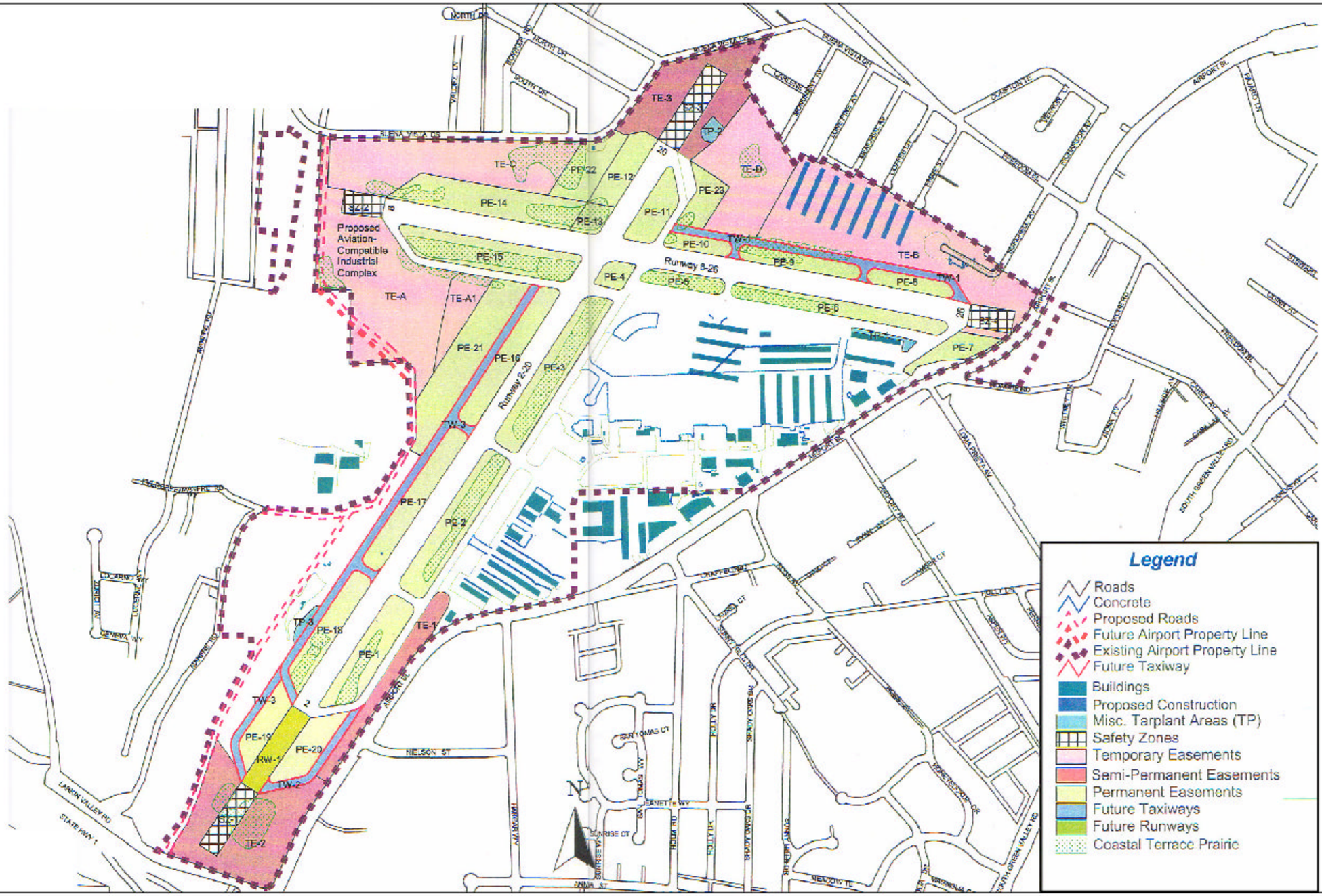
The coastal prairie habitat was initially surveyed in 1994, and again in 1998 as part of the Tarplant Mitigation Plan proposed for the Airport. The 1994 survey quantitatively examined three sites within one area of high quality native coastal prairie in the northwest corner of the Airport, in the vicinity of current planning areas PE-14, TE-C, and PE-22 (DDA 1995, JGA 1998). At these sites, cover of California oatgrass in sampling quadrants ranged from 7.8% to 25.2%; cover of purple needlegrass ranged from 0% to 18.0%. The coastal terrace prairie at the Airport supported a high number of annual herbs (such as pink Johnny-tuck [*Triphysaria eriantha* ssp. *rosea*]). No map is available from the 1994 survey.

The field survey of the coastal terrace prairie, conducted in September 1998 by John Gilchrist & Associates, focused on characterizing grasslands on the project site and mapping areas of coastal terrace prairie. Coastal terrace prairie was defined as grassland areas where visual estimations showed native bunchgrasses comprising 5-20% cover and representing a dominant presence in the habitat. The results of the 1998 survey found 22.10 acres of coastal terrace prairie, widely distributed at the Airport (**Figure 4.3-2**). In some areas, the bunchgrasses were exceptionally dense, forming monospecific stands of primarily California

Table 4.3-1 Special Status Wildlife Species Potentially Occurring at the Watsonville Airport

Species	Status	Comments
Santa Cruz Long-toed Salamander (*Ambystoma macrodactylum croceum*)	FE, SE	No suitable upland and breeding habitat on site.
California Red-legged Frog (*Rana aurora draytonii*)	FT, CSC	Known populations exist in West Branch Struve and upper Harkin's Sloughs. The project site does not support breeding habitat, but does have willow riparian/wetlands and may offer dispersal habitat.
Southwestern Pond Turtle (*Clemmys marmorata*)	CSC	Willow riparian corridor adjacent to Manfre Rd. may provide habitat.
White-tailed Kite (*Elanus leucurus*)	FP	Uplands provide foraging habitat, but nesting habitat absent.
Northern Harrier (*Circus cyanus*)	CSC	Probably sporadically occurs to forage on site. No nesting habitat.
Sharp-shinned Hawk (*Accipiter striatus*)	CSC	May occur occasionally to forage on site during non-breeding period. No nesting habitat.
Cooper's Hawk (*A. cooperii*)	CSC	May occur occasionally to forage on site during non-breeding period. No nesting habitat.
Ferruginous Hawk (*Buteo regalis*)	CSC	May occur on rare occasions to forage on uplands. No nesting habitat.
Golden Eagle (*Aquila chrysaetos*)	CSC	Occurs as an aerial transient. Uplands marginal as foraging habitat due to lack of ground squirrels.
Merlin (*Falco columbarius*)	CSC	May occur occasionally to forage on site during winter. No nesting habitat.
Short-eared Owl (*Asio flammeus*)	CSC	Project site unsuitable due to regular management activities.
Burrowing Owl (*Speyotyto cunicularia*)	CSC	Project site unsuitable due to regular management activities.
Horned Lark (*Eremophila alpestris*)	CSC	Project site unsuitable due to regular management activities.
Loggerhead Shrike (*Lanius ludovicianus*)	CSC	Project site unsuitable due to regular management activities.
Yellow Warbler (*Dendroica petechia*)	CSC	Potential nesting habitat along riparian adjacent to Manfre Rd.
Tricolored Blackbird (*Agelaius tricolor*)	CSC	May occur occasionally to forage on site during non-breeding period. No nesting habitat.
Townsend's Big-eared Bat (*Corynorhinus townsendii townsendii*)	CSC	No bat roost habitat on uplands. May forage on site.
Pallid Bat (*Antrozous pallida*)	CSC	No bat roost habitat on uplands. May forage on site.
San Francisco Dusky-Footed Woodrat (*Neotoma fuscipes annectens*)	CSC	Willow riparian along Manfre Rd. may provide potential habitat.

Status Codes: FE = Federally endangered; SE = State endangered; FT – Federally Threatened; CSC = California Species of Special Concern; FP = State fully protected species.
Source: Brian Mori Biological Consulting Services, Biological survey, July 13, 2001.



N

1998 Coastal Terrace Prairie Distribution

Figure 4.3-2

oatgrass. The endangered Santa Cruz tarplant (*Holocarpha macradenia*) was often found growing in the less dense areas of coastal terrace prairie (as well as in annual grassland habitat), but not in the dense bunchgrass stands (JGA, October 2001).

Riparian Habitat

Riparian habitat is one of the highest value habitats for wildlife species diversity and abundance in California due to factors such as presence of surface water, the variety of niches provided by the high structural complexity of the habitat, and the abundance of plant growth. Riparian habitat along the eastern and western portions of the project site may be used by a diversity of wildlife species for food, water, escape cover, nesting, and thermal cover.

At the Airport site, willow riparian habitat exists at two locations (Sites 1 and 4 on **Figure 4.3-1**), both of which are drainage areas and/or tributaries to segments of the Watsonville Slough system, which is further discussed below.

Wetlands

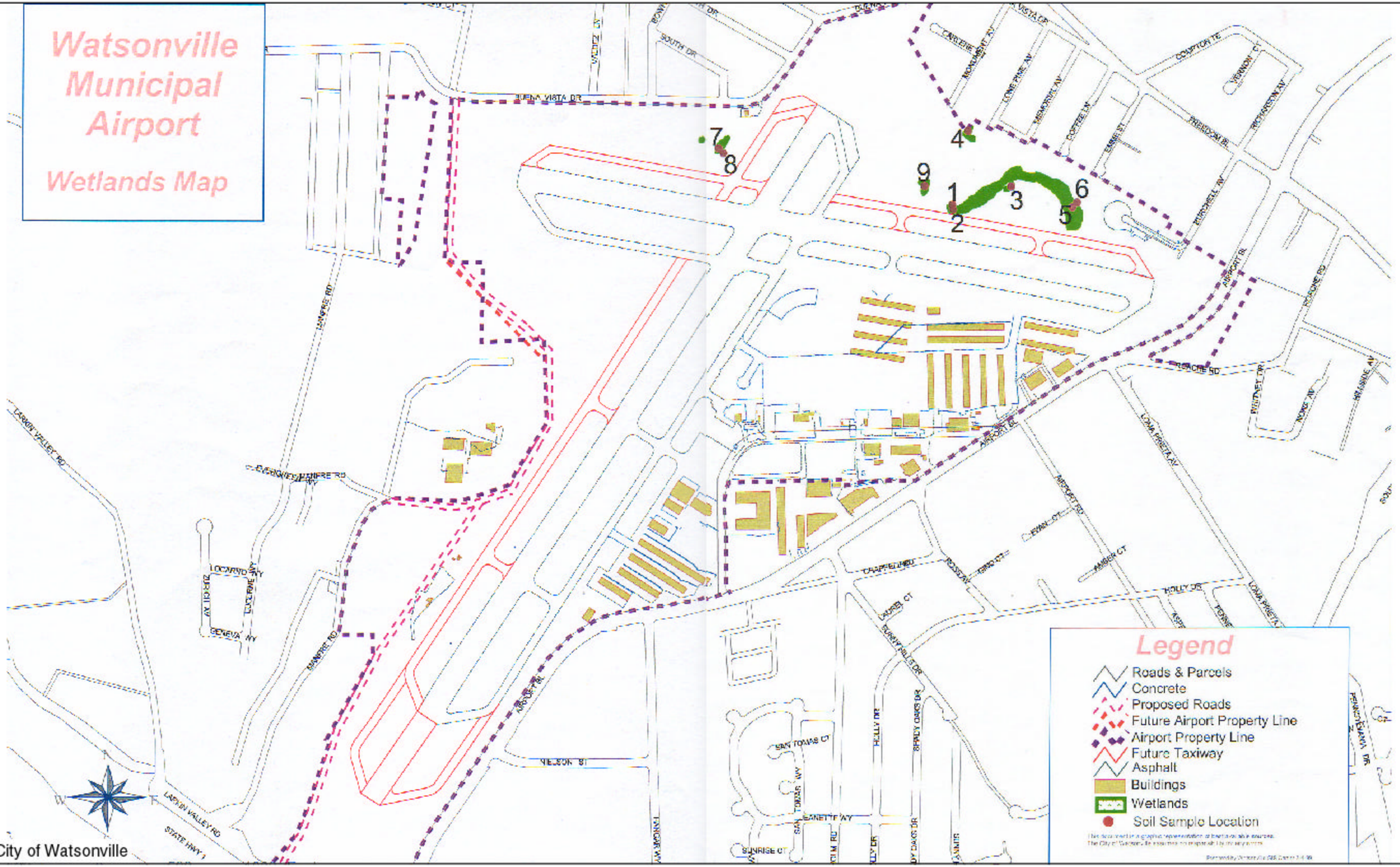
Wetlands are considered important habitat areas and are regulated by the U.S. Army Corps of Engineers (COE). The placement of fill in waters of the U.S. and wetlands is regulated through Section 404 of the Clean Water Act, which is under the jurisdiction of the COE. A preliminary wetland delineation was conducted in 1999 by John Gilchrist & Associates, and identified 1.47 acres of jurisdictional wetlands on the Airport property. The delineation was confirmed by the COE on February 10, 1999 and is valid for 5 years. Jurisdictional wetlands are shown on **Figure 4.3-3**, and the wetland report is included in **Appendix B**.

Three separate wetland areas were identified by the 1999 report. Site one is located in the northeast portion of the project site. This area contains both willow riparian vegetation and freshwater wetland vegetation. There is also a non-contiguous depression at the end of a drainage ditch near Lone Tree Way, which exhibits wetland hydrology characteristics. The vegetation composition at this site consists of arroyo willow (*Salix lasiolepis*), tall cyperus (*Cyperus eragrostis*), pennyroyal (*Mentha pulegium*), smartweed (*Polygonum punctatum*), bog rush (*Juncus effusus*), curly dock (*Rumex crispus*), birdsfoot trefoil (*Lotus corniculatus*), rabbitsfoot grass (*Polypogon monspeliensis*), Italian ryegrass (*Lolium multiflorum*), loosestrife (*Lythrum hyssopifolia*), and Davy's century (*Centaurium davyi*).

The second wetland site is located just south of Buena Vista Drive, west of Runway 2-20. This site is made up of two seasonally ponded depressions connected by shallow channels. Although this site was not saturated during the site surveys, it did demonstrate wetland hydrology. The vegetation found at site two included pennyroyal, tall cyperus, rabbitsfoot grass, toad rush (*Juncus bufonius*), curly dock, loosestrife, Italian ryegrass, wiregrass (*Juncus patens*), and California oatgrass.

Watsonville Municipal Airport

Wetlands Map



Source: City of Watsonville

N

Jurisdictional Wetlands

Figure 4.3-3

The third jurisdictional wetland site is located approximately 50 feet northwest of the westerly tip of site one, and consists of a small depression. This site is fed by runoff from areas to the north and west. Wetland species such as Italian ryegrass, dock, tall cyperus, bog and toad rush are found at this site.

Watsonville Slough System

The Watsonville Slough System is the most significant wetland between Pescadero Marsh in San Mateo County and Elkhorn Slough in Monterey County. The Watsonville Slough System consists of six major branches (Watsonville, Harkins, Hanson, Struve, West Branch of Struve, and Gallighan Sloughs) that contribute to a network of approximately 800 acres of coastal salt marsh, seasonal wetland, freshwater marsh and riparian communities. The Watsonville Slough system provides important foraging, roosting and breeding habitat for both migratory and resident waterfowl species.

Jennings Industrial Park

The proposed Master Plan proposes to construct a new access road that would connect Manfre Road to Buena Vista Drive/Bradford Road, to provide access to commercial/industrial area A. The proposed access road would run through a privately owned neighboring parcel, known as the Jennings Industrial Park (a.k.a. Bergstrom property). A reconnaissance survey was performed along the two proposed road alignments by Laurie Kiguchi in August of 2001, to identify any sensitive species and/or habitats that might be present (**Appendix B**).

The property survey revealed similar conditions to the adjacent portions of Airport property. The majority of the site is a farm field of annual grassland, which is cultivated and harvested for hay. The fields are regularly disturbed by mowing and discing. The far western portion of the study area, west of the proposed access road, is a shallow swale, as identified in Mori's 1998 report.

The grassland areas are dominated by non-native, weedy species, and contain the majority of taxa found at the site. Scrub species were found along the northern boundary fence, and some riparian vegetation was identified near the swale. One single Santa Cruz tarplant specimen was found on the Jennings Industrial Park site, approximately 300 feet east of the eastern proposed road alignment.

Special Status Species

Special Status Plant Species

A survey for special status plants was conducted within the Watsonville Airport study area. Special status plants include species listed as rare, threatened or endangered by the CDFG, species listed as threatened or endangered by the U.S. Fish & Wildlife Service (FWS), and species listed in the *Inventory of Rare and Endangered Vascular Plants of California* published by the California Native Plant Society. These species fall under specific state or federal regulatory authority, and specific mitigation considerations are required for significant impacts to these species.

Biotic surveys of the Watsonville Airport site were initially conducted in 1994 to identify sensitive plant species and communities within the study area (DDA, 1995). The presence of two special status plant species were identified, Santa Cruz tarplant and artist's (also known as Choris's) popcorn-flower (*Plagiobothrys chorisianus* var. *chorisianus*). In April 2001, a population of another special status plant species, the San Francisco popcorn-flower (*Plagiobothrys diffusus*), was also discovered at the Airport site (JGA, October 2001). Each species is further described below.

Santa Cruz Tarplant. Santa Cruz tarplant is listed as endangered under the California Endangered Species Act (CESA), and as a threatened species under the federal Endangered Species Act of 1973 (FWS 1998, 2000). At the present time, Santa Cruz tarplant is known to exist from 12 native populations and eight experimental transplant populations. (JGA, October 2001). The native populations are restricted to the Monterey Bay area (Ibid.) The eight extant experimental transplant populations are located in Contra Costa County and represent the viable survivors of 22 experimental sites in Wildcat Regional Park and on land owned by the East Bay Municipal Utilities District (Ibid.).

Santa Cruz tarplant population at the Airport was first formally documented in 1993 (Morgan 1993), although it is assumed to have been present at the Airport for many years. Five additional population censuses have been performed since then (1994, 1998, 1999, 2000, 2001). The most recent survey in 2001 found nearly 2.5 million plants on approximately 43 acres of Airport property, as summarized on **Table 4.3-2** (JGA, October 2001). A 1998 census identified over 26 million plants.

The Santa Cruz tarplant population at the Watsonville Municipal Airport is the largest extant population, with numbers far surpassing the total of all other populations combined. The six tarplant surveys to date show that the Airport population is thriving and, as expected for annual species, responsive to rainfall patterns (Ibid.). The Airport site has consistently exhibited the highest numbers of tarplant among all extant sites. Although the overall numbers have varied over time, the distribution of tarplant among the planning groups has been fairly consistent (Ibid.). The drop in tarplant acreage in 1999 may reflect habitat loss from the agricultural practice of discing (Ibid.).

Tarplant populations at the Airport have been affected by three main factors: grassland management and relocation activities, rainfall, and fire events. The Watsonville Airport has historically performed maintenance mowing and/or cattle grazing on its grasslands on a year-round basis in order to maintain visual clearance for Airport safety, and to reduce the risk of fire. In 1993, after the presence of Santa Cruz tarplant was brought to its attention, the Airport modified its mowing regime to promote the spread of tarplant by adjusting blade height and timing of maintenance mowing to minimize impacts to the tarplant. In the fall of 1995, Watsonville Airport staff also began a program specifically to establish Santa Cruz tarplant in areas of the Airport where it did not occur. The purpose of this program was to determine the feasibility of relocating tarplant and maintaining relocated populations over time, with the ultimate goal of mitigating for potential loss of tarplant due to Airport expansion (JGA, October 2001).

Table 4.3-2 Santa Cruz Tarplant Summary

	1993		1998		1999		2000		2001	
Planning Area	**Number**	**% Total**	**Number**	**% Total**	**Number**	**% Total**	**Number**	**% Total**	**Number**	**% Total**
Perm. Ease. Areas PE-1-23	330,106	71.9%	14,611,876	52.5%	6,386,607	77.8%	2,828,352	69.9%	1,929,193	77.4%
Tarplant Areas TP-1-3	10,000	2.2%	127,560	0.5%	36,861	0.5%	70,452	1.8%	58,430	2.3%
Temp. Ease. Conting. Areas TE-1-3	2,000	0.4%	0	0.0%	59	0.0%	6,001	0.1%	37	0.0%
Misc. Areas M-1-5, undesig.	500	0.1%	0	0.0%	0	0.0%	1,523	0.0%	1,370	0.1%
Temp. Ease. Areas TE-A - TE-D	82,022	17.9%	11,197,012	40.1%	1,398,348	17.0%	908,543	22.4%	377,039	15.1%
Taxiways	30,528	6.7%	1,810,544	6.5%	293,022	3.6%	211,560	5.2%	117,724	4.8%
Runway	1,293	0.3%	69,850	0.3%	29,026	0.4%	2,505	0.1%	1,082	0.0%
Safety Zones	2,551	0.5%	41,200	0.1%	64,862	0.8%	21,104	0.5%	6,590	0.3%
TOTAL	**459,000**	**100.0%**	**27,858,042**	**100.0%**	**8,208,785**	**100.0%**	**4,050,040**	**100.0%**	**2,491,465**	**100.0%**
Total to be Preserved (PE)	**330,106**	**71.9%**	**14,611,876**	**52.5%**	**6,386,607**	**77.8%**	**2,828,352**	**69.9%**	**1,929,193**	**77.4%**
Total Non-Developed (TP,	**12,500**	**2.7%**	**127,560**	**0.5%**	**36,920**	**0.5%**	**77,976**	**1.9%**	**59,837**	**2.4%**
TE-contingency, M)										
Total to be Lost (TE-devel.,TW,	**116,394**	**25.4%**	**13,118,606**	**47.0%**	**1,785,258**	**21.7%**	**1,143,712**	**28.2%**	**502,435**	**20.2%**
RW, SZ, Morgan Area T)										**0.0%**
TOTAL	**459,000**	**100.0%**	**27,858,042**	**100.0%**	**8,208,785**	**100.0%**	**4,050,040**	**100.0%**	**2,491,465**	**100.0%**

	TARPLANT ACREAGE									
	1993		1998		1999		2000		2001	
Planning Area	**Acreage**	**% Total**	**Acreage**	**% Total**	**Acreage**	**% Total**	**Acreage**	**% Total**	**Acreage**	**% Total**
Perm. Ease. Areas PE-1-23	23.07	64.0%	21.62	49.0%	15.27	52.7%	23.93	56.1%	NA**	NA
Tarplant Areas TP-1-3	0.34	0.9%	0.81	1.8%	0.76	2.6%	0.88	2.1%	NA	NA
Temp. Ease. Conting. Areas TE-1-3	0.36	1.0%	0.00	0.0%	0.00	0.0%	0.01	0.0%	NA	NA
Misc. Areas M-1-5, undesig.	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.06	0.1%	NA	NA
Temp. Ease. Areas TE-A - TE-D	7.64	21.2%	15.99	36.3%	9.91	34.2%	12.85	30.1%	NA	NA
Taxiways	3.85	10.7%	3.83	8.7%	2.16	7.5%	3.46	8.1%	NA	NA
Runway	0.25	0.7%	0.62	1.4%	0.54	1.9%	0.70	1.6%	NA	NA
Safety Zones	0.54	1.5%	1.24	2.8%	0.31	1.1%	0.81	1.9%	NA	NA
TOTAL	**36.05**	**100.0%**	**44.11**	**100.0%**	**28.95**	**100.0%**	**42.70**	**100.0%**	NA	NA
Total to be Preserved (PE)	**23.07**	**64.0%**	**21.62**	**49.0%**	**15.27**	**52.7%**	**23.93**	**56.1%**	NA	NA
Total Non-Developed (TP,	**0.70**	**1.9%**	**0.81**	**1.8%**	**0.76**	**2.6%**	**0.95**	**2.2%**	NA	NA
TE-contingency, M)										
Total to be Lost (TE-devel.,TW,	**12.28**	**34.1%**	**21.68**	**49.2%**	**12.92**	**44.7%**	**17.82**	**41.7%**	NA	NA
RW, SZ, Morgan Area T)										
TOTAL	**36.05**	**100.0%**	**44.11**	**100.0%**	**28.95**	**100.0%**	**42.70**	**100.0%**	NA	NA

*The apparent precision of the abundance totals is due to the combination of estimates in large areas and precise counts in small areas.

**NA = not available; data in preparation.

Mowing of the west and northwest Airport areas has been performed by a neighboring farmer under an agreement with the Airport. In the past, selected areas have also been occasionally disced. Although it is possible that discing can sometimes be beneficial in establishing tarplant, this practice can be detrimental to established tarplant and coastal terrace prairie habitats, and has now been banned except for possible use in unoccupied areas as part of mitigation efforts.

Comparison of annual tarplant census data with annual rainfall data, beginning five years before the 1993 baseline survey, suggests that rainfall has a definite effect on tarplant abundance, but may not be the sole correlative factor (Ibid.). Highest tarplant abundance was observed in the highest rainfall year; abundance decreased in subsequent years of lower rainfall (Ibid.).

Areas of tarplant at the Airport have also been subjected to two fire events. The first occurred on October 26, 1996 when a wildfire burned approximately two acres with abundant tarplant in the western half of section TE-C. The fire burned very hot and all vegetation was virtually destroyed, leaving the field bare and black. The second fire took place in June 1997, when a small square area at the far eastern end of PE-15 was intentionally burned for fire control practice. No tarplant had been observed in this area previously. The effects of these fires on the tarplant are unclear. Tarplant has been found in the burned area of TE-C, but is patchy. No tarplant has colonized the burned area of PE-15 (Ibid.).

San Francisco Popcorn-Flower. The San Francisco popcorn-flower (*Plagiobothrys diffuses*) is listed as Endangered under CESA. The San Francisco popcorn-flower population at the Airport was discovered in an April 2001 field visit, and was located just east of the center of permanent easement area PE-14. Several thousand plants were distributed in dense patches within an area measuring approximately 20 ft X 50 ft (1,000 square feet). PE-14 is adjacent to the runway and is regularly mowed; at the time of the field visits, the overall vegetation was less than 6 inches high. San Francisco popcorn-flower was in full bloom in early April, and was drying and going to seed by April 19. No other colonies of the San Francisco popcorn-flower were found at the Airport during the survey (Ibid.).

Artist's Popcorn-Flower. Artist (or Choris's) popcorn-flower (*Plagiobothrys chorisianus* var. *chorisianus*) is a California Native Plant Society (CNPS) List 1B species. The artist's popcorn-flower was documented at the Watsonville Airport in the field survey performed in 1994 (DDA, 1995) It was observed growing in a small area within what is now designated as PE-22, just east of its western boundary with TE-C. A plant survey conducted in April 2001 found the popcorn-flower growing in full bloom in the same location as in 1993. It numbered approximately 200-250 plants in an area measuring roughly 100 ft X 200 ft (30.5 m X 61.0 m). Other suitable habitat at the Airport was searched, but no other colonies of artist's popcorn-flower were found (JGA, October 2001).

Special Status Wildlife Species

Two special-status wildlife species were observed during wildlife surveys conducted at the Airport in 1994: southwestern pond turtle (*Clemmys marmorata pallida*) and loggerhead shrike (*Lanius ludovicianus*) (BioSystems, 1995). A review of special status wildlife species potentially occurring on the project site were reviewed by Bryan Mori in July 2001 (**Appendix B**), and is summarized below. Previous surveys for the federally endangered Ohlone tiger beetle found no evidence of this species on the Airport property (Morgan, 1994).

California Red-Legged Frog. The California red-legged frog (*Rana aurora draytonii*) is a federally listed Threatened species and a California State Species of Special Concern. Five locations of red-legged frogs have been identified within 5 miles of the project site, including the West Branch of Struve Slough, which is approximately 1 mile from the project site (Mori, July 1998). Review of habitat conditions at the Airport property indicate that the upper terrace does not appear to provide breeding habitat for red-legged frogs due to the lack of suitable aquatic conditions at wetland Sites 1, 2 and 3, located in this area (**Figure 4.3-1).** However, wetland Sites 1, 3, and 5 could provide seasonal habitat for red-legged frogs dispersing from elsewhere onto the upper terrace, due to the presence of seasonal water and vegetation cover at these sites (Mori, July 2001). A possible source of dispersing frogs could be the tributary to Harkins Slough (Site 4), as possible breeding habitat was observed in the tributary downstream of the site (Ibid.).

Southwestern Pond Turtle. The southwestern pond turtle (*Clemmys marmorata pallida*) was observed on the site in 1994 at a small pond/wetland/riparian complex located west and downslope of the pistol range (BioSystems, 1995). This species is a California Species of Special Concern. Pond turtles may use the willow riparian corridor along Manfre Road during dispersal from the Harkins Slough watershed, particularly during breeding season “walkabouts”.

Yellow Warbler. Yellow warbler (*Dendroica petechia*) is a California Species of Special Concern. Warblers may nest in the willow riparian corridor along Manfre Road that is at the southwestern edge of the Airport property.

San Francisco Dusky-Footed Woodrat. The San Francisco dusky-footed woodrat (*Neotoma fucipes annectens*) is a California Species of Special Concern. This species may inhabit the willow riparian corridor along Manfre Road that is at the southwestern edge of the Airport property.

Loggerhead Shrike. Loggerhead shrike (*Lanius ludovicianus*) is a California Species of Special Concern. Loggerhead shrikes were observed at several locations around the airport during surveys conducted in 1994 (Ibid.). No shrike nests were identified during any of the wildlife surveys of the Airport. The project site does not appear to provide suitable nesting habitat for this species due to the regular mowing and other management activities currently conducted at the Airport property (Mori, July 2001).

RELEVANT PROJECT CHARACTERISTICS

Planned Airport Improvements and Development

The proposed Watsonville Airport Master Plan identifies specific Airport improvement projects and future development within four planning periods. Future improvements and structural development that could possibly impact biological resources on Airport and surrounding property include:

Phase I	1, 2, 4, 10, 14, 15
Phase II	11, 13
Phase III	15
Phase IV	15, 17, 18
Note: See Section **3.0 PROJECT DESCRIPTION** for a list of all Master Plan projects and their descriptions.	

Areas not proposed for development are listed below:

- PE-1 through PE-23 are permanent easement areas, which will be used for protection of existing sensitive biological resources and for mitigation (in unoccupied areas).
- TP-1 through TP-3 represent three areas that are not designated for development and that support Santa Cruz tarplant.
- The numeric TE designations (TE-1 through TE-3) are areas not designated for development. They serve as contingency areas that will be available for additional mitigation, if needed.
- Areas M-1 through M-5 (2000 and 2001 censuses) are small areas of open ground in the Airport apron; they are not proposed for development.

Tarplant Mitigation Plan

A Tarplant Mitigation Plan has been prepared for the Airport, which is bound separate from this EIR and is on file at the Watsonville Municipal Airport. The Plan outlines a program to mitigate project impacts on the listed Santa Cruz tarplant (*Holocarpha macradenia)* and the sensitive coastal terrace prairie community (JGA, October 2001). The overall goal of the mitigation program is to compensate for the loss of Santa Cruz tarplant and coastal terrace prairie that will result from planned Airport improvements, such that there project implementation results in a net increase in Santa Cruz tarplant. In addition, artist's popcorn-flower will be included in the plant palette for coastal terrace prairie. There are four main requirements that must be met in order to achieve this goal:

1) Designate 25.58 acres of Airport lands as permanent conservation easements, wherein existing habitat of Santa Cruz tarplant and coastal terrace prairie will be protected and managed in perpetuity.

2) Establish and maintain new colonies of Santa Cruz tarplant in permanent easement areas to achieve at least 1:1 replacement of both tarplant numbers (allowing for 20% natural variability over time) and acreage to compensate for that lost by development. Avoid contamination of local gene pools of native vegetation. The mitigation target values will be based on data from the 1993 baseline survey.

3) Establish and maintain 5.54 acres of coastal terrace prairie in permanent easement areas to achieve at least 1:1 replacement of habitat lost to development. Avoid contamination of local gene pools of native vegetation by re-planting with seed stock from on-site. The 1998 baseline survey of coastal terrace prairie acreage will provide the basis for determining mitigation target values.

4) Design and implement a program for maintenance and protection of Airport lands, including but not limited to permanent easement areas. The program will describe and formalize grassland management practices (primarily mowing), outline methods to control populations of invasive exotic weeds, and provide protection of sensitive habitat areas.

A program for phasing and future management practices is also outlined in the mitigation plan. In general, it is expected that mitigation areas will be installed and maintained over a five-year period before proposed development areas will be released for construction. Five years is expected to be adequate time to determine the success of the mitigation efforts, taking into account both time to establish the plant species and yearly variation in the density and numbers of tarplant and other annual taxa. The overall mitigation program is anticipated to extend over a 20-year time period.

The Mitigation Plan sets forth specific criteria for propagation, seeding of plants, and a revegetation program. Performance criteria are provided to assess the success of tarplant seed production and replanting, as well as removal of weeds and invasive species. The minimum time required before mitigation can be deemed successful is three years (growing seasons) after planting efforts have been completed. If monitoring data suggest that successful mitigation is demonstrated at three or four years, the Airport may petition the responsible agencies to release the appropriate areas for construction before the proposed five-year period. Annual monitoring will be performed to evaluate when the mitigation requirements for both tarplant and coastal terrace prairie have been met to allow the next scheduled phase to be released.

If a mitigation site fails and remedial measures do not improve the relocation efforts, the Airport may propose either a new on-site mitigation area or withdraw the request to remove tarplant and/or coastal terrace prairie from a proposed construction area. Additional mitigation areas are available in designated contingency areas, and may be used for mitigation and converted into permanent easement. If not needed, the temporary easement designation will be removed. If mitigation success is not achieved within the timeframe of the mitigation plan, the plan and permit compliance dates will be reviewed and renegotiated with CDFG and USFWS.

Wetland Mitigation Plan

A Wetland Mitigation Plan has been prepared for the Airport, which outlines a program to mitigate project impacts on the loss of jurisdictional wetlands, as defined by the COE (JGA, March 2002; **Appendix B**). The overall goal of the mitigation program is to compensate for the proposed fill of approximately 1.47 acres of wetlands that will result from planned Airport improvements by replacing them at a 3:1 ratio.

The site for the creation of new wetlands has already been designated on a 13 acre parcel owned by the Airport. The site is located within Harkins Slough, just south of Highway 1. The creation of the new wetlands will occur in three phases: site preparation, revegetation, and monitoring and maintenance.

The proposed mitigation site lies at a relatively low elevation, and thus will not require extensive grading. Prior to agricultural uses of the property, the area had been part of the Harkins Slough wetland. Some minor soil contouring will occur to create the lower elevation riparian inundation area and the slightly higher elevation seasonal wetland. A portion of the Harkins Slough waterway will be realigned to a more natural sinuous channel, with an outlet structure constructed at the south end. Finally, a berm will be constructed from the existing farm access road to function as a water control structure to prevent flood waters from entering adjacent parcels.

The reestablishment of wetland vegetation is expected to happen naturally after the site has been restored. However, in order to increase the speed of revegetation, provide substantial plant diversity, and to prevent the establishment of non-native invasive species, active revegetation will take place as part of the mitigation plan. An attempt to restore the site to its historical wetland state will be made by planting some species which have been extirpated in the Watsonville Sloughs. A list of the recommended plant species can be found in the Wetland Mitigation Plan (**Appendix B**).

Monitoring and maintenance will be ongoing for at least a five year period following revegetation of the new wetlands. If performance standards are not met, the monitoring will continue beyond the five year period. Maintenance practices will include inspection and repair (if necessary) of hydraulic structures, inspection of vegetation, erosion control, trash and debris removal, and exotic species eradication. The details of the monitoring and maintenance provisions will not be provided until the final construction plans and specifications are complete.

IMPACTS AND MITIGATION MEASURES

Standards of Significance

In accordance with the California Environmental Quality Act (CEQA), State CEQA Guidelines, and agency and professional standards, a project impact would be considered significant if the project would:

- Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or US Fish and Wildlife Service;
- Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local, state or federal regional plans, policies or regulations;
- Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act through direct removal, filling, hydrological interruption, or other means;
- Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites;
- Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance; or
- Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat

Implementation of the proposed Airport Master Plan will not conflict with any local policies or ordinances. There are no known adopted Habitat Conservation Plans for the area. Project impacts on sensitive habitat areas and special status species are addressed below.

Impact 4.3-1: Implementation of the proposed Master Plan would result in a loss of 5.54 acres of sensitive coastal terrace prairie habitat and 12.28 acres of habitat supporting the endangered Santa Cruz tarplant. This is considered a *potentially significant* impact.

Implementation of the Master Plan, including construction of the proposed Airport improvements and future development, will permanently impact portions of the endangered Santa Cruz tarplant population and sensitive coastal terrace prairie habitat at the Watsonville Municipal Airport. The Airport currently supports the largest population of Santa Cruz tarplant known. It is likely that some “islands” of tarplant and coastal terrace prairie species will remain in areas designated for development, however, for purposes of assessing mitigation requirements, it is assumed that total eradication will occur in proposed development areas. The artist's popcorn-flower's and San Francisco popcorn-flower's locations are within permanent easement areas of the Watsonville Airport, and their growing in association with Santa Cruz tarplant provide protection from planned Airport development.

A summary of project impacts by Airport planning area and development phase is shown in **Table 4.3-3**. In general, the phasing was designed to shift heavier impacts to the latter phase of the project, thereby providing time to develop the most effective mitigation techniques. According to the Tarplant Mitigation Plan, the number of tarplants to be impacted ranges from 14,758 (3.3% of the population) in Phase I to 48,039 (10.5% of the population) in Phase IV. Tarplant acreage to be impacted ranges from 2.02 acres (5.6% of the acreage) in Phase I to 4.53 acres (12.6% of the acreage) in Phase IV. Coastal terrace prairie habitat to be impacted ranges from 0.92 acres (4.1% of the acreage) in Phase IV to 2.02 acres (9.1% of the acreage) in Phase III. Total impacts for all four phases combined include a loss of 116,394 tarplant individuals (25.4% of the baseline population), 12.28 tarplant acres (34.1% of the baseline acreage), and 5.54 coastal terrace prairie acres (25.0% of the baseline acreage).
The Tarplant Mitigation Plan proposed as part of the Draft Airport Master Plan includes permanent protection and replacement of impacted coastal terrace prairie and tarplant acreage. The loss of both tarplant individuals and acreage will be mitigated on a 1:1 basis (allowing for 20% natural variability in abundance per CDFG guidelines) in the mitigation areas within the Airport's 23 permanent easements. Per an agreement between Airport and CDFG representatives, project impacts and corresponding mitigation requirements are based on the 1993 baseline survey for tarplant abundance and acreage, and the 1998 survey for coastal terrace prairie acreage (JGA, October 2001). The total loss or amount to be mitigated for all four phases is 5.54 acres of coastal terrace prairie habitat.

The mitigation requirement represents the sum of pre-existing (baseline) tarplant abundance or acreage in the permanent easements, plus the amount required for mitigation. In addition, the mitigation requirement for successive development phases is additive, e.g., for Phase III to be released, the total that had been required for phases I and II must be maintained in addition to the amount required for phase III itself. The target mitigation requirement to release all of Phase I in the year 2000 would be at least 2,672,749 tarplant individuals. Given that the 2000 census data show 2,828,352 tarplant individuals in the permanent easement areas, this target was met in 2000 (Ibid.).

The mitigation areas for the proposed project will be located in the permanent easements on the Airport site, owned by the City of Watsonville, and managed as part of the Watsonville Airport. The permanent easements currently support non-native grassland with some inclusions that support tarplant and coastal terrace prairie. The permanent easement areas of non-native grassland that did not support Santa Cruz tarplant or coastal terrace prairie in the baseline surveys, and that are outside the taxiway/runway maintenance buffers, will serve as mitigation areas. Baseline data show a total of 25.58 acres of such land available for mitigation (Ibid.). Given the mitigation requirements of 12.28 tarplant acres and 5.54 coastal terrace prairie acres, the mitigation areas provide 7.76 acres beyond what is required. The total acreage encompassed by the permanent easements is 67.09 acres.

The permanent easements will be managed simultaneously as preserve and mitigation sites. Areas of tarplant and coastal terrace prairie that currently exist within the permanent easements will be preserved and enhanced. Prior to planting, the current and past distribution of Santa Cruz tarplant and coastal terrace prairie will be analyzed to determine areas suitable for mitigation at that time.

Table 4.3-3 PROJECT IMPACTS BY DEVELOPMENT PHASE								
AIRPORT DEVELOPMENT PHASE*	**PLANNING AREA DESIGNATION**	**AIRPORT PLANNING AREA**	**1993 NO. OF TARPLANTS**	**% OF TOTAL 1993 NO.**	**1993 TARPLANT ACREAGE**	**% OF TOTAL 1993 ACREAGE**	**1998 COASTAL TERR. PRAIRIE ACREAGE**	**% OF TOTAL 1998 ACREAGE**
I	Temp. Ease. - develop.	TE-A	8,695	1.9%	1.50	4.2%	0.97	4.4%
I	Taxiway	TW-2	1,770	0.4%	0.08	0.2%	0.00	0.0%
I	Runway	RW-1	1,293	0.3%	0.25	0.7%	0.00	0.0%
extirpated	Former Tarplant Area	Near TP-1	3,000	0.7%	0.19	0.5%	0.00	0.0%
TOTAL PHASE I			**14,758**	**3.3%**	**2.02**	**5.6%**	**0.97**	**4.4%**
II	Temp. Ease. - develop.	TE-B	3,370	0.7%	1.13	3.1%	0.33	1.5%
II	Taxiway	TW-1	13,394	2.9%	1.16	3.3%	0.86	3.9%
II	Safety Zone	SZ-1	0	0.0%	0.00	0.0%	0.44	2.0%
II	Safety Zone	SZ-3	0	0.0%	0.00	0.0%	0.00	0.0%
TOTAL PHASE II			**16,764**	**3.6%**	**2.29**	**6.4%**	**1.63**	**7.4%**
III	Temp. Ease. - develop.	TE-C	34,282	7.5%	2.90	8.0%	2.02	9.1%
III	Safety Zone	SZ-2	1,980	0.4%	0.21	0.6%	0.00	0.0%
III	Safety Zone	SZ-4	571	0.1%	0.33	0.9%	0.00	0.0%
TOTAL PHASE III			**36,833**	**8.0%**	**3.44**	**9.5%**	**2.02**	**9.1%**
IV	Temp. Ease. - develop.	TE-A1	24,977	5.4%	1.18	3.3%	0.25	1.1%
IV	Temp. Ease. - develop.	TE-D	7,698	1.7%	0.74	2.1%	0.66	3.0%
IV	Taxiway	TW-3	15,364	3.4%	2.61	7.2%	0.01	0.0%
TOTAL PHASE IV			**48,039**	**10.5%**	**4.53**	**12.6%**	**0.92**	**4.1%**
TOTAL IMPACTS			**116,394**	**25.4%**	**12.28**	**34.1%**	**5.54**	**25.0%**
OVERALL TOTAL	Preserv., Misc., Development Areas	All	459,000	100.0%	36.05	100.0%	22.10	100.0%

*Phase I: Expected start date 1995; expected release date 2001
Phase II: Expected start date 2001; expected release date 2006
Phase III: Expected start date 2006; expected release date 2011
Phase IV: Expected start date 2011; expected release date 2014

Successful implementation of the Tarplant Mitigation Plan would result in the 1:1 replacement of impacted habitat. The four-phase approach to project implementation allows impacts to be distributed across the 20-year timeframe. With the exception of Phase I, impacts associated with a particular development phase will be fully mitigated before the areas within that phase are released for construction. Per approval by CDFG, Phase I will be released in advance of mitigation, with Phase I mitigation requirements combined with the requirements for release of Phase II (JGA, October 2001).

Field surveys conducted to date show that the indexed mitigation requirement for tarplant abundance for Phase I was met in 1998, 1999, 2000, and 2001 (Ibid.). The target acreage mitigation requirement for Phase I has not yet been met. This may be due in part to discing done by the neighboring farmer under agreement to perform maintenance mowing. This has since been stopped and it is anticipated that tarplant acreage will be successfully increased in the future. The progress to date provides support for the ultimate success of the proposed mitigation program (Ibid.). If the permanent easement mitigation sites prove to be inadequate or unusable, additional land is available for mitigation use. These contingency areas are designated as TE-1, TE-2, and TE-3. They provide another 18.24 acres of potential tarplant and/or coastal terrace prairie habitat (see Table 3.4 and Figure 14 of the Tarplant Mitigation Plan). If the mitigation is successful in the designated permanent easement areas, these contingency areas will be released at the end of Phase IV.

The proposed access road alignments that traverse the Bergstrom property will not impact the single tarplant specimen found near the site. However, the fact that at least one tarplant was found suggests that the grassland on the property would be suitable tarplant habitat, especially considering the tarplant's abundance in similar adjacent habitat on Airport property. The areas adjacent to the new road alignment should be protected during construction as outlined in the Tarplant Mitigation Plan.

Mitigation

Implementation of the following Mitigation Measure will reduce impacts to a *less-than-significant* level.

4.3-A Implement Tarplant Mitigation Plan, as proposed, upon approval by the California Department of Fish and Game as executed with a Memorandum of Understanding.

Impact 4.3-2: The proposed project would result in the loss of approximately 1.47 acres of jurisdictional wetland habitat, including 1.33 acres of willow riparian wetland and 0.14 acres of seasonal wetland. Due to the recognized sensitivity of these habitats, this is considered a *significant* impact.

Construction of airport-related improvements (Improvement #11—airport hangars) on the airport property in Phase II and future industrial development in Phase III (Improvement #15C) would result in the loss of 1.36 and 0.8 acres of wetland, respectively. A summary of these specific construction projects can be found in section **3.0 PROJECT DESCRIPTION**. A Wetland Mitigation Plan has been prepared John Gilchrist & Associates that proposes a 3:1 replacement of willow riparian and seasonal wetlands.

The site selected for mitigation is on a 13 acre parcel, owned by the Airport, within Harkins Slough. Approximately 4.0 acres of willow riparian wetland will be created, along with 0.45 acres of seasonal wetland on the upper margins of the riparian wetland. All construction for the creation of new wetlands shall take place during the dry season, between April 15th and October 15th.

Monitoring and maintenance of the Mitigation Plan will be ongoing for at least five years following the creation and revegetation of the new wetland areas. Although it is anticipated that all performance standards will be met, the monitoring period may continue beyond the five year period, if necessary.

After the final construction plans and specifications are complete, and pursuant to obtaining a permit under Section 404 of the Clean Water Act, the City shall submit a Wetland Mitigation Plan to the Army Corps of Engineers for approval. The mitigation plan shall include specific success criteria, adaptive management in the case those criteria are not met, and a detailed monitoring plan.

The Santa Cruz County Mosquito and Vector Control District (MVCD) has developed guidelines and best management practices for the creation of wetlands in order to prevent the areas from becoming mosquito breeding grounds. If left unchecked, mosquitoes can pose a nuisance and potential public health hazard. For this reason, the MVCD's best management practices will be integrated into the Wetlands Mitigation Plan.

Mitigation

Implementation of the following Mitigation Measure will reduce impacts to a *less-than-significant* level.

4.3-B Incorporate the MVCD's best management practices for mosquito abatement into the Wetlands Mitigation Plan before final approval and implementation.

4.3-C Implement the Wetland Mitigation Plan, as proposed, upon approval by the Army Corps of Engineers, as executed with a Memorandum of Understanding.

Impact 4.3-3: Development of the non-aviation commercial area on the west side of the Airport could indirectly impact the listed California red-legged frog and other special status species if construction activities are not controlled. This is considered a *significant* impact.

Future commercial/industrial development in Phase IV (Improvement #15d), and the new road extension from Manfre Road is located within the vicinity of drainages and aquatic habitat that may be used for non-breeding purposes by California red-legged frogs and western pond turtles. Additionally the riparian area may provide nesting habitat for yellow warblers and habitat for the San Francisco dusky-footed woodrat, both California Species of Special Concern. The habitat areas are largely protected by the habitat protection/open space designation set forth in the proposed Master Plan, and future development will not result in loss of habitat areas. However, construction activities and timing could result in inadvertent impacts to these species, if they are present during future construction periods.

Other municipalities in the area specify minimum set back distances from riparian and wetland areas to ensure development impacts are reduced, if not eliminated. The County of Santa Cruz requires a minimum set back of 50 feet from all riparian and wetland areas (Santa Cruz County Code 16.30.040). Although the City of Watsonville has not designated a minimum set back, one will be required for the proposed project.

Additionally, the segment of the future road alignment planned from Manfre Road to Buena Vista Drive that is located off of Airport property will require future site-specific review and evaluation of habitat and species impacts at the time a specific alignment is selected. Preliminary reviews indicate that the alignment included in the Master Plan is not located within areas of tarplant populations or wetlands (Kiguchi, October 2001), but this requires further site review when the road construction is designed.

Mitigation

Implementation of the following Mitigation Measures will reduce impacts to a *less-than-significant* level.

4.3-D Require future development in areas near wetlands to be set back a minimum of 50 feet from the adjacent riparian/wetland area (Santa Cruz County Code 16.30.040), and require implementation of erosion control measures during construction to prevent erosion/sedimentation into this area.

4.3-E Prior to construction in area 15d, or construction of the planned new road off of Manfre Road, conduct a pre-construction survey for California red-legged frogs in accordance with USFWS requirements in effect at the time development is proposed. If the species are found, implement construction controls as recommended by the resource agencies designed to prevent injuries to special status species.

4.3-F Require grading activities for future road construction (Manfre Road) and development in area 15d to be conducted during the dry season (April 15 – October 15), when California red-legged frogs are most likely to be found at aquatic sites. Additionally, require all trenches, pits, and the like, to be filled prior to October 15. If construction activities are not completed prior to October 15, require installation of exclusion fences around the remaining work areas to prevent the possible movement and entrapment of frogs in the work areas.

4.3-G Schedule ground clearing and grading for future road construction (Manfre Road) and development in area 15d to occur outside the primary nesting season for yellow warblers (April 15 – July 31), unless a pre-construction survey indicates that nesting is not occurring. If nesting birds are not found, no further action is necessary. If a nesting raptor or special status species bird is found within 300 feet of the development area, construction should occur after the bird has fledged, or consultation should take place with the CDFG to determine whether an appropriate buffer can be established.

4.3-H Prior to construction in area 15d or construction of the planned new road off of Manfre Road, conduct a pre-construction survey for the San Francisco dusky-footed woodrat in accordance CDFG requirements in effect at the time development is proposed. If the species is found, implement a trapping and relocation program as approved by CDFG to prevent injuries to special status species.

4.4 CULTURAL RESOURCES

A preliminary archaeological reconnaissance was performed by Archaeological Consulting in September 2001 (**Appendix C**). The survey included a background records search at the Northwest Regional Information Center of the California Archaeological Inventory, and a field reconnaissance of the project area. The results of that survey are discussed below.

ENVIRONMENTAL SETTING

The project area lies within the currently recognized ethnographic territory of the Costanoan (often called Ohlone) linguistic group. The group followed a general hunting and gathering subsistence pattern with partial dependence on the natural acorn crop. Habitation is considered to have been semi-sedentary and occupation sites can be expected most often at the confluence of streams, other areas of similar topography along streams, or in the vicinity of springs. Also, resource gathering and processing areas, and associated temporary campsites are frequently found on the coast and in other locations containing resources utilized by the group. Factors which influence the location of these sites include the presence of suitable exposures of rock for bedrock mortars or other milling activities, presence of specific resources (i.e., oak groves), proximity to water and availability of shelter. Temporary camps or other activity areas can also be found along ridges or other travel corridors (Archaeological Consulting, September 2001).

An archaeological reconnaissance was conducted on the Airport property, which included a records search and field survey. The records search indicated that there are no archaeological sites recorded within one kilometer of the project area and none have been recorded on the Airport property (Ibid.). In addition, no cultural or historical resources were recorded in the California Inventory of Historical Resources for the project area (Ibid.).

Portions of the Airport property planned for improvements or future development were surveyed. The field survey found no evidence of significant prehistoric archaeological resources (Ibid.).

RELEVANT PROJECT CHARACTERISTICS

The proposed Watsonville Airport Master Plan identifies future facility demands and improvement needs, planning goals within several elements, and specific improvement projects within four planning periods. Future improvements and structural development that may impact cultural resources are listed below. Future structural development could involve some grading and excavation that will be identified at the time site plans are developed.

Phase I	1, 2, 3, 4, 5, 8, 10, 14, 15
Phase II	6, 9, 11, 13
Phase III	9, 15
Phase IV	15, 17, 18
Note: See Section **3.0 PROJECT DESCRIPTION** for a list of all Master Plan projects and their descriptions.	

IMPACTS AND MITIGATION MEASURES

Standards of Significance

In accordance with the California Environmental Quality Act (CEQA), State CEQA Guidelines, and agency and professional standards, a project impact would be considered significant if the project would:

- Cause a substantial adverse change in or impact to the significance of an archaeological or historical resource pursuant to Section 15064.5 of the State CEQA Guidelines;
- Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature; or
- Disturb any human remains, including those interred outside of formal cemeteries.

Impacts and Mitigation Measures

Impact 4.4-1: Future site grading for improvements and development identified in the Master Plan could result in excavation of buried cultural resources previously unknown. This is considered a *less-than-significant impact*.

No evidence of cultural resources were found during the investigation conducted for the project site. However, because of the possibility of unidentified (e.g., buried resources being found during construction), the following is recommended.

Recommendation

No mitigation measures are required, but implementation of the following measure during future construction activities is recommended.

- If resources are identified during grading, halt all work within 50 meters (150 feet) of the find until it can be evaluated by a qualified archaeologist. If the find is determined to be significant, appropriate mitigation measures shall be formulated and implemented.

4.5 TRAFFIC AND CIRCULATION

This section was prepared in consultation with Hexagon Transportation Consultants. The supporting technical traffic data (August 2001) can be found in **Appendix D**.

ENVIRONMENTAL SETTING

Existing Road Network

The existing vicinity road network is illustrated in **Figure 4.5-1** and the main roadways in the project vicinity are described below.

Highway 1 is a 4- to 6-lane north-south freeway that is oriented in an east-west alignment in the vicinity of the airport. Highway 1 extends northward through Santa Cruz and southward through Monterey. Highway 1 has interchanges with Buena Vista Drive, Main Street, and Airport Boulevard, the latter of which provides access to the Airport.

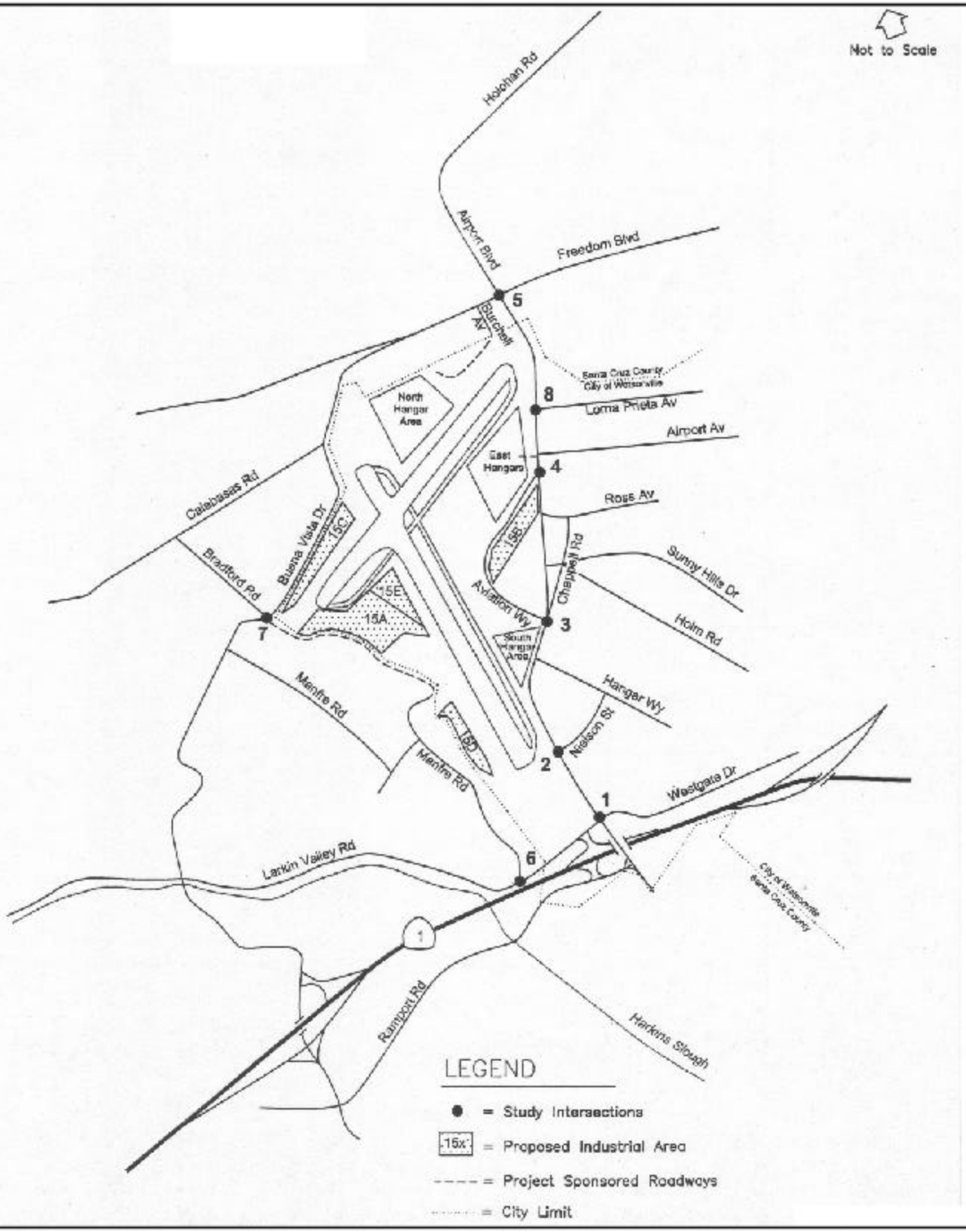
Airport Boulevard is a 2- to 4-lane arterial that connects Highway 1 to the northern and western parts of Watsonville. Airport Boulevard serves mainly adjacent industrial land uses and forms the eastern boundary of the Airport. This is a 4-lane road between Highway 1 and Freedom Boulevard. From Freedom Boulevard north to Highway 152, it is a 2-land road. Bike lanes and sidewalks are provided on Airport Boulevard between Freedom Boulevard and Nielson Road. This section is a 4-lane facility with either a painted or physical median.

Larkin Valley Road is a 2-lane undivided rural roadway that extends to the northwest from Airport Boulevard to Highway 1, north of Mar Monte Avenue in La Selva Beach. Larkin Valley Road has no bicycle or pedestrian facilities. Most of Larkin Valley Road is located in the unincorporated area of the County.

Aviation Way is a 2-lane undivided loop roadway that connects the airport terminal and various airport-related services with Airport Boulevard. Sidewalks are found mainly on the eastern side of Aviation Way. Bike lanes are not designated on this roadway. Aviation way is located within the City limits.

Freedom Boulevard is a 2- to 4-lane arterial that has a parallel alignment to Highway 1. Freedom Boulevard begins at Main Street (SR 152) in central Watsonville and extends to the northwest where it terminates at its interchange with Highway 1 in Rio Del Mar. Within the Watsonville area, Freedom Boulevard generally has four lanes and serves primarily commercial land uses and residential neighborhoods. Most segments of Freedom Boulevard west of Airport Boulevard do not have sidewalks. Freedom Boulevard is located outside of the Watsonville City limit west of Compton Terrace and Emme Street.

SOURCE: Hexagon Transportation Consultants, Inc.



Existing Vicinity Road Network

Figure 4.5-1

Buena Vista Drive is a 2-lane undivided rural roadway that extends between Freedom Boulevard and San Andreas Road. Buena Vista Drive does not have sidewalks, bike lanes, or paved shoulders. This road serves primarily residential neighborhoods and agricultural land uses. Buena Vista Drive is located in the unincorporated area of the County.

Manfre Road is a 2-lane undivided rural roadway that connects Larkin Valley Road with Buena Vista Drive. Manfre Road does not have sidewalks, bike lanes, or paved shoulders. It serves rural residential land uses and provides access for the industrial developments located just west of the Airport property. Manfre Road is located in the unincorporated area of the County.

Existing Traffic Operations and Levels of Service

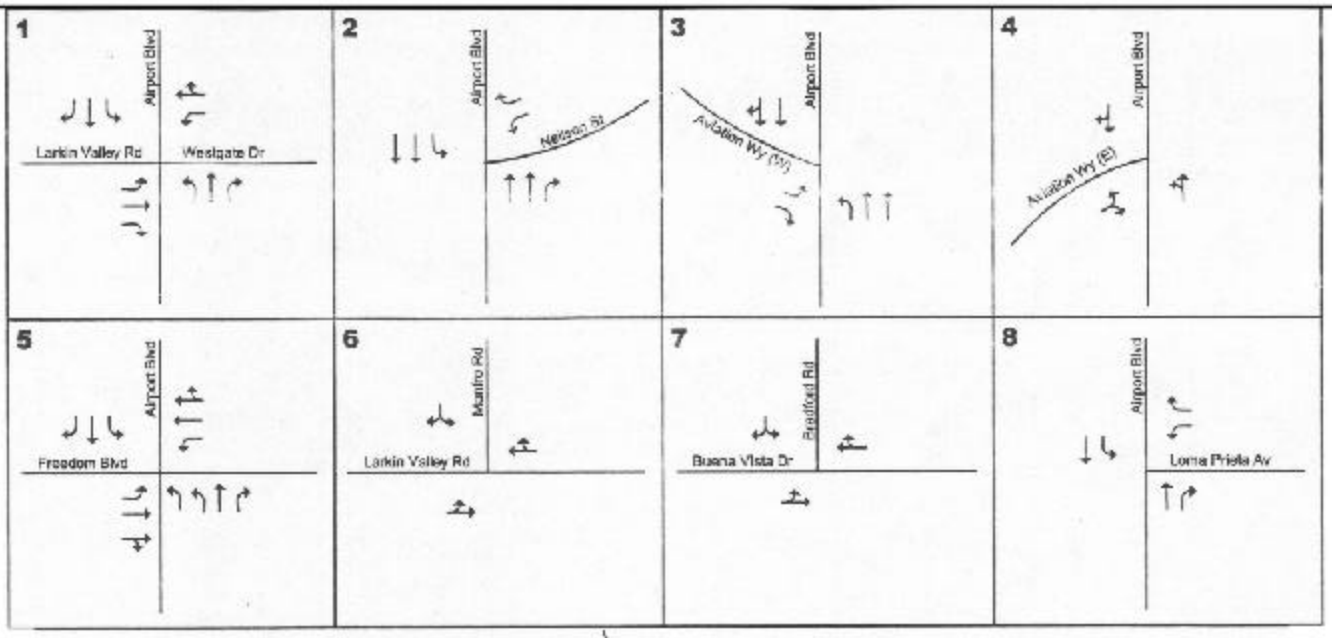
Level of Service (LOS) analyses were performed as part of the project traffic analysis. LOS was evaluated at eight intersections during the PM peak hour. The intersections were analyzed using the *1997 Highway Capacity Manual - Operations* methodology and TRAFFIX software. (See **Appendix D** for further details on LOS methodologies.) **Figure 4.5-2** illustrates the existing lane configurations for the study intersections and existing peak hour traffic volumes.

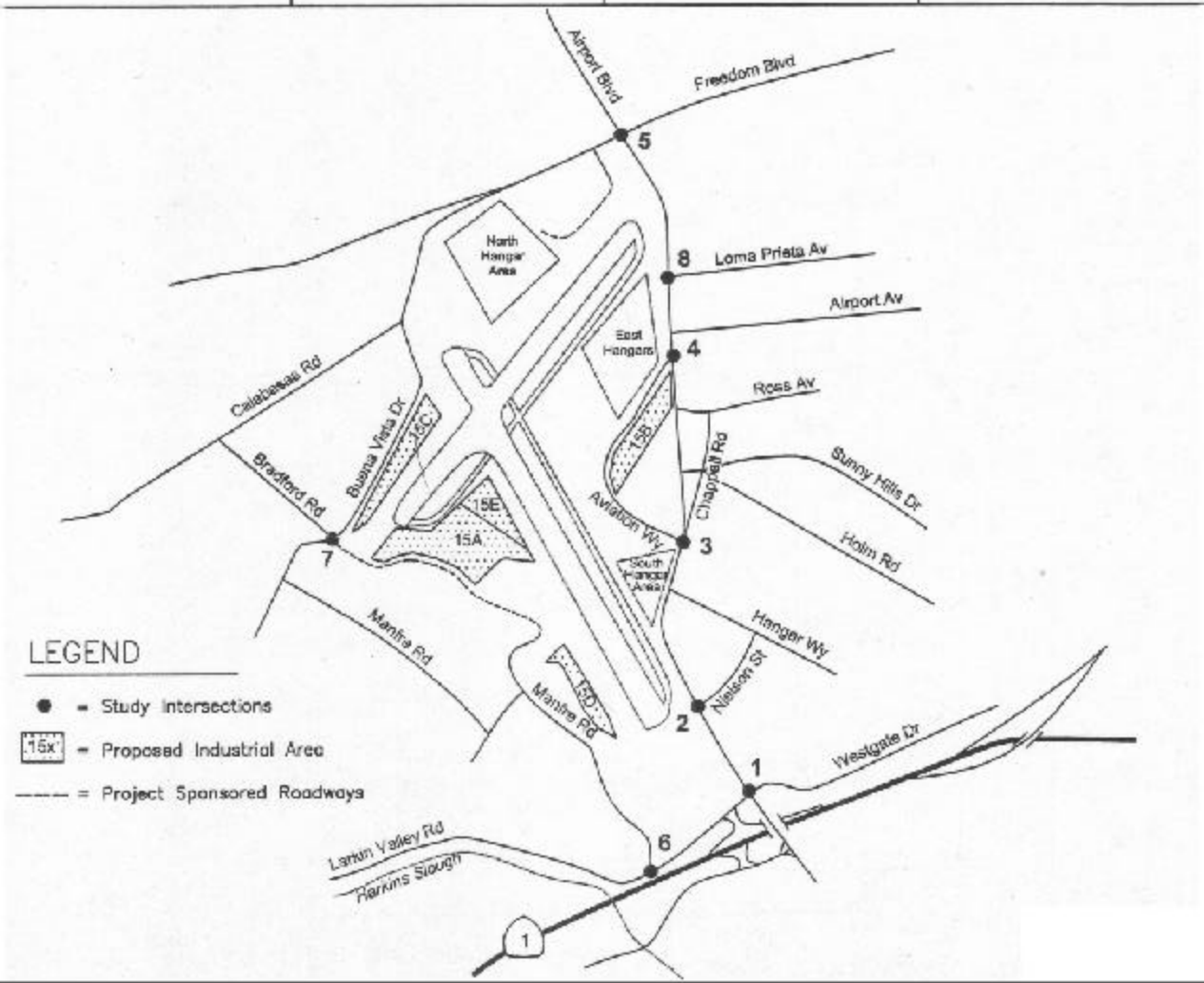
Level of Service is a description of a roadway's operating level ranging from A (representing free flow conditions) to F (representing highly congested traffic conditions with unacceptable delay). Level of Service is used to identify the magnitude of traffic congestion and delay at intersections. The City of Watsonville identifies Level of Service D as the acceptable threshold for traffic operations and congestion. The Manfre Road/Larkin Valley Road and Bradford Road/Buena Vista Drive intersections fall under the jurisdiction of the County of Santa Cruz, which identifies Level of Service C as the acceptable threshold for traffic operations. The Airport Boulevard/Freedom Boulevard intersection was under the jurisdiction of the County when the traffic analysis was completed, but has since been annexed by the City of Watsonville.

The intersections were analyzed during the weekday PM peak hour of traffic (commonly referred to as the evening commute hour), which occurs between 4:00 and 6:00 PM. This period represents the most congested traffic conditions of an average weekday. **Table 4.5-1** summarizes the existing PM peak hour intersection Levels of Service. The results indicate that all of the study intersections currently are operating at acceptable levels of service during the PM peak hour. In addition, none of the unsignalized study intersections require traffic signals under existing conditions.

A number of approved projects are under construction, or will be constructed, prior to implementation of the proposed project. Thus, these projects are considered "background conditions." Background projects are listed in **Appendix D**. Traffic counts for the study intersections were largely conducted in August 1999; therefore, any developments occupied between August 1999 and the date of this study were included as background projects.

The traffic from these projects that are under construction are added to the existing traffic volumes. Intersection LOS conditions with background traffic included the widening of Airport Boulevard that was recently completed. The LOS results indicate that all intersections would operate at acceptable levels under existing plus background conditions.





SOURCE: Hexagon Transportation Consultants, Inc.

Existing Lane Configurations and Peak Hour Traffic Volumes

Figure 4.5-2

The results of the analyses indicate that traffic signals would not be warranted at any of the study locations under existing plus background conditions.

TABLE 4.5-1 Existing Intersection Levels of Service

Intersection	Existing Control	Existing PM Peak LOS/Delay[1]	Existing Plus Background PM Peak LOS/Delay[1]
Airport Blvd./Larkin Valley Rd.	Signalized	B/14.0	B/14.1
Airport Blvd./Neilson St.	Signalized	A/9.4	A/10.0
Airport Blvd./Loma Prieta Ave.	Signalized	A/6.6	A/6.3 [2]
Airport Blvd./Freedom Blvd.*	Signalized	C/27.4	C/28.0
Airport Blvd./Aviation Way (W)	One-Way Stop Controlled	B/14.2	C/14.9
Airport Blvd./Aviation Way (E)	One-Way Stop Controlled	D/26.2	C/21.1
Manfre Rd./Larkin Valley Rd.*	One-Way Stop Controlled	A/9.1	A/9.1
Bradford Rd./Buena Vista Dr.*	One-Way Stop Controlled	A/9.3	A/9.4

SOURCE: Hexagon Transportation Consultants
* Intersection is located within jurisdiction of Santa Cruz County.
[1] For signalized intersections, the average intersection delay is reported and used as the basis for determining impacts. Average intersection delay is based on the weighted average delay (in seconds) for all approaches of the intersection. For one-way stop-controlled intersections, the delay (in seconds) and level of service for the approach with the highest vehicle stopped delay is reported and used as the basis for determining impacts.

Existing Bicycle and Pedestrian Access

Bicycle and pedestrian circulation in the vicinity of the Airport is provided via existing sidewalks and bike lanes on portions of Airport Boulevard. In addition, Aviation Way has sidewalks in most areas. The remaining roadways surrounding the airport do not have designated bicycle or pedestrian facilities. On these roadways, bicycles would share the road with automobiles and pedestrians must walk along the shoulder of the road.

Existing Transit Service

Existing bus service on the surrounding roadway network is provided by the Santa Cruz Metropolitan Transit District (METRO). There are five bus routes that serve two bus stops in the vicinity of the Airport. The Airport Boulevard/Freedom Boulevard stop, and the Watsonville Hospital stop are each approximately three-quarters of a mile from the airport terminal. All five routes have a scheduled stop at Airport Boulevard and Freedom Boulevard. One route, number 81, has scheduled stops at Airport Boulevard/Freedom Boulevard, and at Watsonville Hospital on Nielson Street.

Planned Improvements and Relevant Plans and Policies

Existing Planned Improvements

Caltrans currently does not have any programmed and funded plans for any roadway improvements in the project vicinity. There are also no City planned roadway improvements in the project vicinity.

Long-Term Planned Improvements

City of Watsonville. No long-term improvements have been identified as part of the City's Major Street Master Plan, which was developed as part of the City's General Plan.

Regional Transportation Plan. The *Santa Cruz County Regional Transportation Plan* (RTP) is a long-range planning document addressing all modes of travel. The RTP integrates efficiency and capacity improvements into a comprehensive plan designed to address the major regional transportation problems facing Santa Cruz County. The current 2001 RTP seeks to achieve a transportation system, which utilizes and integrates various modes of travel and maximizes the efficiency of the existing transportation system. The RTP identifies key transportation improvements for short- and long-term implementation. The circulation improvement project elements of the proposed Master Plan are included in the RTP list of projects within projected funds.

Congestion Management Plan. The *Santa Cruz County Congestion Management Program* (CMP), adopted by the Santa Cruz County Regional Transportation Commission in accordance with State law, identified a CMP network, including arterials and intersections, which are considered regionally significant.

The CMP identifies level of service standards for freeways, principal arterials and intersections as benchmarks on which to focus the monitoring and maintenance of acceptable service levels. In accordance with CMP requirements, a "Deficiency Plan" must be prepared which identifies improvements and other trip reduction measures to improve operations to the desired goal for roadway segments or intersections operating below adopted CMP LOS standards.

There are no CMP intersections identified within the project vicinity.

RELEVANT PROJECT CHARACTERISTICS

The proposed Airport Master Plan would result in a future increase in aircraft operations and site development over the next 20 years. The proposed Watsonville Airport Master Plan identifies future facility demands and improvement needs, planning goals within several elements, and specific improvement projects within four planning periods. The following Master Plan projects could impact traffic operations:

Phase I	1, 2, 3, 5, 8, 10, 12, 14, 15
Phase II	6, 11, 13
Phase III	15
Phase IV	15, 17, 18
Note: See Section **3.0 PROJECT DESCRIPTION** for a list of all Master Plan projects and their descriptions.	

Airport access is provided from Airport Boulevard via Aviation Way. Aviation Way is planned for realignment to bring the facility closer to the airport terminal buildings. The Master Plan includes installation of a traffic signal at the easterly intersection of Aviation Way and Airport Boulevard. Two new access roads are planned and shown as "project sponsored roadways" on **Figure 4.5-1**. New access is required for the new fuel tank and future hangars to be located on the north side of Runway 8-26. This will be provided by extending Burchell Avenue approximately 100 feet. Another new road is proposed to service the commercial hangars in the eastern portion of the airport.

Additionally, a new access road is planned along the northwestern perimeter of the airport to allow access to future industrial development areas northwest of runway 2-20, and will connect Manfre Road at the south end and Buena Vista Road on the north end. This road will be designed as a two-lane local industrial street with a 58-foot right-of-way (two 14-foot travel lanes with parking on both sides, landscape strips between sidewalk and curb). The northern portion of the proposed alignment is located on Airport property, and the southern portion is located on private property, part of which supports an existing private road.

Access to the airport terminal and the south hangar area will continue to be provided by Aviation Way. However, the proposed east hangar access road will provide access to the approximately 166 hanger units in the east hangar area. Additionally, the Burchell Avenue extension will provide access to the proposed 100 new hangars and the fuel tanks located on the north part of the airport. The proposed westerly access road will provide access to 149,250 s.f. of the proposed commercial/industrial development space. The southerly portion of Manfre Road will provide access to the westerly access road and 25,000 s.f. of the proposed commercial/industrial development space. Buena Vista Drive will provide access to the proposed westerly access road and 100,000 s.f. of the proposed commercial/industrial development space. Airport Boulevard will provide access to the proposed east hangar access road. Aviation Way will also provide access to 25,000 s.f. of the proposed commercial/industrial development space.

All project streets are planned as two lane facilities of varying widths. The east hangar access road will be 32 feet wide with curb and gutters. The Burchell Avenue extension will be 32 feet wide. Curb and gutters will be added to the realigned Aviation Way; however, the width of the new street is not specified. The westerly access road will be designed as a standard local industrial street with 58-foot right-of-way (two 14-foot travel lanes with parking on both sides and landscape strips between sidewalk and curb). With the construction of the westerly access road, Manfre Road will be upgraded to a standard local industrial street between Larkin Valley Road and the westerly access road.

The project would provide sidewalks along the westerly access road and on Aviation Way in front of the terminal building. Bike lanes are not planned on any of the project roadways.

The parking supply in the airport terminal area will not change under the Airport Master Plan, as there is adequate space for the proposed new facilities. It is assumed that the appropriate amount of parking will be provided in the final designs for each of the individual commercial/industrial developments proposed by the Master Plan.

IMPACTS AND MITIGATION MEASURES

Standards of Significance

In accordance with the California Environmental Quality Act (CEQA), State CEQA Guidelines, and agency and professional standards, a project impact would be considered significant if the project would:

- Cause a substantial increase in traffic in relation to the existing traffic load;
- Exceed, either individually or cumulatively, a level of service standard established by the local agency--LOS D for the City of Watsonville or LOS C for the County of Santa Cruz--or substantially increase the traffic delay for drivers;
- Result in potentially unsafe conditions;
- Increase traffic or result in a roadway design that would increase traffic hazards to motor vehicles, bicycles, or pedestrians; or
- Provide an inadequate amount of parking.

Impacts and Mitigation Measures

TRAFFIC IMPACTS

Impact 4.5-1: Implementation of the proposed Master Plan will result in additional traffic, but will not result in a decrease in Level of Service to unacceptable levels at any intersection. This is considered a *less-than-significant* impact.

Project Trip Generation and Distribution

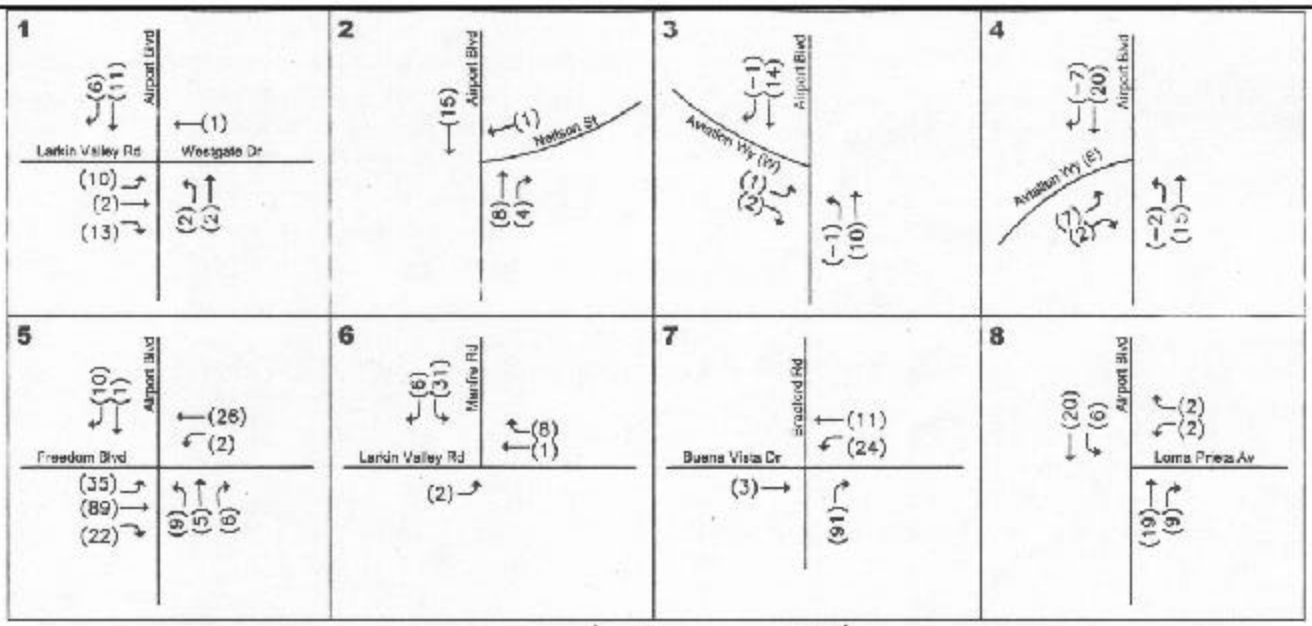
The Master Plan is divided into four 5-year planning periods, or phases. For the purpose of this traffic analysis, the development and improvements occurring in each of the phases were combined and analyzed as one phase. This approach effectively evaluates the traffic impacts of buildout of the Master Plan at full buildout as if it were occurring within the next five years.

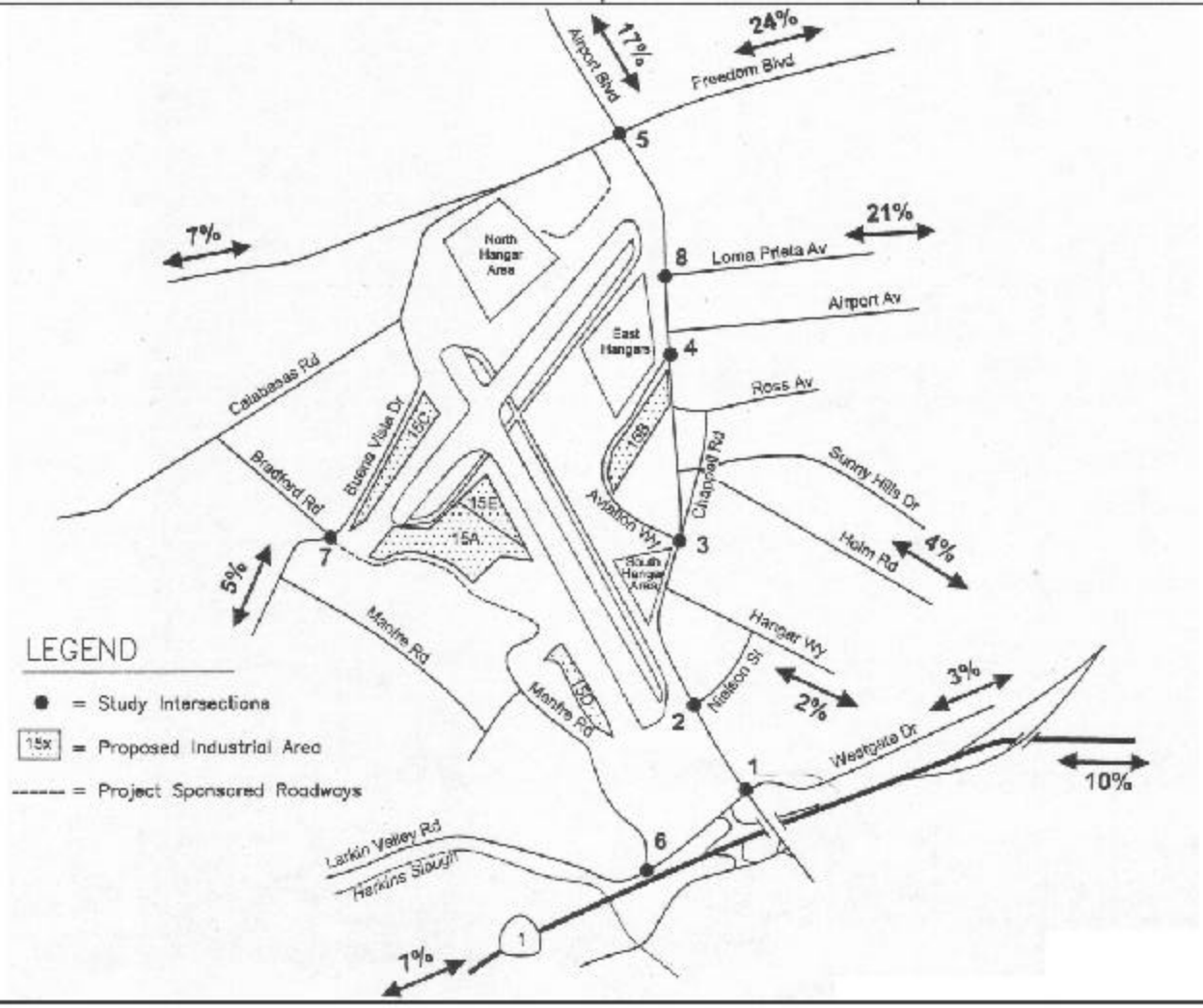
The amount of traffic generated by the proposed airport expansion is a function of two principal factors: (1) the addition of commercial/industrial development on airport property and (2) the expansion of airport facilities and operations. The amount of traffic generated by the commercial/industrial development was estimated by applying the City of Watsonville's industrial park trip generation rate to the size of the development. Based on the City's rates, the commercial/industrial portion of the airport master plan would generate approximately 290 PM peak hour trips.

To ascertain the amount of additional vehicular traffic generated by the airport as a result of expansion of airport facilities and operations, a trip generation survey for San Carlos Airport was consulted. The Institute of Transportation Engineers' Trip Generation Manual does not contain trip generation rates for general aviation airports (such as Watsonville Airport) for the peak hours of commute traffic. Therefore, this survey represents the best data available for such facilities. The San Carlos Airport trip generation survey, conducted in March 2000, links the vehicular traffic associated with the airport to aircraft operations and to the number of aircraft parking spaces (hangar units and tie-downs). It was found that a more conservative estimate of the airport's trip generation was offered by utilizing the trip generation rate with respect to aircraft parking spaces. Based on this rate, Watsonville Airport currently generates approximately 64 PM peak hour trips. Under the proposed Master Plan, Watsonville airport would generate approximately 79 PM peak hour trips, an increase of 15 peak hour trips.

The project trip generation estimates are summarized in **Appendix D**. Implementation of the proposed Airport Master Plan is expected to generate approximately 305 additional trips during the PM peak hour, 68 inbound trips and 237 outbound trips.

The project trip distribution was estimated using the citywide traffic model. The project trip distribution and assignment is shown on **Figure 4.5-3**. The assignment of project traffic was carried out in accordance with this trip distribution pattern. It should be noted that under the current airport configuration, all vehicular traffic must access the east hangar area via Aviation Way. However, under the proposed Master Plan, access to the east hangar area





SOURCE: Hexagon Transportation Consultants, Inc.

Project Trip Distribution and Assignment

Figure 4.5-3

would be possible from Airport Boulevard, via the east hangar access road. Therefore, under project conditions, some existing airport traffic on Aviation Way was reassigned to the east hangar access road to reflect the changes in traffic flow patterns around the airport as a result of the new access point.

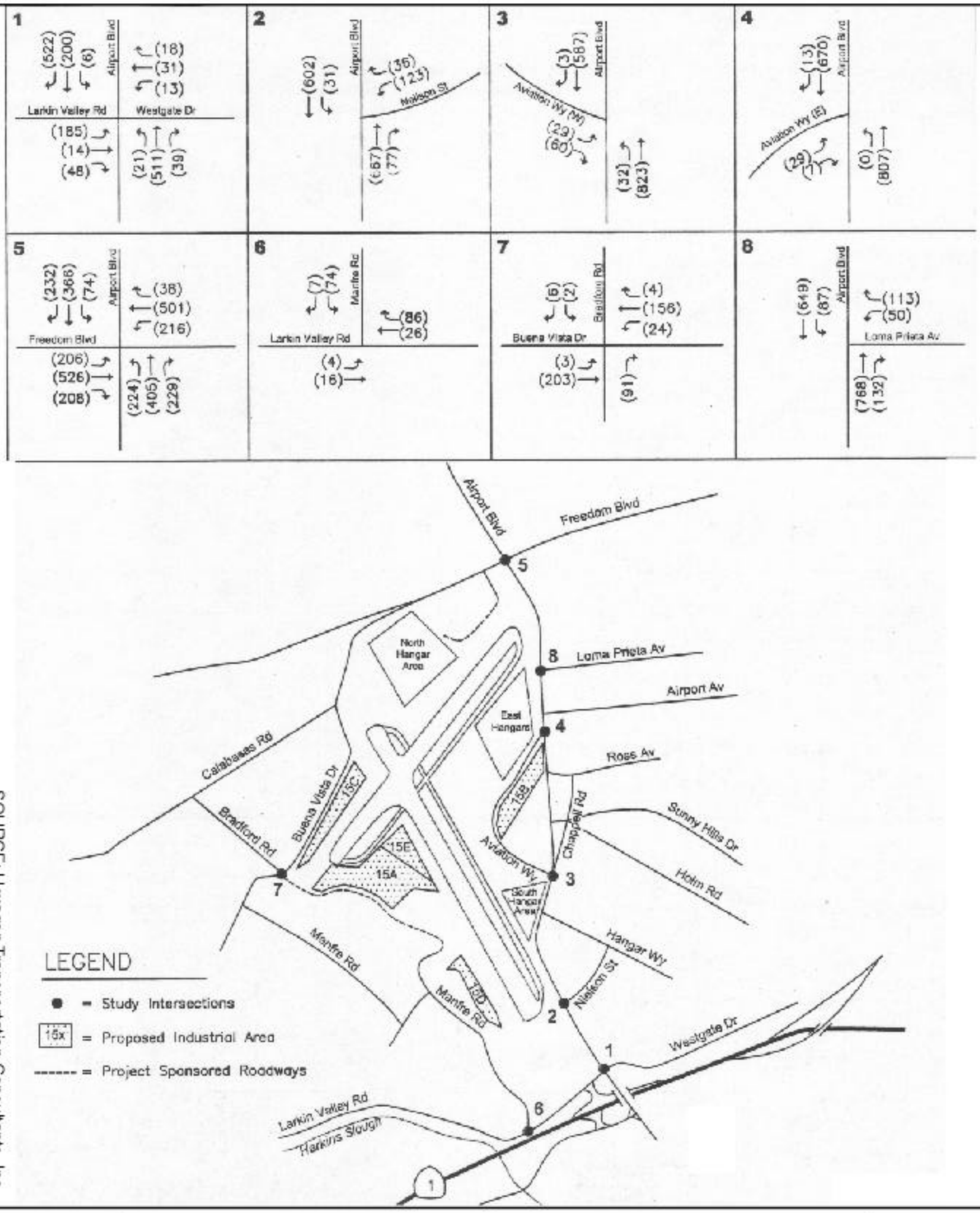
Level of Service Analysis

Project traffic volumes were calculated by adding peak-hour project trips to the background traffic volumes. The PM peak hour traffic volumes under project conditions are shown on **Figure 4.5-4**. Intersection level of service calculations and signal warrant analyses were conducted to evaluate the impacts of the proposed project at the key study intersections. Background conditions served as a base from which the impacts were evaluated.

The results of the level of service calculations are shown in **Table 4.5-2**. The level of service calculation and signal warrant sheets are included in Technical **Appendix D**, and are on file with the City of Watsonville Community Development Department. The results of the intersection level of service analysis indicate that all of the study intersections would operate at acceptable levels of service with the addition of project traffic. Therefore, the project would not cause any level of service impacts. Furthermore, the results of the signal warrant analyses indicate that traffic signals would not be warranted at any of the unsignalized study intersections under project conditions.

The proposed project is projected to cause a change in the level of service rating for one of the study intersections: *Bradford Road and Buena Vista Drive*. However, the change in level of service at this intersection will not cause the intersection to operate at an unacceptable level.

The project will result in a significant increase in traffic at one of the study intersections. Under background conditions, *Buena Vista Drive and Bradford Road* would have a PM peak hour traffic volume of approximately 360 vehicles, including approximately 200 eastbound and 150 westbound vehicles. A new access road will be constructed by the project between Buena Vista Road (at Bradford Road) and Manfre Road. The project will add approximately 129 vehicles to the Buena Vista Drive/Bradford Road intersection during the PM peak hour (36% increase), including approximately 24 westbound left-turns and 91 northbound right-turns. The intersection currently is a “T” intersection and the project proposes to construct the south leg to make it a four-legged intersection with stop control on the north and south approaches (Bradford Road). The project should also construct a left-turn pocket on Buena Vista to facilitate safe and efficient access to the new access road from westbound Buena Vista Drive. Traffic volumes at the intersection under project conditions will be well within the capacity of the intersection. Therefore, this is considered a *less-than-significant* impact.



SOURCE: Hexagon Transportation Consultants, Inc.

Background Plus Project PM Peak Hour Traffic Volumes

Figure 4.5-4

TABLE 4.5-2 Intersection Levels of Service - Background and Project

Intersection	Background LOS/Delay[1]	Background Plus Project LOS/Delay[1]
Signalized Intersections		
Airport Blvd./Larkin Valley Rd.	B/14.1	B/14.6
Airport Blvd./Neilson St.	A/10.0	A/10.0
Airport Blvd./Aviation Way (E)[2, 3]	---/---	A/2.8
Airport Blvd./Loma Prieta Ave.[3]	A/6.3	A/6.4
Airport Blvd./Freedom Blvd.*	C/28.0	C/29.1
One-Way Stop-Controlled Intersections		
Airport Blvd./Aviation Way (W)	C/14.9	C/15.2
Manfre Rd./Larkin Valley Rd.*	A/9.1	A/9.3
Bradford Rd./Buena Vista Dr.*	A/9.4	B/10.1
Airport Boulevard/Aviation Way (E)[2, 3]	C/21.1	---/---

SOURCE: Hexagon Transportation Consultants

* Intersection is located within jurisdiction of Santa Cruz County.

[1] For signalized intersections, the average intersection delay is reported and used as the basis for determining impacts. Average intersection delay is based on the weighted average delay (in seconds) for all approaches of the intersection. For one-way stop-controlled intersections, the delay (in seconds) and level of service for the approach with the highest vehicle stopped delay is reported and used as the basis for determining impacts.

[2] One-way stop-controlled intersection under existing and background conditions; signalized intersection under project and cumulative conditions.

[3] Includes planned improvements under background, project and cumulative conditions.

Recommendation

No mitigation measures are required, but the following is recommended:

- At the time the new western access road is developed, require construction of a left-turn lane on Buena Vista Drive to facilitate safe and efficient access to the new access road from westbound Buena Vista Drive.

ACCESS AND CIRCULATION IMPACTS

Impact 4.5-2: New access points will be added that would slightly change the flow of traffic on the roadways surrounding the airport. This is considered a *less-than-significant* impact.

The proposed east hangar access road will result in the rerouting of some existing airport traffic on Aviation Way to the new access road. This will not result in degradation of traffic operations along Airport Boulevard or Aviation Way.

A new airport access road (for the future north hangars) will be constructed by extending Burchell Avenue to the south. It is projected that an additional 15 PM peak hour trips would result from the extension. The added trips would not impact the traffic operations on Burchell Avenue or Freedom Boulevard.

Recommendation

No mitigation measures are required, but the following is recommended:

- Before final construction plans are completed, require the traffic analysis to be updated so as to include the circulation changes and improvements that have been made since the time of the initial analysis (i.e., changes to Airport Boulevard and cumulative project list).

BICYCLE AND PEDESTRIAN FACILITIES

Bicycle and pedestrian facilities would not be significantly affected by the project. The project would not result in any change to these facilities and the additional demand for bicycle and pedestrian facilities generated by the project could be accommodated by the existing and proposed facilities in the area.

PARKING

Impact 4.5-3: The automobile parking supply would not increase with the addition to the airport terminal building. This is considered a *potentially significant* impact.

The existing terminal building is proposed to be remodeled, and in addition to the existing uses, will include a pilot lounge, a meeting room, and a flight planning area. However, the parking supply is proposed to remain at 137 spaces, even with the expansion to the terminal building. Final designs and plans for the proposed new terminal facilities have not been completed at this time.

Mitigation

Implementation of the following mitigation measure will reduce the impact to a *less-than-significant* level.

4.5-A Adequate vehicle and bicycle parking should be provided in the terminal area in accordance with City of Watsonville parking requirements. Furthermore, parking for the proposed industrial/commercial developments around the airport should be provided in accordance with City of Watsonville parking requirements.

CUMULATIVE TRAFFIC IMPACTS

Impact 4.5-4: Cumulative traffic increases (including the proposed project) will result in additional traffic, but will not result in a decrease in Level of Service to unacceptable levels. This is considered a *less-than-significant* impact.

Cumulative conditions are defined as traffic conditions in the foreseeable future with all approved, pending, and known planned development in place. Cumulative conditions were analyzed for two scenarios: (1) cumulative conditions without project traffic (baseline) and (2) cumulative conditions with project generated traffic. Traffic volumes for baseline cumulative conditions comprise volumes from existing intersection counts plus traffic from approved developments, and traffic from pending and planned developments in the area. Cumulative conditions with project traffic are defined as baseline cumulative conditions with the addition of project generated traffic. This section describes the pending and planned projects included to determine cumulative traffic volumes, and the resulting traffic conditions. **Appendix D** summarizes the list of pending and planned projects assumed for this analysis.

The traffic associated with the cumulative projects was estimated based on Watsonville's trip generation rates. The trips associated with these projects were assigned to the roadway network using traffic distributions for residential and employment based land uses obtained from the Watsonville Traffic Model. Baseline cumulative traffic volumes are shown graphically on Figure 7 in **Appendix D**.

The results of the intersection level of service analysis under cumulative conditions are summarized on **Table 4.5-3**. The results indicate that all intersections would operate at acceptable levels under cumulative conditions with project traffic. The results of the signal warrant analyses indicate that traffic signals would not be warranted at any of the unsignalized study intersections under cumulative conditions with project traffic. Therefore, the project would not cause any significant impacts under cumulative conditions.

TABLE 4.5-3 Future Intersection Levels of Service

Intersection	Existing Control	PM Peak With Project LOS/Delay[1]	Cumulative PM Peak LOS/Delay[1]
Airport Blvd./Larkin Valley Rd.	Signalized	B/14.6	B/17.4
Airport Blvd./Neilson St.	Signalized	A/10.0	A/9.1
Airport Blvd./Loma Prieta Ave.	Signalized	A/6.4 [4]	A/8.1 [2,4]
Airport Blvd./Freedom Blvd.*	Signalized	C/29.1	C/31.5
Airport Blvd./Aviation Way (W)	One-Way Stop Controlled	C/15.2	C/18.0
Airport Blvd./Aviation Way (E)	Signalized	A/2.2 [3,4]	A/2.6 [2, 3,4]
Manfre Rd./Larkin Valley Rd.*	One-Way Stop Controlled	A/9.3	A/9.4
Bradford Rd./Buena Vista Dr.*	One-Way Stop Controlled	B/10.1	B/10.3

SOURCE: Hexagon Transportation Consultants
* Intersection is located within jurisdiction of Santa Cruz County.
[1] For signalized intersections, the average intersection delay is reported and used as the basis for determining impacts. Average intersection delay is based on the weighted average delay (in seconds) for all approaches of the intersection. For one-way stop-controlled intersections, the delay (in seconds) and level of service for the approach with the highest vehicle stopped delay is reported and used as the basis for determining impacts.
[2] Assumes widening of Airport Boulevard that is currently under construction.
[3] One-way stop-controlled intersection under existing and background conditions; signalized intersection under project and cumulative conditions.
[4] Includes planned improvements under background, project and cumulative conditions.

Mitigation

None required.

4.6 AIR QUALITY

ENVIRONMENTAL SETTING

Air Quality Setting

The project location is within Santa Cruz County, in the northeasterly area of the City of Watsonville. Watsonville lies within the North Central Coast Air Basin, where meteorological conditions are influenced by the proximity of the Pacific Ocean and a series of northwest-southeast trending mountain ranges and valleys that parallel the coast.

Ambient Air Quality Standards

Both the U. S. Environmental Protection Agency and the California Air Resources Board have established ambient air quality standards for common pollutants. These ambient air quality standards are levels of contaminants that represent safe levels required to avoid specific adverse health effects associated with each pollutant. The ambient air quality standards cover what are called "criteria" pollutants because the health and other effects of each pollutant are described in criteria documents. The federal and California state ambient air quality standards are summarized in **Table 4.6-1**. The federal and state ambient standards were developed independently with differing purposes and methods, although both processes attempted to avoid health-related effects. As a result, the federal and state standards differ in some cases. In general, the California state standards are more stringent. This is particularly true for ozone and PM_{10} (particulate less than 10 microns in diameter).

Baseline Air Quality

The project site is within the North Central Coast Air Basin, which is comprised of Santa Cruz, San Benito and Monterey Counties and is regulated by the Monterey Bay Unified Air Pollution Control District (MBUAPCD). The MBUAPCD operates a network of monitoring sites throughout the District, including one in Watsonville on Airport Boulevard that measures two pollutants: ozone and PM_{10}. For the last three complete years of data, (1996 - 1998) no violations of the state and federal ambient standards were recorded at the Carmel Valley monitoring site, although exceedances occurred at other Monterey County monitoring sites.

Within the North Central Coast Air Basin, there were 10 exceedances of the state ozone standard in 1998, one (1) in 1997 and 16 in 1996. Exceedances of the state PM_{10} standards were also recorded elsewhere in the MBUAPCD during that period. No violations of the federal ozone standards have been recorded anywhere in the District between 1989 and 1998. In 1997, the EPA adopted new federal standards for ozone, PM_{10} and $PM_{2.5}$. The new eight-hour Federal ozone standard has been exceeded in the North Central Coast Air Basin in the last three years, including six times in 1998.

The NCCAB is currently in attainment for the federal PM_{10} standards and state and federal nitrogen dioxide, sulfur dioxide, and carbon monoxide standards. In March 1997 the air basin was redesignated from a "moderate non-attainment" area for the federal ozone standards to a "maintenance/attainment" area. The NCCAB is classified as a non-attainment area for the state ozone and PM_{10} standards.

TABLE 4.6-1 Federal and State Ambient Air Quality Standards

Pollutant	Averaging Time	Federal Primary Standard	State Standard
Ozone	1-Hour 8-Hour	-- 0.08 PPM	0.09 PPM --
Carbon Monoxide	8-Hour 1-Hour	9.0 PPM 35.0 PPM	9.0 PPM 20.0 PPM
Nitrogen Dioxide	Annual 1-Hour	0.05 PPM --	-- 0.25 PPM
Sulfur Dioxide	Annual 24-Hour 1-Hour	0.03 PPM 0.14 PPM --	-- 0.04 PPM 0.25 PPM
PM_{10}	Annual Geometric Annual Arithmetic	-- 50 $\mu g/m^3$ 150 $\mu g/m^3$	30 $\mu g/m^3$ -- 50 $\mu g/m^3$
$PM_{2.5}$	Annual Arithmetic 24-Hour	15 $\mu g/m^3$ 65 $\mu g/m^3$	-- --
Lead	30-Day Avg. Calendar Quarter	-- 1.5 $\mu g/m^3$	1.5 $\mu g/m^3$ --

PPM = Parts per Million
$\mu g/m^3$ = Micrograms per Cubic Meter

Air Quality Planning

The Monterey Bay Unified Air Pollution Control District (MBUAPCD) shares responsibility with the California Air Resources Board (CARB) and U. S. Environmental Protection Agency (EPA) for ensuring that the State and national ambient air quality standards are met within the basin. The District is responsible for developing regulations governing emissions of air pollution, permitting and inspecting stationary sources, monitoring air quality and air quality planning activities. Federal-mandated air quality planning is regulated by the Clean Air Acts Amendments of 1990 (CAAA).

The District adopted an *Air Quality Management Plan* (AQMP) in 1991 and 1994 to address attainment of the state air quality standards, and recently updated this plan in 2000. The 1991 and 1994 AQMPs relied on implementation of Trip Reduction Ordinances to meet requirements. More recently, mandatory Trip Reduction Ordinances are prohibited by State law and can no longer be used to meet requirements. The California Air Resources Board indicates that a 20% reduction in 1987 ROG and NO_x was needed by 1997 to meet the ozone standard. ROG emissions have been reduced by 36% and NO_x emissions by 26% in this ten-year period in the region.

RELEVANT PROJECT CHARACTERISTICS

The proposed Watsonville Airport Master Plan identifies future facility demands and improvement needs, planning goals within several elements, and specific improvement projects within four planning periods. Aircraft based at the Airport are estimated to increase from 308 to 347 by the year 2020, with annual aircraft operations increasing from 122,890 to 137,923. No new stationary sources of air pollution are proposed as part of this project. The Master Plan projects that may air quality include:

Phase I	1, 2, 3, 4, 5, 8, 10, 14, 15
Phase II	6, 9, 11, 13
Phase III	9, 15
Phase IV	15, 17, 18
Note: See Section **3.0 PROJECT DESCRIPTION** for a list of all Master Plan projects and their descriptions.	

IMPACTS AND MITIGATION MEASURES

Standards of Significance

In accordance with the California Environmental Quality Act (CEQA), State CEQA Guidelines, and agency and professional standards, a project impact would be considered significant if the project would:

- Violate any air quality standard or contribute substantially to an existing or projected air quality violation;
- Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors);
- Result in the generation of 150 pounds per day for ROG or No_x, 550 pounds per day of carbon monoxide, and/or 86 pounds per day of PM_{10} (per MBUAPCD thresholds);
- Result in a short-term construction emissions of 82 pounds per day of PM_{10} (per MBUAPCD thresholds) or cause a violation of PM_{10} standards;
- Expose sensitive receptors to substantial pollutant concentrations;
- Create objectionable odors affecting a substantial number of people; or
- Conflict with or obstruct implementation of the applicable air quality plan.

Impacts and Mitigation Measures

The proposed project would not result in creation of objectionable odors or have any stationary sources of air emissions that would expose sensitive receptors to substantial pollutant concentrations. Other impacts are addressed below.

The project would not generate a substantial amount of motor vehicle trips in Phase I and Phase II (see specific projects by phase in section **3.0 PROJECT DESCRIPTION,** and see section **4.5 TRAFFIC AND CIRCULATION**). During phasing of future development, the implementation of the Master Plan is not expected to generate significant additional pollutant emissions.

Impact 4.6-1: Implementation of the Master Plan would result in an incremental increase in regional operational emissions. This is considered a *less-than-significant* project and cumulative impact.

Implementation of the Master Plan would result in an increase of 55 aircraft based at Watsonville Airport, and an increase of 21,613 aircraft operations by the year 2020 (2000 baseline year). Future increased aircraft operations at the Watsonville Municipal Airport would affect regional air quality. Aircraft-related emissions (aircraft exhaust and ground support vehicles) would be increased slightly with the additional operations.

For the purposes of determining the effects of the project on traffic generation, the traffic analysis evaluated traffic impacts of the Master Plan at full buildout as if it were occurring within the next five years, or all in one phase. Implementation of the proposed Master Plan is expected to generate approximately 305 additional trips during the PM peak hour. This amount of additional traffic is not expected to have a significant impact on regional emissions. See also section **4.5 TRAFFIC AND CIRCULATION** for more information on project traffic impacts.

AMBAG considers the proposed Master Plan a commercial/industrial project for determining consistency with the 2000 AQMP. AMBAG analyzes projects for their cumulative effects on regional emissions standards for ozone. Commercial/Industrial projects are evaluated based on the current population of the City compared to the *AMBAG 1997 Regional Population and Employment Forecast*. As the current population is less than the forecasted population, AMBAG determined that the Master Plan is consistent with the AQMP.

Mitigation

None required.

Impact 4.6-2: Project construction involves grading and use of equipment and vehicles with internal combustion engines resulting in air pollutant emissions that would potentially exceed the Monterey Bay Unified Air Pollution Control District thresholds of significance. This is considered a *potentially significant* impact.

The construction projects proposed as part of the Master Plan would include disturbance of topsoil and some grading/earthmoving, and would therefore generate some particulate matter (i.e., dust). The amount of grading and earthmoving required will not be determined until the construction plans for each component are completed.

MBUAPCD's threshold of significance for construction impacts is 82 lbs per day for PM_{10} (particulate matter). Construction activity may result in a potentially significant impact if the emissions exceed 82 pounds per day. According to the MBUAPCD CEQA Guidelines, assuming 21.75 working weekdays per month and daily watering of the site, construction activities will result in significant impacts if 8.1 acres per day are disturbed with minimal earthmoving; a significant impact would result if grading and excavation occurs over 2.2 acres per day.

In addition, implementation of the project would result in temporary emissions of air pollutants from construction equipment and vehicles powered by internal combustion engines. This impact is considered potentially significant because some amount of NO_x, hydrocarbons, particulate matter, sulfur dioxides, and CO would be emitted

Mitigation

Implementation of the following Mitigation Measures will reduce the impact to a *less-than-significant* level.

4.6-A Require implementation of the following dust control measures as a part of future construction projects*:*
- use water trucks and sprinklers as often as necessary to control dust;
- clean all vehicles leaving the work site to prevent dirt and mud from reaching adjacent streets;
- keep street free of dust and dirt;
- cover all material transported in trucks to prevent excessive dust release; and
- minimize vehicle-related dust emissions by reducing the speed of vehicles traveling on exposed surfaces.

4.6-B Restrict grading and earthmoving on the site to less than 2.2 acres of grading or excavation per day (assuming daily watering) unless monitoring shows that PM_{10} levels do not exceed 82 lbs per day.

4.6-C Maintain all construction equipment and vehicle internal combustion engines according to manufacturer specifications.

4.7 NOISE

ENVIRONMENTAL SETTING

Noise is defined as unwanted or objectionable sound. State and local regulations and ordinances define objectionable noise levels and identify land use compatibility standards. A Noise analysis of aircraft/airport operations and related noise levels was performed by Brown-Buntin Associates, Inc. (BBA), and is included in **Appendix E**. The following analysis is based on BBA's report and describes the characteristics of sound, typical noise sources associated with the proposed land uses, and the location of sensitive noise receptors in relation to project improvements.

Characteristics of Sound

The characteristics of environmental noise that are of particular concern are magnitude, frequency, temporal distribution, and time variance (Manual of Transportation Engineering Studies, Institute of Transportation Engineers, 1994). The **magnitude** of variations in air pressure associated with sound waves results in the quality commonly referred to as "loudness". Variations in loudness are measured in decibels (dB). The dB scale is logarithmic, which means that a sound ten times more intense than 1 dB has a sound level of 10 dB, a sound 100 times more intense than 1 dB has a sound level of 20 dB and so on.

The second characteristic of sound is **frequency**. The human ear responds to sounds whose frequencies are in the range of 20 hertz (Hz) to 20,000 Hz. Within the audible range, subjective response to noise varies. People generally find higher-pitched sound to be more annoying than lower-pitched sounds. Sound-level measuring equipment is calibrated to emphasize various frequency ranges through "weighting". The A-weighted scale represents overall sound levels correlated with the frequency response of the human ear and is expressed in dB.

Temporal distribution of noise is important because time that noise occurs affects the perception and effect of that noise on the receiver. Noise levels acceptable at one time of day or day of the week may not be acceptable at another time. The Community Noise Equivalent Level (CNEL) and Day-Night Average Level (Ldn) are noise indices that attempt to take into account differences in intrusiveness between daytime and nighttime sounds. Noises that occur between 10 p.m. and 7 a.m. are assigned a weighting factor of 10 dB. Experience has shown that the two measures are generally interchangeable. Ldn is used by the City of Watsonville.

Existing Ambient Noise Conditions

Ambient noise is defined as the total noise composed of all natural and human-made noise sources that can be considered as part of the existing acoustical environment in the general area. The major sources of noise in the Watsonville area include the airport, local streets and circulation routes (Highway 1), railroad operations, and local industrial/commercial facilities. Noise in the vicinity of the airport and major roadways may exceed health and welfare criteria for noise exposure for sensitive land uses. In general, sensitive land uses include residences, transient

lodging, schools, libraries, churches, hospitals, and nursing homes. The proposed project is located adjacent to sensitive receptors such as residential units and the Watsonville Community Hospital. A Coastal Development Permit has been issued by the City for a new high school to be constructed at a site approximately one mile south of the Airport.

Noise contours have been prepared as part of the Draft Watsonville Municipal Airport Master Plan. The noise study used the FAA's Integrated Noise Model (INM), Version 3.9 to perform calculations and produce contours of equal noise exposure. The primary purpose of establishing the noise contour maps is to provide the City of Watsonville with a means to plan for the compatibility of projected land uses with the expected noise environment.

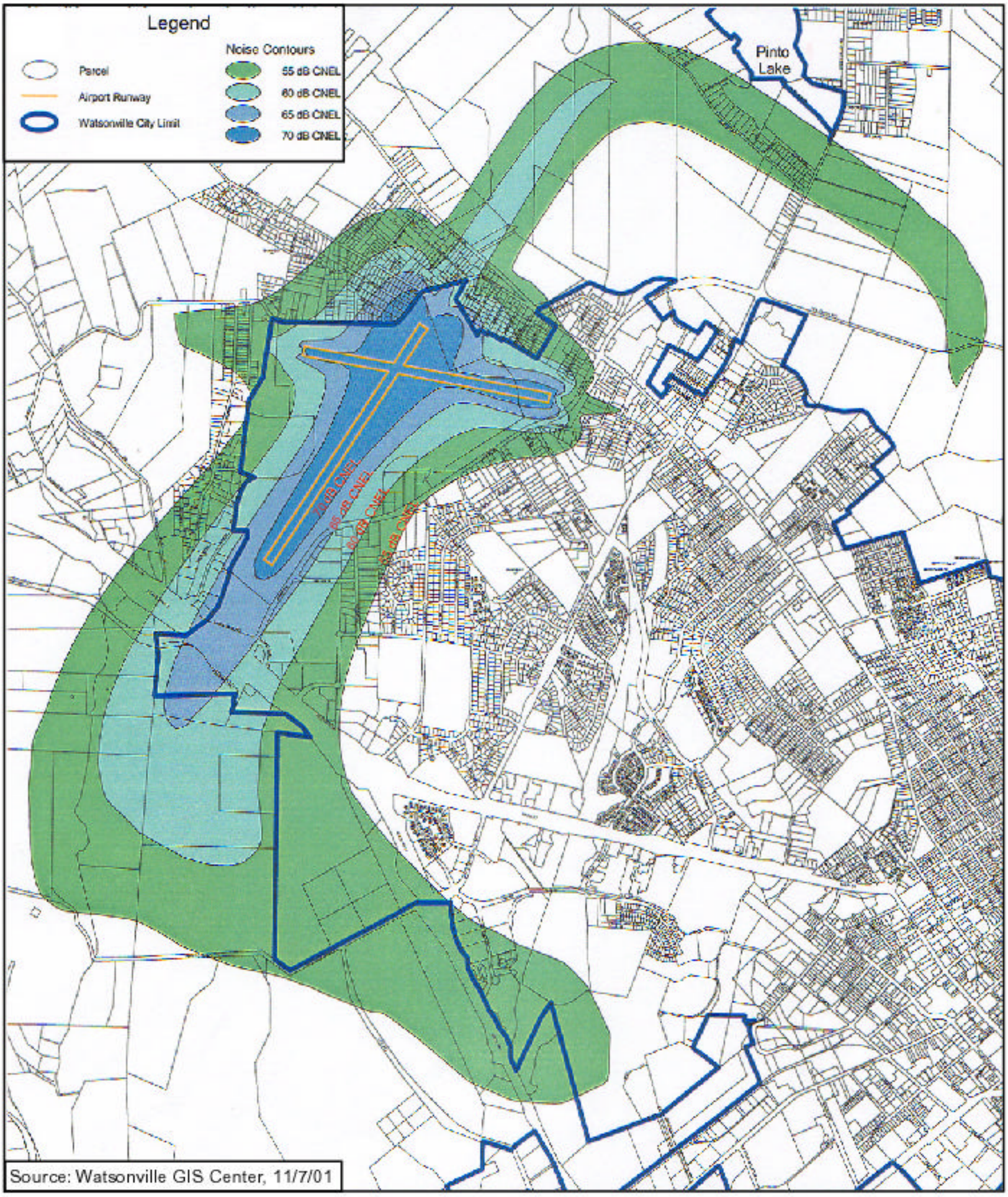
The noise modeling has several key variables such as existing and forecast activity levels, aircraft types, time of day operations, flight tracks, and flight procedures in use. **Figure 4.7-1** provides the existing 2000 noise exposure map for airport operational conditions. As indicated, the residences surrounding the project site experience varying levels of noise depending on the distance from the airport. The majority of the surrounding areas experience noise levels substantially less than 65 dB. Currently, some residential units north of the runways are within the 65 CNEL dB contour. A few residential units located southwest of the airport are within the CNEL 60 dB contour; no residential units located southwest of the airport are within the CNEL 65 to 70 dB contour.

As an annual event, the Watsonville Airport sponsors the Watsonville Fly-In Air Show during Memorial Day Weekend. This special event attracts thousands of people to the airport, and noise levels may exceed standards for a short-term period, although this data has not been quantified.

Noise Standards

The authority to establish noise standards for individual aircraft is vested exclusively in the Federal Government. The basic federal legislation is the Federal Aviation Act of 1958. A 1968 amendment to this Act required the Federal Aviation Administration (FAA) to consider noise as a criterion in its certification of aircraft and airports, and directed the FAA to prescribe rules and regulations to provide for the control and abatement of aircraft noise. Under this authority, the FAA has adopted uniform noise emission standards for all aircraft operating in the United States (including small aircraft of the type using the Watsonville Municipal Airport).

These standards are contained in Federal Aviation Regulations (FAR) Part 36 and comprise three different "stages." Stage 1 reflects the older technology turbojet aircraft, Stage 2 is an intermediate stage representing more modern aircraft, and Stage 3 includes the latest engine noise suppression technology. Operations by Stage 1 aircraft have been generally prohibited in the United States since 1985. In 1990, the federal government adopted the *Airport Noise and Capacity Act* (ANCA) to establish a national aircraft policy. The ANCA phased out the relatively noisy Stage 2 aircraft as of January 2001.



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2000 Noise Contours

Figure 4.7-1

Authority to control the manner and distribution of aircraft operations is shared by federal and State agencies. An airport proprietor, such as the City of Watsonville, also has authority in this area, but federal law limits this authority. The FAA's first priority is to ensure that aircraft operations are conducted in a safe manner; therefore, noise regulations that may affect the safety of aircraft operation, such as specifications for climbout procedures or turns, must meet the FAA's tests of safety and compatibility with other aircraft operations in the surrounding airspace.

Even if safety considerations are met, under general principles of federal law, an airport operator cannot impose regulations that affect airport access in an arbitrary, unreasonable, or discriminatory manner; that unduly burden interstate commerce; or that create an exclusive right to operate. The ANCA specifically precludes an airport operator from establishing additional restrictions on FAR Part 36 Stage 3 aircraft, unless the operator demonstrates the feasibility of the restrictions through a detailed cost-benefit analysis, and obtains the approval of the FAA.

Federal Airport Noise Standards: The Federal Aviation Safety and Noise Abatement Act of 1979 granted authority to the FAA to issue regulations addressing airport noise compatibility planning. These regulations, codified in the FAR Part 150, became effective in January 1985. FAR Part 150 sets forth the methods and procedures that are to be followed by those airport operators who wish to prepare noise maps and develop land use compatibility programs.

Federal land use compatibility criteria are set forth in **Table 4.7-1**. Federal funding is provided to the airport operator for this work if the specified methodologies and procedures are followed. Once the FAA has approved these maps and programs, the airport operator becomes eligible for federal funding of identified noise control (on-airport) and noise mitigations (off-airport) programs. The FAA indicates that a noise exposure of Ldn 65 dB or less is acceptable for residential uses.

TABLE 4.7-1 Noise Sensitive Land Use Compatibility For Exterior Community Noise Levels

Noise Levels	Compatibility
≤ 60 dB (Ldn)	Normally Acceptable
60 - 70 dB (Ldn)	Conditionally Acceptable
70 - 75 dB (Ldn)	Normally Unacceptable
≥ 75 dB (Ldn)	Clearly Unacceptable

Source: City of Watsonville General Plan, May 1994, compiled by DD&A.

State of California Airport Noise Standards: The California Noise Standards, first adopted in 1972, are enforced by county governments, under the review of the California Department of Transportation (Caltrans) Division of Aeronautics. The criterion noise level of Airport Noise Standards is CNEL 65 dB, and the CNEL 65 dB noise contour developed for aircraft operations at an airport determines the airport's Noise Impact Boundary.

The CNEL 65 dB criterion noise level used in the California Airport Noise Standards is consistent with FAA noise and land use compatibility guidelines. For typical general aviation airports and less noisy suburban or rural settings, a 60 dB standard can be used.

Within the Noise Impact Boundary, the airport proprietor is required to ensure that all land uses are compatible with the aircraft noise environment, or the airport proprietor must secure a variance from Caltrans. The preferred methods for ensuring compatibility involve aircraft noise abatement procedures and preventative land use compatibility planning strategies.

Under the California Airport Noise Standards, residences within the Noise Impact Boundary are deemed incompatible, unless: (1) an aviation easement (an easement which acknowledges the potential for aircraft overflight and consequent noise) for aircraft noise has been acquired by the airport proprietor; (2) the dwelling unit was in existence at the same location prior to January 1, 1989, and has adequate acoustic insulation to ensure an interior CNEL of 45 dB or less in all habitable rooms; (3) the residence is a high rise apartment or condominium having an interior CNEL of 45 dB or less due to aircraft noise in all habitable rooms, and an air conditioning system as appropriate; (4) the airport proprietor has made genuine effort to acoustically treat affected residences or acquire aviation easements, or both, but the property owners have refused to take part in the program; or (5) the residence is owned by the airport proprietor.

The California Airport Noise Standards also specify that schools, hospitals, convalescent homes, and places of worship are incompatible uses within the Noise Impact Boundary, unless the airport proprietor has acquired an aviation easement, or unless the structures have adequate acoustic insulation to ensure an interior CNEL of 45 dB or less due to aircraft noise.

County of Santa Cruz: Santa Cruz County chose to operate with an Airport Land Use Advisory Committee (ALUAC) until 1992, when it was disbanded due to the loss of funding from the State. The County of Santa Cruz and the City of Watsonville have adopted, by resolution, a statement indicating that they can adequately address land use planning issues, and that an Airport Land Use Commission (ALUC) need not be formed (Don French, Airport Manager, November, 1995). The Santa Cruz County General Plan (1994) addresses noise issues through policies and programs designed to minimize land use conflicts.

City of Watsonville: The City of Watsonville has adopted noise guidelines as part of the Public Safety Element of its General Plan. The City of Watsonville noise standards identify the maximum exterior sound level acceptable in residential and noise-sensitive areas (e.g., parks, churches, schools, etc.) as 60 dB (refer to **Table 4.7-1**). If a noise-sensitive development is projected to lie within the 60 dB contour, measures can be taken to minimize noise impacts, such as providing for adequate setback of development from roadways or the incorporation of special designs into the proposed roadway or development site. The maximum allowable interior noise level is 45 dB.

RELEVANT PROJECT CHARACTERISTICS

The proposed Watsonville Airport Master Plan identifies future facility demands and improvement needs, planning goals within several elements, and specific improvement projects within four planning periods. Aircraft based at the Airport are estimated to increase from 326 aircraft in 2000, to 381 aircraft in 2020, with annual aircraft operations increasing from 122,890 to 144,503. The following Master Plan projects could have noise impacts in the project area:

Phase I	2, 3, 4, 5, 8, 10, 14, 15
Phase II	6, 9, 11, 13
Phase III	9, 15
Phase IV	15, 17, 18
Note: See Section **3.0 PROJECT DESCRIPTION** for a list of all Master Plan projects and their descriptions.	

IMPACTS AND MITIGATION MEASURES

Standards of Significance

In accordance with the California Environmental Quality Act (CEQA), State CEQA Guidelines, and agency and professional standards, a project impact would be considered significant if the project would:

- Expose persons noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies;
- Result in a substantial permanent increase in ambient noise levels in the project vicinity (an increase of 3 dBA or greater at noise-sensitive land uses where noise levels already exceed 60 dBA Ldn, or an increase in noise levels of 5 dBA or greater where future noise levels would remain below 60 dBA Ldn);
- Expose persons to or generation of excessive groundborne vibration or groundborne noise levels; or
- Result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project.

Impacts and Mitigation Measures

Impact 4.7-1: The proposed extension of Runway 2-20 would expose existing residences to unacceptable noise levels. This is considered a *potentially significant* impact.

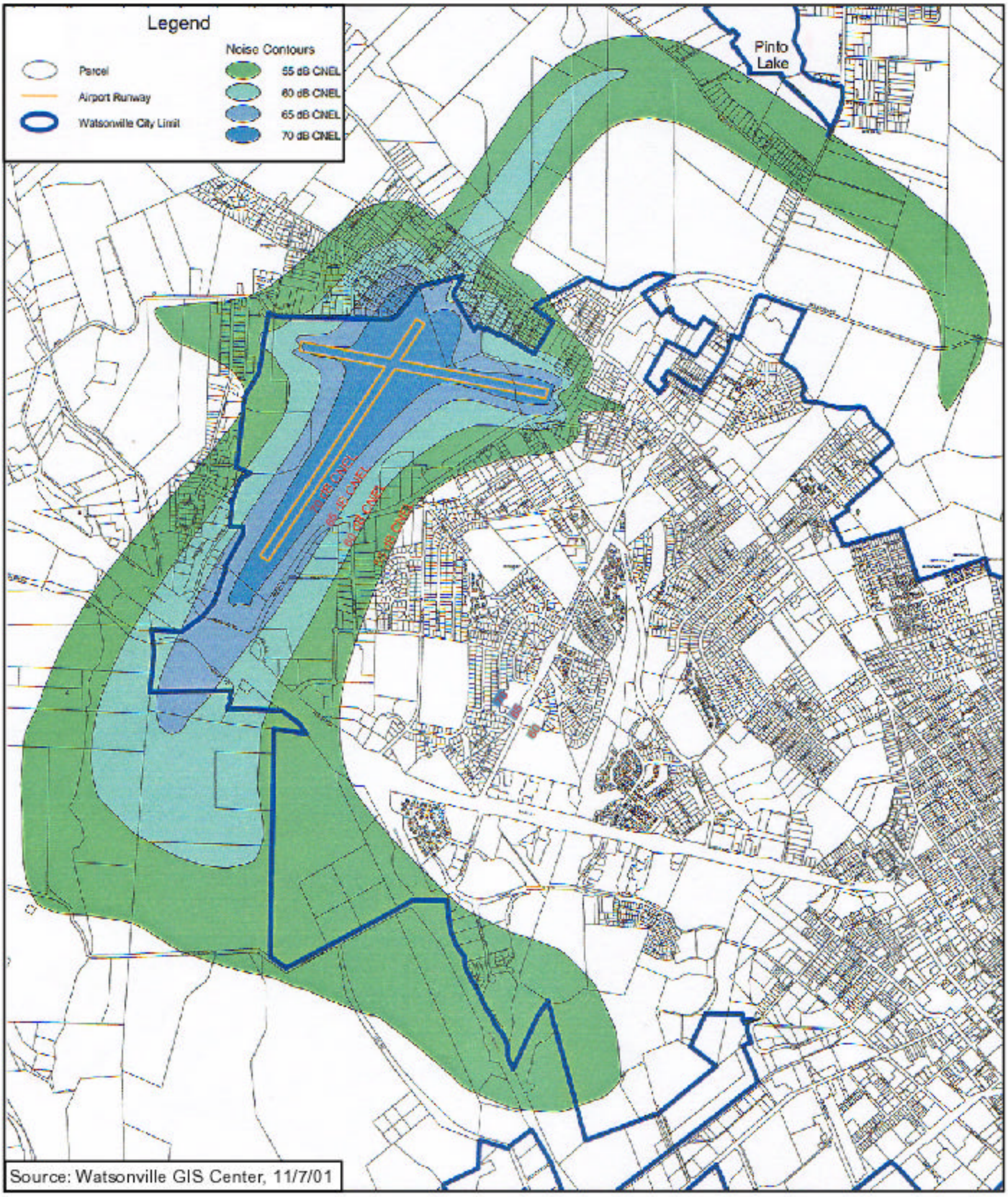
Long-term operational noise impacts associated with the proposed project include an increase of 55 based aircraft and 21,613 aircraft operations by the year 2020, which may result in possible exposure of future sensitive receptors to noise from aircraft. **Figures 4.7-2** and **4.7-3** provide the projected noise contours surrounding the airport with implementation of the Master Plan for the years 2010 and 2020. Currently, there are residences north of the runways that are within the 65 dB contour, although the number has not been quantified. As indicated in the figures, there will be little to no increase in adjacent residential areas to the north that fall within the 65 dB noise contour by the year 2020. Buildout of the Master Plan would not result in impacts to the residential units located north of the airport because noise contours would be similar to the existing 2000 conditions.

The extension of Runway 2-20 by 800 feet may result in an increase in noise to residential units located south of the airport. The CNEL 60 dB contour would extend approximately 1,000 feet farther south along Harkins Slough. One or two additional residential units located south of the highway would be located within the CNEL 60 dB contour in the year 2010.

No residential units located southwest of the airport would be within the 65 or 70 CNEL contour in 2010 or 2020.

The City of Watsonville has approved the construction of a new high school for the Pajaro Valley Unified School District at a site approximately one mile south of the Airport. The site falls outside of the 60 CNEL dB contour, but within the 55 CNEL dB contour. An Environmental Impact Report was prepared for the site in June 2001, which included an analysis of potential impacts from the Airport. It was determined that the noise impacts to the school would be less-than-significant. The EIR for the school site suggested mitigation that would incorporate acoustical insulation in the building plans to insure interior noise levels remain below 45 dB. In addition, the Airport is currently planning on printing noise abatement inserts for the pilot's guides that will request pilots avoid overflying the high school site (French, personal communication, May 2002).

Under state and federal noise and land use compatibility criteria, the buildout of the Master Plan would be considered less than significant. However, under City of Watsonville General Plan and the Santa Cruz County General Plan, impacts of greater than CNEL 60 dB on residential areas would be considered significant, and mitigation measures are required. Under 2010 forecast conditions, it is estimated that two residential units located south of the airport would be located within the 60 CNEL dB contour.



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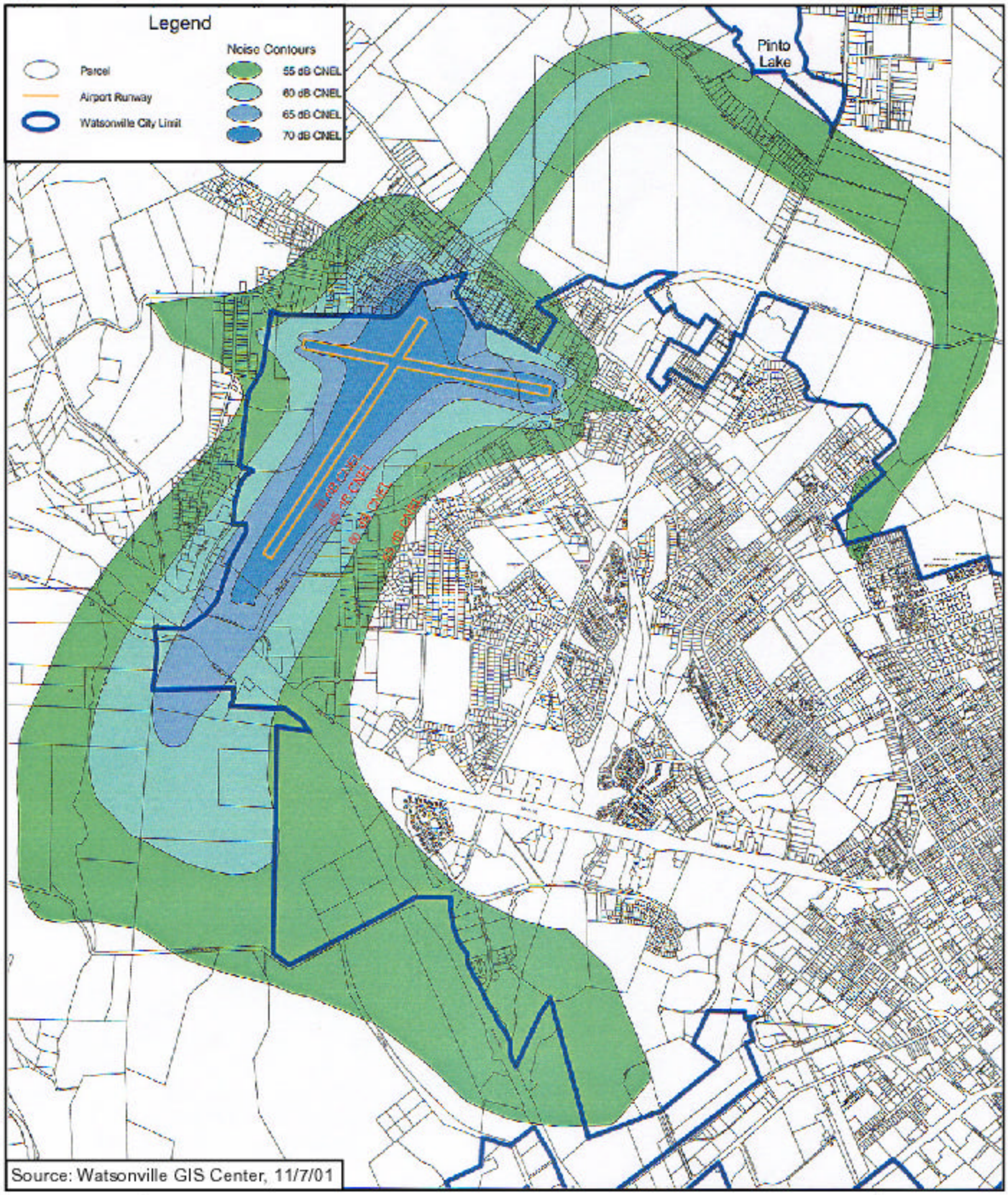
2010 Noise Contours

Figure 4.7-2



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2020 Noise Contours

Figure 4.7-3

Mitigation

Implementation of the following mitigation measures will reduce the impact to a *less-than-significant* level.

4.7-A An acoustical analysis of the existing residential structures that are not now, but would be located within the 2010 CNEL 60 dB contour shall be prepared, subject to the review and approval of the City. With the support of this analysis, the City shall:

- Verify that the structures currently have an average interior noise level of CNEL 45 dB; or
- Ensure that appropriate measures are taken by the City/Airport to modify the structure to reduce the interior noise level to CNEL 45 dB (e,g., with insulation, weatherstripping, and/or double-pane windows); or
- Obtain an aviation easement(s) for the subject properties.

4.7-B The City shall require that any new noise-sensitive development (i.e., residential, schools, churches, etc.) proposed to be constructed within the CNEL 60 dB airport noise contour for the Watsonville Airport, be constructed so as to ensure attainment of an average interior noise level of CNEL 45 dB. The City shall also restrict new development inside the CNEL 60 dB contour to those uses not considered noise-sensitive.

4.7-C The Watsonville Airport plans shall include FAA-approved noise abatement arrival and departure procedures, which shall be made available to all pilots.

Impact 4.7-2: The development of T-hangars in the northeastern portion of the airport may result in an increase in noise impacts to the adjacent residential units. This is considered a *potentially significant* impact.

Implementation of the Master Plan would include the development of corporate hangars in the northeastern portion of the project site. Residential units located along Lone Pine Avenue, Memorial Avenue, Coffee Lane, and Emme Street may be affected by the increase in noise associated with the development of hangars.

Mitigation

Implementation of the following mitigation measure will reduce the impact to a *less-than-significant* level.

4.7-D A landscaped earth berm or sound wall shall be incorporated into the final design of the new hangar development, in coordination with a qualified noise engineer, between the hangars and the residential units in the northeast corner of the project site.

Impact 4.7-3: Existing residences in the vicinity of project construction activities, particularly the residences to the northeast of the project site, could be affected by temporary and intermittent construction-related noise. This is considered a *potentially significant* impact.

Construction noise represents a short-term, intermittent effect on ambient noise levels. Noise generated by construction equipment, including earth movers, material handlers, heavy trucks, and portable generators, can reach relatively high levels. Project construction of corporate hangars and ramps, runway extensions, runway safety areas and installation of underground utilities (power poles) and development of Bradford Road extension in the northern portion of the site could temporarily expose people to increased noise levels from construction equipment and vehicles. Both mobile and stationary construction equipment would generate noise in the northern vicinity of the airport.

According to the U.S. Environmental Protection Agency (EPA), the noisiest equipment types operating at construction sites, comparable to the proposed project, typically are in the range of 88 dB at 50 feet. At 200 feet, construction equipment can generate noise levels from 76 dB to 79 dB. This noise level is not considered to be significant during daytime hours, particularly if the noise source is operated intermittently during the day. Locations farther than 200 feet from the construction site would be exposed to lower daytime construction-related noise levels. At night, when ambient noise levels are generally lower, this level of noise would result in a noise nuisance. Once construction is completed, this noise impact would cease.

Mitigation

Implementation of the following mitigation measures will reduce the impacts to a *less-than-significant* level.

4.7-E Restrict construction within 1,000 feet of noise-sensitive receptors to the daytime period from 7:00 a.m. to 7:00 p.m. In addition, no construction within 1,000 feet of noise-sensitive uses shall be permitted on weekends or on legal holidays. Equipment maintenance and servicing shall be confined to the same restrictions.

4.7-F All construction equipment shall have sound-control devices (i.e. mufflers) that are as effective as those provided on original equipment. No equipment with un-muffled exhaust shall be permitted.

4.7-G All equipment shall comply with any and all federal, State, and local standards for noise control.

4.7-H Equipment mobilization areas, water tanks, and equipment storage areas shall be placed in a central location as far from existing residences as feasible.

4.8 WATER SUPPLY

ENVIRONMENTAL SETTING

Regional Groundwater Conditions

The City of Watsonville and the project site are located within the Pajaro Valley groundwater basin system, which is within the jurisdiction of the Pajaro Valley Water Management Agency (PVWMA). The Agency is responsible for managing area groundwater resources, due in part to existing overdraft and seawater intrusion problems in the area.

The Pajaro groundwater basin covers an area of approximately 120 square miles and contains three distinct aquifers: the shallow Alluvium, the Upper and Lower Aromas Aquifer, and the Purisima Aquifer. The Upper and Lower Aromas Aquifers provide the Basin its primary supply of groundwater. Groundwater recharge to the basin occurs as a result of infiltration from rainfall, seepage of streamflow from the Pajaro River and its tributaries, and percolation of irrigation water (PVWMA, November 1993).

The Pajaro Valley groundwater system is currently in an overdraft state because annual groundwater withdrawals exceed annual recharge. Groundwater pumping in the Pajaro Valley basin is currently at approximately 69,000 acre feet per year (AFY). An additional 2,100 AFY of surface water is also diverted, to account for the total water demand of 71,500 AFY for the basin (BMP, 2002). Over pumping has resulted in a long-term decline in groundwater elevations in the basin with increasing encroachment of seawater intrusion along the coast. Recent studies indicate that the sustainable yield of the groundwater basin, with no seawater intrusion, is approximately 24,000 AFY, resulting in an overdraft of 45,000 AFY. (Ibid.).

Of the water use within the PVWMA jurisdiction, agricultural water use comprises approximately 83 percent of the total, with urban water uses accounting for the remaining 17 percent (Ibid.). These numbers represent a baseline estimation determined by metering (urban), and by analyzing historic water demand required to meet agricultural needs.

The PVWMA prepared a *Revised Basin Management Plan* (BMP, February 2002) to identify "a recommended alternative to balance the groundwater basin and eliminate seawater intrusion in the Pajaro Valley." The proposed alternative contains elements such as water conservation efforts, completion of ongoing water projects, the addition of new pipelines and wells, use of recycled water, acquisition of water from other sources, and watershed management programs.

Study results indicate that, although necessary, water conservation measures and groundwater pumping management alone would not be enough to eliminate the overdraft and seawater intrusion problems. Additional water supply sources are identified by the Revised BMP to help offset the difference. Some of the sources proposed are the Coastal Distribution System, diversion of water from other recharge basins, recycled water from treatment facilities, and seawater desalination.

Municipal Water Supply and Infrastructure

The project would be served by the Watsonville Public Works and Utilities Department (WPWUD), which is responsible for providing potable water service to approximately 14,000 service connections within the city limits and the adjacent unincorporated County area. Approximately 28 percent of the service connections are located outside of the city limits (Swain, personal communication, August 2000).

The City of Watsonville relies primarily on groundwater for its water supply. Included in the water system infrastructure are 12 wells which produce approximately 90 percent of the demand, all located within the Pajaro River Basin. Also included is a surface water treatment plant and eight major reservoirs. Approximately 10 percent of the City's water supply is derived from surface water originating from Browns Valley and Corralitos Creeks (Swain, personal communication, May 2002). The operational capacity of the system is approximately 22,404 AFY. The City currently has an average daily consumption of approximately 7,842 AFY, and a maximum peak daily consumption of 11,202 AFY (Ibid.).

Annual water use at the Watsonville Municipal Airport is approximately 9.50 AFY, or 0.04 percent of the City's water capacity (French, personal communication, May 2002). This estimation is based on the actual water usage from May 2001 through April 2002, and includes all facilities on the Airport property.

The existing water system infrastructure in the project vicinity includes a network of water mains along Airport Boulevard and across Airport property. A 12-inch water main runs from Larkin Valley Road along Airport Boulevard, to a point just before Hangar Way. The line decreases into a 10-inch main and runs northwest to Ross Avenue. From there, an 8-inch water main continues along Airport Boulevard to a point just before Roache Road where it connects to a 14-inch main. The main then connects to the 20-inch line at Freedom Boulevard, and eventually connects to one of the City's wells. There is another 12-inch water main that begins in the vicinity of Nielson Street and Airport Boulevard, runs across Airport property, and ties into a 10-inch main at Buena Vista Drive. According to the Watsonville Public Works Department, there are no existing capacity or pressure issues with these lines (Swain, personal communication, May 2002).

RELEVANT PROJECT CHARACTERISTICS

The proposed Watsonville Airport Master Plan identifies future facility demands and improvement needs, planning goals within several elements, and specific improvement projects within four planning periods. The Master Plan projects that may impact the water supply to the project area include:

Phase I	4, 10, 15
Phase II	11
Phase III	15
Phase IV	15, 17
Note: See Section **3.0 PROJECT DESCRIPTION** for a list of all Master Plan projects and their descriptions.	

IMPACTS AND MITIGATION MEASURES

Standards of Significance

In accordance with the California Environmental Quality Act (CEQA), State CEQA Guidelines, and agency and professional standards, a project impact would be considered significant if the project would:

- substantially increase consumption of limited potable water supplies;
- result in a water demand that exceeds capacity of a water supply or infrastructure system or would require substantial expansion of water supply treatment or distribution facilities; or
- substantially reduce groundwater resources, substantially contribute to groundwater overdraft conditions or substantially interfere with groundwater recharge.

Impacts and Mitigation Measures

Impact 4.8-1: The project would result in an incremental demand for municipal water service. This is considered a *potentially significant* impact.

Future increases in aircraft operations and future development at the Watsonville Airport will result in an incremental increase in demand for water at Master Plan buildout. The proposed Master Plan includes expansion of the existing terminal facilities by approximately 7,000 ft^2 (project 10). Assuming that the water consumption rate per square foot would remain the same as is currently being used, the new terminal facilities would generate an increase in water demand of approximately 14.8 AFY. At buildout, the total amount of water used by the terminal facilities would be 24.3 AFY.

The proposed Master Plan also includes the construction of commercial/industrial uses on 28.6 acres (311,750 ft^2 typical building floor area) of Airport property (projects 15a, 15b, 15c, 15d, and 15e). Although the specific businesses that will occupy these buildings is not known at this time, this analysis assumes they will all be aviation related/compatible. Based on an average water consumption rate of 2,000 gallons per acre of commercial/industrial development per day (City of San Jose Municipal Water, July 2002)[1], the anticipated water demand from new commercial/industrial uses at the Airport is estimated to be 64 AFY.

The total projected increase in water demand from the proposed project would be 78.8 AFY. This would increase the Airport's water consumption to 88.3 AFY, or 0.43 percent of the City's water system capacity. An increase of less than one percent is not a significant impact to the overall City water system. The project related impacts will increase demand on the Pajaro Valley groundwater system, which is currently in an overdraft state. Water conservation efforts and increased use of surface water sources have helped decrease the impacts to the City's water system. According to the WPWUD, growth and new development in the area have not overtaxed the City's water. Even though the City's water system has the capacity to handle the increase in water demand from the proposed project, the amount of groundwater that will be available cannot be projected system (Swain, personal communication, May 2002).

Through cooperative efforts with the PVWMA, the WPWUD is developing water conservation measures and new water sources to ensure an adequate, long-term supply of water is available to the City of Watsonville. Together with the City's proactive program, the following mitigation measures will ensure the water supply impacts from the proposed project will be less-than-significant.

Mitigation

Implementation of the following mitigation measures will reduce the impacts to a *less-than-significant* level.

4.8-A Implement water-conserving fixtures and water conservation practices in landscaping and new commercial/industrial development.

4.8-B Future development of the areas proposed for commercial/industrial uses shall be subject to impact fees assess by the City of Watsonville for necessary improvements to the municipal water system infrastructure.

[1] Comparative data for water consumption rates for commercial/industrial development was not available for the City of Watsonville at this time. The City of San Jose has developed a comprehensive matrix for projecting the amount of water to be used by specific applications. Due to their extensive experience with this type of development, the City of San Jose's projections will be used for this analysis.

4.9 LAND USE

This section evaluates the compatibility of the proposed project with the surrounding neighborhoods and zoning districts. Consistency with the City's General Plan is also evaluated.

ENVIRONMENTAL SETTING

Surrounding Land Uses

The Watsonville Municipal Airport is located in the extreme northwestern portion of the City of Watsonville. To the north of the Airport are mainly low-density residential land uses, with some general commercial, and agricultural further to the north. Industrial and low-density residential uses can be found west of the Airport. To the east is a mixture of land uses consisting of low-density residential, industrial, general commercial, and public/quasi-public. Harkins Slough, Hanson Slough and Gallighan Slough are located south of the airport. The majority of the land uses in the vicinity of the runway approaches to the north, west, and south are agricultural.

The community of Freedom is located adjacent to the Watsonville Airport and consists of 1,037 acres. It is an urbanized community with public services such as schools, a fire station, a post office, and a sanitation district. Freedom Boulevard bisects the community. A portion of Freedom was recently annexed to the City of Watsonville.

Future development in the Freedom area will be planned to be consistent with land use policies associated with the Airport. South of Freedom Boulevard and west of the airport the development potential is constrained by rolling topography. Agricultural uses are found along both sides of Freedom Boulevard north of the airport.

PVUSD New Millennium High School

The Pajaro Valley Unified School District (PVUSD) has proposed that a new high school be built on a 42-acre site approximately one mile south of the Airport. The school site was evaluated for airport safety and noise by the California Department of Education (CDE) based on consultation with the Caltrans Aeronautics Program (CAP) (Jones & Stokes, 2001).

The City of Watsonville was required to make specific findings on the suitability of the school site before issuing a Coastal Development Permit (CDP) to PVUSD (City LCP §9-5.705[c]). The City's findings were based on the documentation received from CDE and CAP on the airport safety and noise evaluation. CAP reported no objections to the proposed school site, with or without the proposed runway extension (see section **3.0 PROJECT DESCRIPTION**, project #2), which subsequently resulted in the City's issuance of the CDP (Jones & Stokes, 2001).

Nine appeals on the CDP were filed with the California Coastal Commission stating issues such as airport safety, non-compliance with the Coastal Act, and preference for alternate sites. The California Coastal Commission found no substantial evidence to support the appeals on October 10, 2001 (PVUSD, October 2001). Construction on the new high school is anticipated to commence sometime during the summer of 2002.

Buena Vista Landfill / Watsonville Sanitary Landfill

The U.S. Department of Transportation (DOT) Order 5200.5A regulates the establishment, elimination or monitoring of landfills, open dumps, waste disposal sites or similarly titled facilities on or in the vicinity of airports. The existence of these types of facilities near airports create high-risk conditions related to aircraft bird strikes. According to this DOT Order, disposal sites will be considered as incompatible if located within areas established for the airport through the application of the following criteria:

- waste disposal sites located within 10,000 feet of any runway end used or planned to be used by turbine powered aircraft;
- waste disposal sites located within 5,000 feet of any runway end used only by piston powered aircraft;
- any waste disposal site located within a 5 mile radius of a runway end that attracts or sustains hazardous bird movements from feeding, water or roosting areas into, or across the runways and/or approach and departure patterns of aircraft.

The Buena Vista /Watsonville Sanitary Landfill, operated by the County of Santa Cruz, is located approximately 5,000 feet southwest of the airport. This landfill has been in operation for over 50 years, and is expected to continue operations for another 20 years (Matthews, personal communication, May 2002). To date, the Watsonville Municipal Airport has reported no accidents related to landfill-associated bird activity.

As the Buena Vista Landfill is one of only two County-owned landfills, the County is currently considering alternate sites for a future landfill. One of these sites is located within 10,000 feet of runway 2-20. This site would constitute an incompatible land use according to the above FAA guidelines. The Airport Manager has brought this matter to the attention of the FAA for their review and input in the County process (French, letter to FAA, May 1, 2002).

On-site Airport Land Uses

Terminal Area: The general aviation area, located in the southeast quadrant of the airport between the two runways, consists of aircraft parking, aprons, hangar areas, Fixed Base Operation areas, a terminal building, an air traffic control tower, fueling facilities, and other aviation-related facilities and services. The terminal and administration building is approximately 4,500 square feet and includes offices and a restaurant. There are 206 T-hangar spaces in the terminal area. North of the terminal building is approximately 19 acres of aircraft parking apron accommodating 202 tiedown spaces.

Airfield Area: The existing Watsonville Airport is comprised of 291 acres of land with two paved runways. The two runways remain in the configuration and length originally constructed. Runway 2-20, oriented roughly northeast-southwest, is the primary runway, 4,501 feet long. The east-west crosswind runway 8-26 is 3,999 feet long.

Runway 2-20 has pilot-controlled medium intensity edge lights. Runway End Identifier Lights are installed on Runway 2. Runways 2 and 20 have Visual Approach Slope Indicators. Runway 8 has a Precision Approach Path Indicator.

There are two automatic controlled access gates to the terminal facilities, one near the T-hangar area and the other near the fuel farm.

RELEVANT PROJECT CHARACTERISTICS

The proposed Watsonville Airport Master Plan identifies future facility demands and improvement needs, planning goals within several elements, and specific improvement projects within four planning periods. The Plan assumes that 80% of the available area will be built out during the timeframe of the Master Plan (2001-2020). Under the phasing plan, Areas A and B would be developed within the next 10 years, and the remainder of the development areas would be developed in the last 10 years. The Master Plan projects that have impacts to land uses in the surrounding area include:

Phase I	2, 3, 4, 8, 10, 14, 15, 16
Phase II	6, 11, 13
Phase III	15
Phase IV	15, 17, 18
Note: See Section **3.0 PROJECT DESCRIPTION** for a list of all Master Plan projects and their descriptions.	

CONSISTENCY WITH AREA PLANS

City of Watsonville General Plan

City of Watsonville General Plan

The City of Watsonville General Plan was adopted in May 1994. The General Plan Planning Area consists of all of the existing city area (3,789 acres), the 1990 Sphere of Influence area (1,000 acres), the unincorporated community of Pajaro in Monterey County (1,000 acres), and a rural portion of Pajaro Valley (12,570 acres) which surrounds the City. The total area of land and water in the Planning Area is 18,359 acres, or 28.7 square miles.

The City of Watsonville General Plan Land Use Diagram designates the project site as Transportation, Communications, and Utilities (TCU) (**Figure 4.9-1**). General categories of allowed uses include: streets and roads, rail transportation and other fixed guideway types of transportation corridors; airports primarily intended for the transport of people, goods and materials, livestock, and agricultural products by public, quasi-public and/or private entities; and utilities. Because of the diversity of uses allowed in these areas, allowed intensities will be determined based on the appropriateness of the location, accessibility, traffic impacts, site conditions, design compatibility with adjacent land uses, natural and built constraints, and community impact.

The Watsonville General Plan delineates the Airport Operations Impact Area and the Airport/Land Use Compatibility Criteria. By controlling land use and density, and limiting high occupancy structures such as schools, hotels, and hospitals, the surrounding population's exposure to airport noise and accident risk will be minimized. Any changes to this plan are required to be approved by the City Council.

Consistency of the proposed project with Watsonville 2005 General Plan Elements are generally described below:

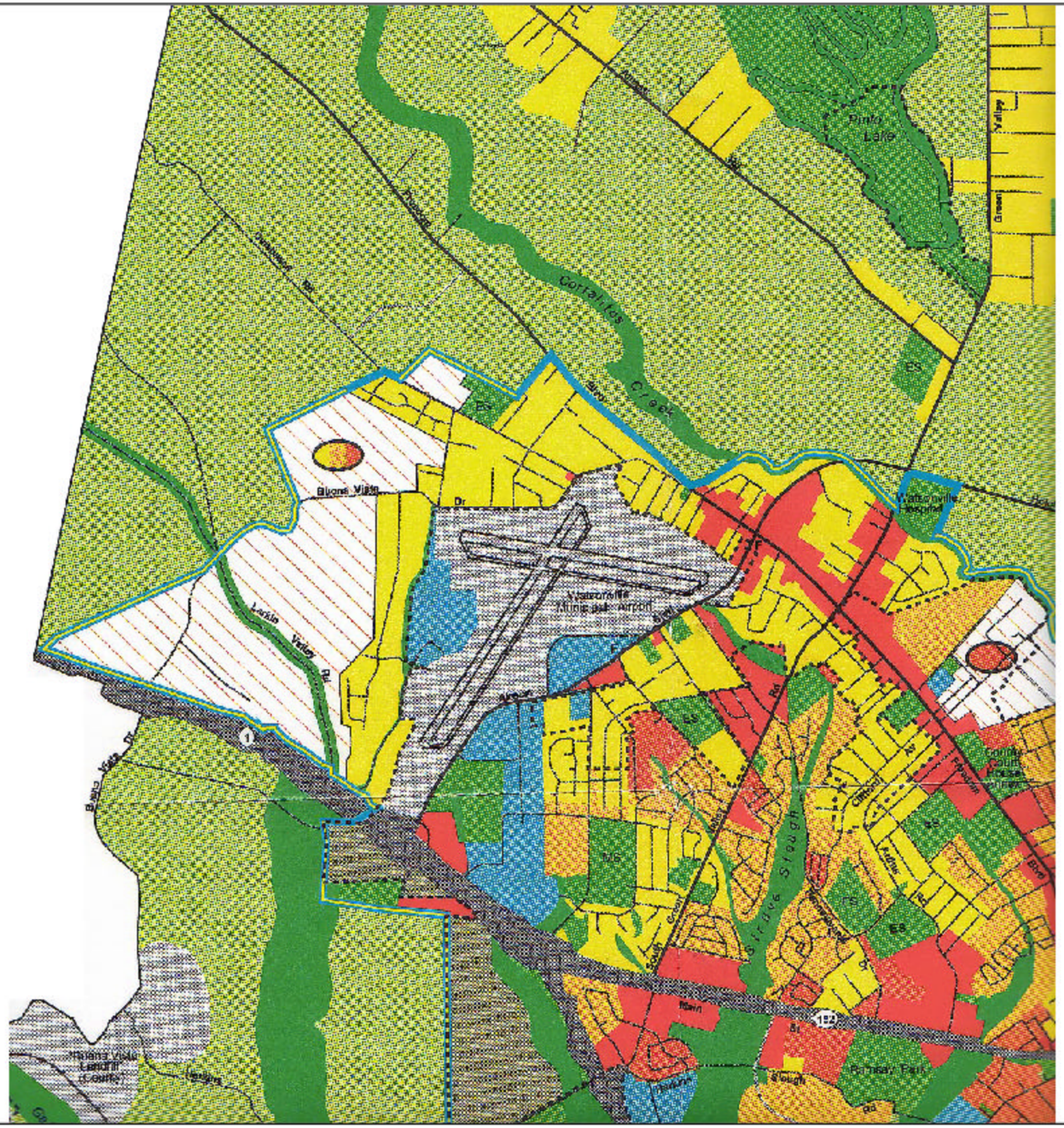
Growth and Conservation: The goals, policies, and implementation measures under this chapter are intended to provide a framework for the management of growth within the existing city and urban limits. Guidelines are also set out for the area within the Planning Area boundary beyond the city. The project does not conflict with the goals, policies and implementation measures of the Growth and Conservation Chapter.

Land Use and Community Development: Goals for land use and community development are a reflection of local issues and long range vision for the future. The goals, policies and implementation measures of this element that could possible be impacted by the proposed Master Plan are discussed below.

Goal 4.7 Land Use Suitability seeks to ensure that the orderly development of land for the needs of the existing and projected population within the City limit and Sphere of Influence is based on the land's overall suitability. The Master Plan would be consistent with this objective, as the City will ensure that compatible land uses will occur in the airport operations impact area.

Implementation Measure 4.A.5. A Specific Plan or Area Plan northwest of the Airport will be prepared by the City. This area is located between Calabasas Road and Buena Vista Drive. The proposed project does not conflict with this measure or any of the existing land uses in the area.

Implementation Measure 4.G.3. This measure the designation of areas with multiple constraints to development as open space. The proposed Master Plan identifies areas within the Airport boundaries that will be designated as open space and placed into conservation easements for the purpose of environmental protection. This action is consistent with the General Plan.



LEGEND:

Residential
- Low Density
- Medium Density
- High Density

Commercial, Office, Industrial
- General Commercial
- Industrial

Open Space, Community Facilities, Agriculture, Coastal Zone
- Greenbelt
- Environmental Management
- Public/Quasi-Public
- Transportation, Communications, Utilities
- Agriculture
- Coastal Zone

Circulation
- State Highways: 1, 129, 152
- Major Roads
- Minor Roads and Streets

Other
- Specific Plan Area

Boundaries and Symbols
- City Limit
- Urban Limit Line
- Planning Area

Source: Watsonville 2005 General Plan, 1994

N

Land Use Map

Figure 4.9-1

Urban Design and Scenic Resources: The City has set up goals for the preservation of the City's rich historical and cultural resources, combined with the preservation of natural beauty and rural back drop of the Pajaro Valley. The proposed project does not conflict with the goals, policies and implementation measures of this chapter.

Housing Element: The City's housing program sets forth appropriate responses to the current and projected housing needs. The City intends to develop, improve, conserve, and preserve safe, affordable housing to meet all the needs of the residents. The City seeks to create a strong, well-balanced economy that includes living-wage employment for the labor force and promotes the development of housing by the private, public, and non-profit sectors within a satisfactory urban environment. The proposed project does not conflict with the goals, policies or implementation measures of the housing element.

Children and Youth: The City is committed to providing and promoting a safe, secure, protective, healthy, and stimulating community environment for its children, youth, and families, and provide opportunities for them to develop to their fullest potential. The proposed project does not conflict with the goals, policies or implementation measures of this chapter.

Recreation and Parks: The City seeks to enhance the quality of life by assuring the provision of services, programs and facilities that reflect the leisure needs and desires of the community. The proposed project does not conflict with the goals, policies or implementation measures of this chapter.

Environmental Resource Management: The City seeks to protect and manage natural resources in a way that allows for human use and interaction, while sustaining the resource. Goals for environmental resource management have been established to preserve the natural resources of the Planning Area. The goals provide for open space, conservation, and limitations on the extent of future urbanization. By identifying and preserving those areas of the Airport that contain sensitive species and habitats, the proposed Master Plan, with mitigation recommended in this EIR, complies with the following goals, policies and implementation measures of this chapter. Please refer to section **4.3 BIOLOGICAL RESOURCES** for further information.

Goal 9.3 Natural Resources. Identify and protect the natural resources of the Watsonville Planning Area.

Goal 9.8 Wildlife Habitat. Preserve and protect the remaining areas of wildlife habitat for their scenic and scientific value.

Policy 9.A Open Space Land Use. The City shall designate land as environmental mangement to protect ecological, scientific, and scenic values.

Implementation Measure 9.A.1 Environmental Protection. The City shall use planning measures, such as an urban limit line, greenbelts, open space zoning, conservation easements, and other tools, to restrict urban development in environmentally sensitive areas.

Policy 9.B Natural Resource Protection. The City shall designate land necessary for the preservation of natural resources and to avoid conflicts with urban land uses.

Implementation Measure 9.B.2 Natural Resource Mitigations. The City shall require implementation of environmental mitigations on projects that may destroy or impair the future use or existence of natural resources.

Implementation Measure 9.B.6 Environmental Review. The City shall conduct an appropriate environmental review process and require that proposed projects adjacent to surrounding, or containing, wetlands be subject to a site-specific analysis which will determine tha appropriate size and configuration of areas to buffer wetlands from urban development.

Policy 9.F Wildlife Habitat Protection. The City shall designate for open space and environmental management those areas rich in wildlife species and fragile in ecological make-up. These habitat zones shall be made part of the greenbelt where appropriate.

Implementation Measure 9.F.1 Habitat Protection. Impacts to important wildlife habitat areas shall be identified as part of the City's development review and environmental review processes, and appropriate mitigation shall be considered. Mitigation measures to be considered include: designation of sensitive areas as open space, restriction of new development on lands that provide important wildlife habitat, setback requirements, habitat conservation plans, and habitat mitigation banking. Lands within the urban limit line that provide important wildlife habitat include, but are not limited to the following:

a. Riparian Corridors
b. Fresh Water Marshes and Sloughs
c. Woodlands and Steep Slopes.

Implementation Measure 9.F.2 Restoration. The City shall support and encourage public and private efforts to restore degraded natural habitat zones and, when possible, to acquire them for preservation.

Implementation Measure 9.F.2 Fish and Game Consultation. The City shall refer development proposals to the California Department of Fish and Game for its recommendations on conservation measures for native plant communities, riparian vegetation, wildlife habitat, and wetland preservation.

Transportation and Circulation: The City seeks to plan and provide for a safe, efficient, and environmentally sensitive network of streets and highways for movement of people and goods. The element reflects a careful evaluation of community concerns and the long-range need to provide for alternatives to private automobile use. The proposed project is consistent with this policy in that the project will provide improved access to the site as well as an extension of Bradford Road through the northwestern portion of the site. The update of the Master Plan and the proposed projects within it comply with the following goals, policies, and implementation measures of this element. Please refer to section **4.5 TRAFFIC AND CIRCULATION** for further information.

Goal 10.6 Aviation Facilities. Maintain, protect, and improve the facilities and services of the Watsonville Municipal Airport as part of the regional transportation network.

Goal 10.10 Emergency Access. Ensure sufficient provision of emergency or secondary access and maintain acceptable response times for all parts of the service area.

Policy 10.Q Aviation Facilities. As the only general aviation airport in Santa Cruz County, the Watsonville Airport shall be protected from adjacent development which is incompatible with existing and future services as outlined in the Airport Master Plan and Regional Airport System Plan.

Implementation Measure 10.Q.1 Cooperative Planning. The County of Santa Cruz and the City shall coordinate land use planning for parcels impacted by airport operations. The City shall encourage the County to revise the Pajaro Valley General Plan to be consistent with *Watsonville: 2005*.

Implementation Measure 10.Q.2 Zoning for Safety. The City shall maintain strict zoning and land use controls within the Airport Operations Impact Area.

Implementation Measure 10.Q.3 State Guidelines. The City shall use the State's guidelines to review and manage development within the airport's area of influence.

Policy 10.R Airport Operations. The City shall continue to emphasize the economic importance of airport operations to the Watsonville Planning Area and to the regional transportation system.

Implementation Measure 10.R.1 Airport Improvements. The City shall continue to seek available funding sources and make appropriate capital improvements consistent with the recommendations of the Master Plan.

Implementation Measure 10.R.2 Project Funding. The City shall work with the local transportation commission, California Department of Transportation, and State Transportation Commission to ensure that projects at the Watsonville Airport are given funding priority in the State Transportation Improvement Program.

Implementation Measure 10.R.3 Master Plan Update. The City shall review the Airport Master Plan at least every five years, beginning with the 1994 update, to determine the need for additional updating.

Public Facilities and Services: Goals and policies are provided for infrastructure development, water supply, wastewater management, solid waste management, library services, educational services and public safety. The project is consistent with the goals, policies, and implementation measures of this chapter.

Public Safety: The City addresses the public safety and noise control through analysis of conditions and hazards that have the potential to cause loss of life, injury, property damage, economic loss, and social dislocation. The update of the Master Plan and the proposed projects within it comply with the following goals, policies, and implementation measures of this element.

Goal 12.1 Land Use Safety. Plan for and regulate the uses of land in order to provide a pattern of urban development which will minimize exposure to hazards from either natural or human-related causes.

Goal 12.8 Noise Hazard Control. Evaluate new and existing land uses in the City for compatibility related to noise effects and require, as appropriate, mitigation where harmful effects can be identified and measurable improvement will result. The project is consistent with this goal. Please refer to section **4.7 NOISE** for further information.

Policy 12.A Environmental and Public Safety. The City shall plan for and maintain development standards that minimize risks to human lives and property resulting from environmental and man-caused hazards. The City shall protect neighboring residential development from the immediate threats of potentially hazardous industrial or agricultural materials and airport hazards through careful land use planning.

Implementation Measure 12.A.1 Airport Compatibility. The City shall use its development review process to ensure that proposals within the Airport Operations Impact Area are carefully analyzed to prevent and minimize potential hazards. Projects shall be consistent with the City's and State's Guidelines for buildings and land uses compatible with airports.

Implementation Measure 12.A.2 Airport Operation Buffer. **T**hose areas within the safety sensitive airport operations buffer area shall be maintained in open space, which serves agricultural, recreational, alternative transportation, and/or environmental protection needs.

Implementation Measure 12.M.7 Aircraft Noise. The City shall periodically review and update noise contour measurements as aircraft operations increase or change in nature. Recommendations for noise attenuation contained in the Watsonville Airport Master Plan shall be implemented on a project-by-project basis.

City of Watsonville Zoning

The Watsonville Municipal Airport is zoned Transportation, Communications, and Utilities District (TCU). The purpose of this District is to establish land uses pertaining to transportation, communication, and utilities, to minimize hazards and public nuisances, and to maintain a high level of compatibility with adjacent districts. Permitted uses in this district include: public utility distribution lines, towers, and poles, and underground facilities for the distribution of gas, water, telephone, television, and electricity. The buildout of the Master Plan would be compatible with existing zoning for the site.

The Watsonville Municipal Code includes Chapter 4, Airport Zoning: Height of Structures and Use of Airspace. The code states the purpose of regulating the use of airspace for the health, safety, and general welfare of the inhabitants of the City and the County by preventing the creation or establishment of airport hazards, by protecting the lives and property of the uses of the airport and of the land occupants in its vicinity, and preventing destruction and impairment of the utility of the airport.

County of Santa Cruz General Plan and Local Coastal Program

The County of Santa Cruz General Plan and Local Coastal Program (LCP) was adopted by the Board of Supervisors in May 1994 and certified by the Coastal Commission in December 1994. The General Plan and LCP Land Use maps designate the project area under the urban land use designation map for Pajaro Valley Planning Area. The map indicates that the land uses surrounding the airport include agriculture, very low, low, and medium density urban residential, and service commercial/light industrial.

The Circulation Element of the County General Plan contains objectives, policies, and programs for the County's airport environs around Watsonville Municipal Airport.

Policy 3.18.1 Prevention of Airspace Obstructions seeks to prevent the construction, erection, or operation of any object that obstructs the airspace required for flight of aircraft landing or taking off, that interferes with radio transmissions next to the airport, or which emits a steady or flashing light, except as needed for airport operations.

Policy 3.18.2 Creation of New Parcels in the Runway Protection Zone Area prohibits the creation of any new parcels within the Runway Protection (Clear or A) Zone. This prohibition does not apply to lot line adjustments, if the total number of existing parcels does not increase and the lot line adjustment does not increase safety conflicts by placing potential building envelopes in a more hazardous area.

Policy 3.18.3 Land Use Limitation in Runway Protection (Clear or A) Zones seeks to limit new development within the Runway Protection (Clear or A) Zone to residential infill on existing vacant legal parcels and remodeling, refurbishing, or expansion of existing structures; and require that new structures or additions be sited to minimize potential safety conflicts. The maximum allowable residential density in the Runway Protection Zone area shall be equivalent to Urban Low Residential (R-UL), and the construction of new accessory dwelling units is not permitted.

Policy 3.18.4 Land Use Limitation in Airport Approach (B) Zones allows a maximum residential density equivalent to Urban Low Residential (R-UL) within the Airport Approach (B) Zones.

Policy 3.18.5 Deed Recordation Acknowledging Airport Hazard require as a condition to any building permit for the expansion of any structure or the creation of any new structures in the Runway Protection (A) or Airport approach (B) Zones, that a statement be recorded on the deed for the parcel acknowledging the presence of an airport hazard, and describing the restriction on air space obstruction, interference with radio transmissions, and creation of lighting hazards in the area surrounding the airport.

Santa Cruz County has also set up programs for the development surrounding Watsonville Municipal Airport. They are as follows:

1. Develop specific design policies for the airport area including special standards for Noise Impact (C) zones, focusing on noise attenuation and siting that minimizes safety conflicts. Consider safety and noise issues associated with airport operations, as well as resident's ability to improve, remodel, or refurbish their property.

2. Work with the City of Watsonville, aviation interests, and community members to ensure compatibility between the airport and surrounding neighborhoods.

3. Amend County Code to include Runway Protection Zone (RPZ) Combining District with regulations that implement the safety standards of this section.

The project is consistent with these policies of the County of Santa Cruz. Airport Clear Zone Constraint maps are on file at the County Planning Department.

California Department of Transportation

The California Department of Transportation (Caltrans) Division of Aeronautics has published the *California Airport Land Use Planning Handbook* (January 2002). This handbook serves as a guideline "to support and amplify the article of the State Aeronautics Act (California Public Utilities Code, Section 21670 et seq.) which establishes statewide requirements for the conduct of airport land use compatibility planning." The City of Watsonville and the County of Santa Cruz have chosen not to form an Airport Land Use Commission, but to follow the alternative process. According to state law, the following processes have been provided through the adoption of an Airport Master Plan, and through the other applicable planning documents listed above.

- Preparation, adoption, and amendment of a compatibility plan for the Airport and designation of an agency responsible for these actions;
- Public and agency notification regarding compatibility plan preparation, adoption, or amendment;
- Mediation of disputes regarding preparation, adoption, or amendment of compatibility plans; and
- Amendment of general plans and specific plans to be consistent with the compatibility plans.

IMPACTS AND MITIGATION MEASURES

Standards of Significance

In accordance with the California Environmental Quality Act (CEQA), State CEQA Guidelines, and agency and professional standards, a project impact would be considered significant if the project would:

- Result in conflicts with adjacent land uses;
- Conflict with any applicable land use plan, policy or regulation;
- Physically divide an established community; or
- Involve other changes in the existing environment which, due to their location or nature, could result in conversion of farmland to non-agricultural uses or result in impairment of the agricultural productivity of prime agricultural land.

Impacts and Mitigation Measures

The County of Santa Cruz has listed a site within 10,000 feet of the Airport's main runway as one of 32 sites being considered for a new County landfill. This would constitute an incompatible land use with the existing airport by CEQA and FAA standards. Action has been taken by Airport staff to inform the County of the safety issues associated with placement of a landfill near the Airport. The site chosen by the County will undergo a thorough environmental review at the time of proposal, including any possible impacts to vicinity airports.

Impact 4.9-1: There is the potential for a land use conflict between the Airport uses and the planned PVUSD New Millennium High School. This is considered a *less-than-significant* impact.

The Watsonville General Plan delineates the Airport Operations Impact Area and the Airport/Land Use Compatibility Criteria. By controlling land use and density, and limiting high occupancy structures such as schools, hotels, and hospitals, the surrounding population's exposure to airport noise and accident risk is minimized. See also section **4.7 NOISE** for discussion on noise impacts to the school site.

The runway protection zones are shown on the Airport Layout Plan in the Master Plan. The new high school site does not fall within either the existing or future (with the 800 foot extension of runway 2-20) safety zones.

Evaluation of the proposed high school, and the proposed improvements in the Draft Airport Master Plan, by the California Department of Education and the Caltrans Division of Aeronautics determined that there would not be any significant hazards.

Mitigation

None required.

5.0 CEQA CONSIDERATIONS

UNAVOIDABLE ADVERSE IMPACTS

For the purpose of this section, unavoidable adverse impacts are those effects of the project which would significantly affect either natural systems or other community resources, and cannot be mitigated to a less-than-significant level. This EIR did not identify any significant unavoidable impacts for the proposed project.

GROWTH INDUCEMENT

CEQA requires that any growth-inducing aspect of a project be discussed in an EIR (§15126(g)). This discussion should include consideration of ways in which the project could directly or indirectly foster economic or population growth in adjacent and/or surrounding areas. Projects which could remove obstacles to population growth (such as major public service expansion) must also be considered in this discussion. According to CEQA, it must not be assumed that growth in any area is necessarily beneficial, detrimental or of little significance to the environment.

The proposed projects in the Master Plan represent infill of the Airport. All development is directly related to airport operation. The proposed projects do not contain any residential components and therefore would not directly contribute to regional population growth. In addition, the project would not result in population growth-inducing effects, as it would not create demand for new housing, or introduce new public services or infrastructure to an area not serviced.

CUMULATIVE IMPACTS

An evaluation of cumulative impacts is required by CEQA when they are significant, but need not be as detailed as the discussion of project impacts. Section 15355 of the CEQA Guidelines defines cumulative impacts as "…two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts." The projects included in this cumulative analysis are summarized in **Table 5-1**.

According to the California State CEQA Guidelines §15130 (a)(1), there is no need to evaluate cumulative impacts to which the project does not contribute. The geographic scope of the cumulative analysis is generally the City of Watsonville and the County of Santa Cruz

Table 5-1 Cumulative Projects List					
PROJECT	Residential		Office/ Industrial Sq. Ft.	Commercial Sq. Ft.	Other
	SFD's	MFD's			
Under Construction or Completed After August 1999 (Background Traffic Added to Existing)					
350 Anna Street			59,711		
Cherry Blossom – 26 Loma Prieta	32				
Vista Verde Affordable Housing Project - Stewart Street (In County)		76			
195 Aviation Way – Apex Glass			18,788 warehouse/office		
25 Hangar Way – Beverly Fabrics			60,000 warehouse		
339 Airport Blvd.		3			
135 Riverside		8			
Northgate Center – 298 Green Valley Road		82	147,000 office	16,000	
160 Green Valley Road – Green Valley Surgery Center			17,256 medical facility		
Airport Inn Express-112 Airport Blvd.					42-room hotel
Sunset Cove - Harkins Slough Road/Ohlone Parkway	111				
484 Airport Boulevard (warehouse)			18,000		
St. Francis High School (In County)					450 students
TOTAL BACKGROUND – ADD TO EXISTING	**143**	**169**	**320,755 s.f.**	**16,000 s.f.**	**42 hotel rooms 450 students**
CUMULATIVE -- Approved					
Rose Blossom - 55 Ross Avenue	16				
547 Airport Blvd.			27,000 light industrial		
Corralitos Cottages – Pajaro Lane (County Project)	58	32			
Bay Breeze	114				
CSC Optical - 180 Westgate			52,056		
Jared's Place - 29 Airport Blvd.	16				
7072 Loma Prieta	6				
906 Freedom		3			
209 Palm Ave.	4				
Gino's Court – 115 Ross Ave.	6				
Franich	257	133			
PVUSD New High School					2,200 students
CUMULATIVE -- Pending Applications					
Longview Cove – 520 Auto Center Drive		60			
20 Holm Road (townhouses)	25				
108 Green Valley Road (townhouses)	16				
Sea View Ranch (small lots and townhouses)	275	76			
Ohlone Estates – Errington Road	118	90			
Home Depot – Green Valley/Loma Prieta				115,000	
CUMULATIVE -- Potential Development					
Bergstrom Site			200,000 industrial		
TOTAL CUMULATIVE	**911**	**394**	**279,056 s.f.**	**115,000 s.f.**	**2,200 students**
SOURCE: City of Watsonville Community Development Department and County of Santa Cruz Redevelopment Agency					

areas in the vicinity of the Airport, as appropriate. In some instances, such as air quality and biotic resources, a larger more regional impact area is considered to be the geographic extent of the evaluation. For air quality, the regional extent is the North Central Coast Air Basin that includes Monterey, Santa Cruz and San Benito Counties. For Biological resources, Santa Cruz County is generally the geographic extent. Relevant cumulative impacts to which the project would contribute are discussed below.

Biotic Resources

The loss of native biological resources could be adversely affected by cumulative development, particularly in areas near the Watsonville Slough system. In general, the mitigation for loss of sensitive habitat is replacement of like in appropriate areas. Because it would be difficult to quantify the amount of sensitive habitats that would be lost due to cumulative development, a determination can not be made at this time regarding the availability of suitable mitigation areas. Assuming that all projects would mitigate for losses similarly to the proposed project, at a one to one or greater replacement ratio, the cumulative impacts to biological resources would be less-than-significant.

Traffic and Circulation

Cumulative traffic impacts for cumulative buildout conditions are analyzed in detail in section **4.5 TRAFFIC AND CIRCULATION** of this EIR.

Air Quality

A contribution to cumulative air quality degradation in the North Central Coast Air Basin is expected due to cumulative development in the area. The cumulative effect of additional traffic movements in the area will lead to an increase in emissions.

Project consistency with the 2000 AQMP for the Monterey Bay Region is used by the District to determine a project's cumulative impact on regional air quality (i.e., ozone levels). Consistency of institutional projects is determined by comparing the estimated current population of the jurisdiction in which the project is to be located with the applicable population forecast in the *AMBAG 1997 Regional Population and Employment Forecast*. If the estimated current population does not exceed the forecasts, indirect emissions associated with the project are deemed to be consistent with the AQMP. Consistency of non-population related activities (i.e., airports) is evaluated on a case-by-case basis by MBUAPCD. A formal consistency determination is provided by AMBAG, which found that the current population of Watsonville is less than the forecasted. Based on AMBAG/MBUAPCD analysis, the projects will have a less-than-significant, cumulative impact on air quality. To ensure cumulative impacts are adequately mitigated to a less-than-significant level, responsible City and County agencies should comply with portions of the AQMP that require ozone precursor and PM_{10} controls.

Noise

Development of the cumulative projects would result in incremental increases in noise levels in the area, primarily from traffic. These impacts would be reduced to a less-than-significant level with adherence to all applicable State and County noise standards.

Water Supply

Long-term water supply within the Pajaro Valley is a regional issue of concern due to historical groundwater overdraft and seawater intrusion. Over pumping has resulted in a continuing decline in groundwater elevations in the basin with increasing encroachment of seawater intrusion along the coast. Recent studies indicate that the sustainable yield of the groundwater basin, with no seawater intrusion, is approximately 24,000 acre-feet per year (AFY), resulting in an overdraft of 45,000 AFY. The Pajaro Valley Water Management Agency's Basin Management Plan (BMP) identifies a series of projects intended to reduce groundwater overdraft, and the Agency is actively investigating and constructing projects to increase the recharge to the Pajaro Valley basin.

Any contribution to increased demand and overdraft conditions from the cumulative projects is considered a contribution to a significant cumulative impact under State CEQA Guidelines. Study results also indicate that, although necessary, water conservation measures and groundwater pumping management alone would not be enough to eliminate the overdraft and seawater intrusion problems.

Although cumulative water demand represents a small percentage of the total demand within the Pajaro Valley Water Management Agency jurisdiction, cumulative effects on water supply and groundwater withdrawal are considered significant and unavoidable under the current basin conditions. If at a future time, implementation of BMP projects significantly reduce or eliminate the groundwater recharge deficit, cumulative development would likely have less-than-significant effects on water supply in the region.

Land Use

The 2005 Watsonville General Plan contains policies that are designed to minimize land use conflicts with nearby uses. Cumulative development may result in land use compatibility issues with the surrounding existing uses.

The proposed new PVUSD high school would be a conflicting land use due to its proximity to the airport. This issue is discussed and mitigated for in the EIR prepared for the school site (Jones & Stokes, 2001). Implementation of the Airport Master Plan would not constitute a significant cumulative impact to land use as long as the mitigation measures proposed in the high school EIR are followed.

6.0 PROJECT ALTERNATIVES

INTRODUCTION

This section evaluates alternatives to the proposed Watsonville Airport Master Plan as required by CEQA. The State CEQA Guidelines (§15126(d)) require that an EIR describe and evaluate the comparative merits of a range of reasonable alternatives to the project, or to the location of the project, which could feasibly attain the basic objectives of the project. The guidelines further require that the discussion focus on alternatives capable of eliminating significant adverse impacts of the project, or reducing them to a less-than-significant level, even if these alternatives would impede to some degree the attainment of the project objectives, or would be more costly. The alternatives analysis should also identify any significant effects that may result from a given alternative.

As described in Section **3.0 PROJECT DESCRIPTION**, the following Master Plan objectives have been identified:

- Support the development of an efficient public use airport by:
  - Remedying existing operational deficiencies by lengthening and improving the primary runway to more fully accommodate turbine-powered aircraft (75 percent fleet with 60 percent load).
  - Remedying existing operational and safety deficiencies by installing a precision Instrument Landing System (ILS) to increase the number of hours each day that aircraft may operate in foggy conditions and to increase the overall safety of landings in all conditions.
  - Remedying existing space deficiencies by providing for the expansion and enhancement of the terminal and hangar facilities, plus providing new and improved access to accommodate new facilities.
  - Maintaining and enhancing natural resources on the site.
  - Facilitating the development of complementary light industrial and general commercial uses for affiliates of the airport.
  - Providing a fiscally responsible financial plan that will provide suitable facilities and generate revenues necessary for proper operation, management, and development of the airport.

- Provide for the development of the Watsonville Municipal Airport consistent with the Master Plan while minimizing adverse effects on the natural physical setting by:
  - Providing for development consistent with the resource protection regulations administered by the United States Army Corps of Engineers, United States Fish and Wildlife Service, the California Coastal Commission, and other agencies.
  - Protecting and enhancing wetlands and sensitive habitat areas.

- Provide for the development of the Watsonville Municipal Airport consistent with the Master Plan while minimizing adverse effects on adjacent land uses, the local community, and the region by:
  - Providing the basis for creation of a noise mitigation plan that ensures neighboring properties are not significantly affected by airport-generated noise.
  - Developing ancillary uses on the site that are designed to be compatible with existing and planned development in the area.

According to the State CEQA Guidelines, the alternatives required in an EIR are governed by the "rule of reason" that requires the EIR to set forth only those alternatives necessary to permit a reasoned choice. The primary focus of the alternatives section is to eliminate or reduce significant impacts, while also feasibly attaining the project objectives.

This Draft EIR found that all significant impacts could be reduced to a less-than-significant level with implementation of mitigation measures outlined in the EIR, except for impacts to water supply demand, which would remain significant and unavoidable due to the City's existing state of overdraft.

The alternatives, as well as their comparative merits, are described below.

NO PROJECT ALTERNATIVE

Description

CEQA Guidelines require discussion of the "No Project" alternative. Under the No Project Alternative, the existing Airport facilities would remain the same and the services currently provided by the Airport would not change. The Airport would continue to operate under the existing Master Plan.

Environmental Impacts

The No Project Alternative would avoid the anticipated environmental impacts associated with the proposed project. The significant and unavoidable impact of increased water demand would not occur. This alternative would not generate additional traffic to the site, nor would it cause an increase in air pollution emissions or noise. The No Project Alternative would not create any new conflicts with surrounding land uses. No mitigation would be required for this alternative. Although the projected increase in operations at the Airport would remain the same, the services provided would not change.

Conclusion

While the No Project Alternative is environmentally superior to the proposed project, it does not meet any of the objectives of the project. This alternative would eliminate the development of approximately 311,750 ft^2 of commercial/industrial development, several projects designed to improve the safety of on and off airport uses, and improvements to the Airport terminal facilities.

MODIFIED SITE DESIGN

Description

The Modified Site Design Alternative moves the hangars proposed for the northeast side of Runway 8-26 (projects 11 and 17) to the areas proposed for industrial development on the west side of Runway 2-20. Eliminating development on the northeast side of Runway 8-26 also removes the requisite access road from Burchell Avenue south to Airport property (project 6). Revenue-generating projects 14, 15a and 15e would then be eliminated and replaced by the airport related facilities. The Modified Site Design Alternative would reduce the amount of new commercial/industrial development from a total of 311,750 ft^2 to 162,500 ft^2. Instead of constructing a new access road between Manfre Road and Buena Vista Drive (project 14), an existing road, currently used exclusively by airport personnel, could be improved to allow access to the new hangars. All other proposed projects would remain the same, including the remaining commercial/industrial development. No development would take place in the area where the hangars are proposed in the original project plans.

Environmental Impacts

The Master Plan, under this alternative, would provide for incrementally reduced environmental impacts compared to the proposed plan. The areas that would result in an improvement in conditions compared with the proposed project are discussed below.

Geology and Soils

The Modified Site Design Alternative would reduce the amount of new structures that would be subject to ground shaking associated with seismic activity. It would also reduce the amount of overall grading. The impacts would be reduced to a less-than-significant level with the same mitigation required as provided in the proposed project.

Drainage and Water Quality

By reducing the amount of commercial/industrial development by almost 150,000 ft^2, this alternative would reduce ground disturbance, impervious surfaces, and storm runoff rates compared with the project. The Modified Site Design Alternative would still require the implementation of best management practices and erosion control measures to avoid impacts to water quality from construction of the remaining proposed Master Plan projects. The Airport's SWPPP, and the City's Hazardous Materials Management Plan, would also have to be amended for the remaining development, as with the proposed project, to reduce impacts to a less-than-significant level.

Biological Resources

The Modified Site Design Alternative would reduce the impacts to special status species and habitats by decreasing the amount of development in sensitive areas. By eliminating development in the area northeast of Runway 8-26, the total amount of jurisdictional wetlands to be filled would decrease from 1.47 acres to .08 acres. Although the amount of impacted wetlands is greatly reduced, permitting and mitigation would still be required.

Under Section 404 of the Clean Water Act, fill of .08 acres of jurisdictional wetlands would likely require a Nationwide permit rather than the individual permit that would be required for the proposed project. The process for obtaining a Nationwide permit is somewhat simplified compared to an individual permit. At the time of project design, consultation with the U.S. Army Corp of Engineers would determine what type of permitting would be necessary. The mitigation for the fill of wetlands in the proposed project calls for replacement at a ratio of 3:1. Following this same recommendation, the Modified Site Design Alternative would only require the creation of up to .24 acres of willow riparian and seasonal wetlands to mitigate the impacts to a less-than-significant level. The more extensive plan to restore 4.45 acres of wetlands on a City-owned parcel on Harkins Slough would not occur with reduced wetlands functions and values on that property.

Indirect impacts to special-status species on the west side of the airport property would be greatly reduced by the Modified Site Design Alternative. Because an existing range road could be improved and used as access to the proposed hangers in that area, the extension of Manfre Road to Buena Vista Drive would be unnecessary and the associated riparian/wetland areas would be avoided. The riparian/wetland areas in the vicinity of project 15d (commercial/industrial development) would still require the mitigation outlined for the proposed project to reduce impacts to a less-than-significant level.

Although this alternative would reduce the impacts to some areas of the property where tarplant and coastal terrace prairie habitat is found, the remaining projects would still require the implementation of the Tarplant Mitigation Plan as required by the proposed mitigation.

Traffic and Circulation

The Modified Site Design Alternative eliminates the need for construction of two proposed access roads: from Burchell Avenue south to the northeast portion of the Airport (project 6), and Burchell Avenue south to Manfre Road along the west side of the Airport (project 14). The traffic impacts associated with the construction these two roads would be avoided. This alternative would not affect the proposed parking facilities at the terminal building, and thus the proposed mitigation would still be required to reduce the impacts to a less-than-significant level.

Noise

By eliminating development in the northeastern portion of the project site, the Modified Site Design Alternative would not have noise impacts on the adjacent residential neighborhoods. Because there would be no noise impacts, there would be no requirement for the construction of an earth berm or sound wall to reduce impacts to a less-than-significant level.

Water Supply

The Modified Site Design Alternative reduces the amount of overall development at the Airport, and thus would also reduce the amount of new water demand. However, because the City of Watsonville groundwater system is currently in an overdraft state, any increase in water demand, as is the case with this alternative, would constitute a significant and unavoidable impact to the water system.

Conclusion

This alternative would result in less commercial/industrial development on Airport property, and thus would not fully meet the objectives of the Master Plan to support the development of an efficient public use airport. Overall, the Modified Site Design Alternative would reduce the environmental impacts of the project while meeting the basic objectives of the project.

REDUCED SCALE ALTERNATIVE

Description

The Reduced Scale Alternative reduces the square footage of development by approximately 50 percent. This is accomplished by eliminating a portion of the proposed hangars to the northeast of Runway 8-26 (project 11), a portion of the proposed commercial/industrial development on the west side of Runway 2-20 (project 15a), and a portion of the proposed commercial/industrial development to the northwest of Runway 8-26 (approximately half of project 15c). The proposed road to provide access to the new hangars would be moved from Burchell Avenue to a neighborhood street closer to the remaining proposed hangars.

Environmental Impacts

The Master Plan, under this alternative, would provide for incrementally reduced environmental impacts compared to the proposed plan. The areas that would result in an improvement in conditions compared with the proposed project are discussed below.

Geology and Soils

The Reduced Scale Alternative would reduce the amount of new structures that would be subject to ground shaking associated with seismic activity. It would also reduce the amount of overall grading. The impacts would be reduced to a less-than-significant level with the same mitigation required as provided in the proposed project.

Drainage and Water Quality

By reducing the amount of commercial/industrial development by almost 150,000 ft^2, this alternative would reduce ground disturbance, impervious surfaces, and storm runoff rates compared with the project. The Reduced Scale Alternative would still require the implementation of best management practices and erosion control measures to avoid impacts to water quality from construction of the remaining proposed Master Plan projects. The Airport's SWPPP, and the City's Hazardous Materials Management Plan, would also have to be amended for the remaining development, as with the proposed project, to reduce impacts to a less-than-significant level.

Biological Resources

The Reduced Scale Alternative would reduce the impacts to special status species and habitats by decreasing the amount of development in sensitive areas. The smaller scale development could be carefully sited so as to avoid, as much as possible, the sensitive habitat areas found on the Airport. Although this alternative would reduce the impacts to some areas of the property where tarplant, coastal terrace prairie habitat, and wetlands are found, the remaining projects would still require the implementation of the Tarplant Mitigation Plan and the Wetlands Mitigation Plan, as required by the proposed mitigation.

Traffic and Circulation

Project number 6, the extension of Burchell Avenue as a new airport access road, was incorporated to provide access to the new hangars. Eliminating a portion of the proposed hangars (project 11) would allow the access road to be moved further west, to an area that would be less intrusive to the surrounding residential neighborhood. Also, with fewer hangars constructed a lower amount of traffic would be generated by the new development. This alternative would not affect the proposed parking facilities at the terminal building, and thus the proposed mitigation would still be required to reduce the impacts to a less-than-significant level.

Noise

By minimizing development in the northeastern portion of the project site, the Reduced Scale Alternative would not have as much of a noise impact on the adjacent residential neighborhoods. Because the impacts due to project noise would be lessened, the construction of an earth berm or sound wall could be scaled down, but would still be required to reduce the impacts to a less-than-significant level.

Water Supply

The Reduced Scale Alternative reduces the amount of overall development at the Airport, and thus would also reduce the amount of new water demand. However, because the City of Watsonville groundwater system is currently in an overdraft state, any increase in water demand, as is the case with this alternative, would constitute a significant and unavoidable impact to the water system.

Conclusion

This alternative would meet most of the project objectives, but to a lesser extent than the proposed project. Although the Reduced Scale Alternative would lessen the environmental impacts of the project, none would be eliminated.

ENVIRONMENTALLY SUPERIOR ALTERNATIVE

CEQA requires that an environmentally superior alternative to the proposed project be specified, if one is identified. In general, the environmentally superior alternative is supposed to minimize adverse impacts to the project site and surrounding environment while achieving the basic objectives of the project. The "No Project" alternative could be considered the environmentally superior alternative because none of the adverse impacts associated with the proposed project would result. However, the "No Project" alternative does not satisfy any of the objectives of the project.

Therefore, the environmentally superior alternative, which satisfies most of the objectives of the project, is the Modified Project Design Alternative. Under this alternative, the biological, noise and traffic impacts would be reduced. Although this alternative would reduce the amount of commercial/industrial development on Airport property, it would meet the basic project objectives more so than the Reduced Scale Alternative to support the development of an efficient public use airport. At the same time, it greatly reduces the amount of wetlands to be filled, eliminates the generation of new noise impacts to the residences northeast of the Airport, and eliminates the need for construction of one proposed access road.

7.0 REFERENCES

REPORT PREPARATION

DENISE DUFFY AND ASSOCIATES

- Denise Duffy, Principal
- Stephanie Strelow, Project Manager
- Sharese Thompson, Assistant Planner & Graphics
- Steve McNeely, Graphics
- Suzi Downie, Administrative Assistant

CONSULTANTS

- Archaeological Consulting, Cultural Resources
- Brown-Buntin Associates, Inc., Noise Analysis
- Bryan Mori Biological Consulting Services, Wildlife Review
- Hexagon Transportation Consultants, Inc., Traffic Engineers
- John Gilchrist & Associates, Biological Consulting and Review

PERSONS CONTACTED

Keith Boyle, City of Watsonville Community Development Department
Martin Carver, Watsonville Municipal Airport Consultant
Barry Franklin, Federal Aviation Administration
Don French, Watsonville Municipal Airport
Patrick Matthews, Santa Cruz County Public Works, Solid Waste Division
Todd Muck, Association of Monterey Bay Area Governments
Joseph Rodriguez, Federal Aviation Administration
Jim Summerville, City of Watsonville Public Works
Gayland Swain, City of Watsonville Public Works
Tim Town, City of San Jose Municipal Water

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